



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

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## 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 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 Cluster mode for your initial deployment, be sure to finish configuring the primary node before configuring the secondary nodes.

To proceed, complete the following tasks:

1. Configure the primary node in your cluster (see [Configure the Primary Node Using the Expert Configuration Wizard, on page 2](#)).
2. If you have installed three appliances and want to add the second and third nodes to your cluster, see [Configure a Secondary Node Using the Expert Configuration Wizard, on page 18](#).

## Browser-Based Wizard Prerequisites

To use the browser-based wizard and ensure that it configures your appliance properly, do the following:

- 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.

## Configure the Primary Node Using the Expert Configuration Wizard

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



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**Important** The following second generation Cisco DNA 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 Cisco DNA Center appliance (Cisco part number DN1-HW-APL) *cannot* be configured using this wizard.

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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 Expert Configuration Wizard, on page 18](#) instead.



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**Note** 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 Cisco DNA 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 Cisco DNA 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)

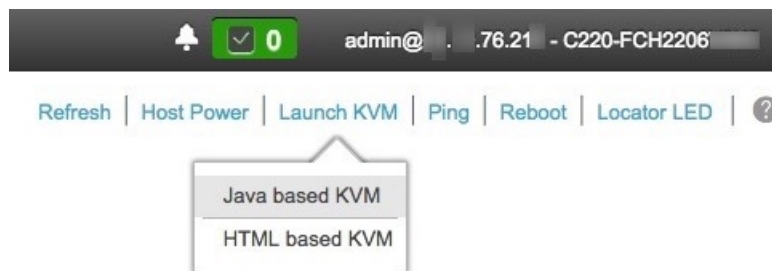
- Collected all of the information called for in [Required IP Addresses and Subnets](#) and [Required Configuration Information](#).
- Installed the first appliance as described in [Appliance Installation Workflow](#).
- Configured Cisco IMC browser access on the primary node, as described in [Enable 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 Cisco DNA Center. For a list of compatible browsers, see the [Release Notes](#) for the version of Cisco DNA Center you are installing.
- Enabled ICMP on the firewall between Cisco DNA 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 Expert Configuration wizard:

- 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.



- From the blue link menu, choose **Launch KVM** and then select either **Java based KVM** or **HTML based KVM**. If you select 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 select 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 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 >

Web installation: https://172.29.131.26:9004/
```

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

- d) Open this URL to bring up the **Appliance Configuration** screen.


Cisco DNA Center Appliance Configuration

Welcome to Cisco DNA Center

Before you can use Cisco DNA Center, first complete the appropriate appliance configuration workflow.

Expert Configuration

Access the full set of configuration options for a single appliance or cluster.



Start


- e) Click the **Expert Configuration** radio button, then click **Start**.

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

Expert Configuration Overview ×

Prepare your appliance for use with Cisco DNA Center by configuring its interfaces and entering cluster and other required information.

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Start Workflow

- f) 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 DNA Center Expert Configuration

### Appliance Interface Overview

In order for Cisco DNA 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. **Intracenter Link Interface:** Connects your appliance to your cluster.
3. **Management Network Interface:** (Optional) Accesses the Cisco DNA GUI from your Management network.
4. **Internet Access Interface:** (Optional) Accesses the internet.

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

At a minimum, you must configure the interfaces on your appliance's Enterprise and Cluster ports, as they are required for Cisco DNA 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 Expert Configuration wizard:


a) Click **Next**.

The **Will this appliance join a cluster?** screen opens.

Cisco DNA Center Expert Configuration

### Will this appliance join a cluster?

This appliance with software version **1.6.295** is currently being configured as the primary in the cluster



Yes  No

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

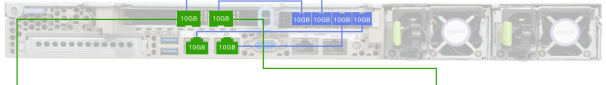
b) Click the **No** radio button (as you are configuring your cluster's primary node), then click **Next**.

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

Cisco DNA Center Expert Configuration

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

Currently we detected 4 connected ports (highlighted in green) on the appliance's rear panel. 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       Intracuster Link Network

The Enterprise Network Interface and Intracuster 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

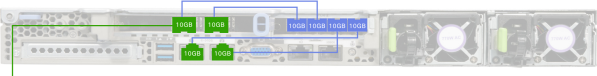
[Exit](#) [Back](#) [Next](#)

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

- Click the **allow access to these URLs** link to view a popup window that lists the URLs that Cisco DNA Center must be able to access.
  - Click the **open these ports** link to view a popup window that lists the network service ports that must be available for Cisco DNA Center to use.
- c) Indicate whether you want to configure dedicated Management and Internet Access interfaces, then click **Next**. The **Configure Your Enterprise Network Interface** screen opens.

Cisco DNA Center Expert Configuration

### Configure Your Enterprise Network Interface



Enterprise Network Interface

LACP Mode  
This mode provides fault tolerance features via active-backup policy.

Host IP Address: 10.106.172.47 Enter IPv4

Subnet Mask: 255.255.255.128 Enter IPv4 or 0-32 range

Default Gateway IP Address: 10.106.172.1 Enter Host name or IP address

DNS Servers: 171.70.166.183  
To enter multiple addresses, use comma as separator

[Add Static Route](#)

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

- d) Enter configuration values for the Enterprise interface.

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.

- 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 (which describes how to configure your Intracluster interface).

**Table 1: 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 Cisco DNA 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>.</li> </ol> <p>This will bring you back to the first wizard screen.</p> <ol style="list-style-type: none"> <li>2. Return to the Enterprise port's wizard screen and enter the gateway IP address you want to use.</li> </ol>



<p>DNS Servers field</p>	<p>Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with commas.</p> <p><b>Important</b> 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.</p>
<p>Add Static Route link</p>	<p>To configure a static route, click this link and then do the following:</p> <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

As explained in [Interface Cable Connections](#), this port is used to access the Cisco DNA 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 Management interfaces on the same port, skip this step and proceed 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, skip this step and proceed to Step 2g (which describes how to configure your Intracluster interface).

**Table 2: Primary 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 Servers field	Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with spaces.  <b>Important</b> <ul style="list-style-type: none"> <li>• For NTP, ensure port 123 (UDP) is open between Cisco DNA Center and your NTP server.</li> <li>• For each appliance in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for a node.</li> </ul>
Add Static Route link	To configure a static route, click this link and then do the following: <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>

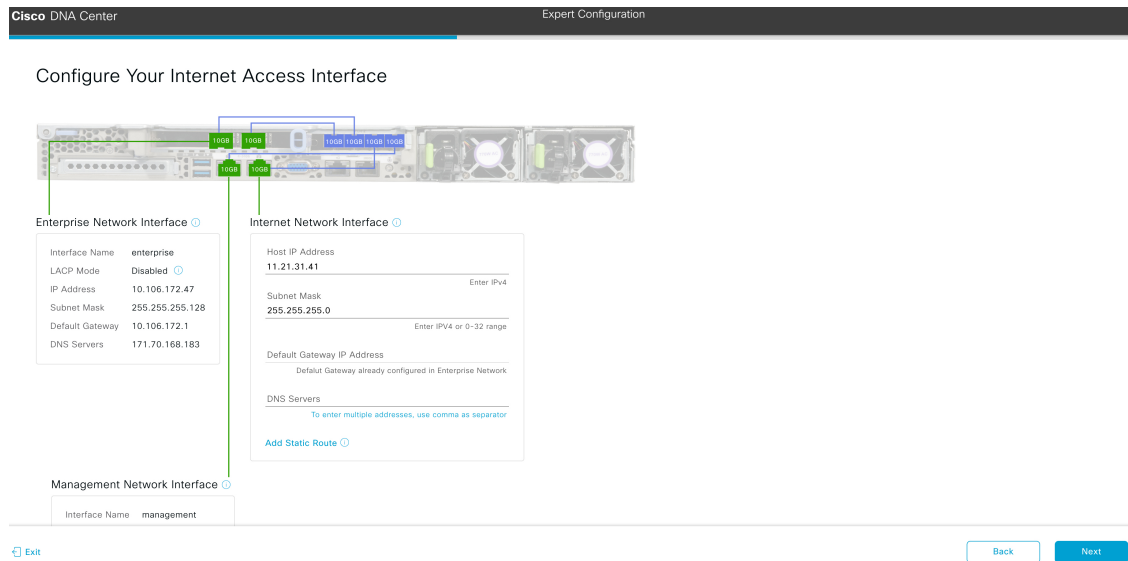
From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

Cisco DNA Center Expert Configuration

### Configure Your Internet Access Interface



Enterprise Network Interface

Interface Name	enterprise
LACP Mode	Disabled
IP Address	10.106.172.47
Subnet Mask	255.255.255.128
Default Gateway	10.106.172.1
DNS Servers	171.70.168.183

Internet Network Interface

Host IP Address	11.21.31.41
Subnet Mask	255.255.255.0
Default Gateway IP Address	10.106.172.1
DNS Servers	

Management Network Interface

Interface Name	management
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Exit Back Next

- f) (Optional) Enter configuration values for the Internet Access interface.

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.)

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

**Table 3: 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 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 Servers field	Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with spaces. <b>Important</b> For each appliance in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for a node.

Add Static Route link	<p>To configure a static route, click this link and then do the following:</p> <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>
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From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

The screenshot shows the 'Configure Your Intracluster Interface' screen in the Cisco DNA Center Expert Configuration wizard. At the top, there is a diagram of a network appliance with four ports labeled 100a, 100b, 100c, and 100d. Below the diagram are four configuration panels:

- Enterprise Network Interface:** Interface Name: enterprise, LACP Mode: Disabled, IP Address: 10.106.172.47, Subnet Mask: 255.255.255.128, Default Gateway: 10.106.172.1, DNS Servers: 171.70.168.183.
- Internet Network Interface:** Interface Name: internet, IP Address: 11.21.31.41, Subnet Mask: 255.255.255.0.
- Management Network Interface:** Interface Name: management, IP Address: 10.20.30.40, Subnet Mask: 255.255.255.0.
- Intracluster Link Network:** LACP Mode:  (disabled), with a note: "This mode provides fault tolerance features via active-backup policy." Fields for Host IP Address\* (169.254.6.66) and Subnet Mask\* (255.255.255.128) are present, with prompts to "Enter IPv4" and "Enter IPv4 or 0-32 range".

At the bottom of the screen, there are navigation buttons: "Exit" (with a close icon), "Back", and "Next".

- g) Enter configuration values for your Intracluster interface.

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.

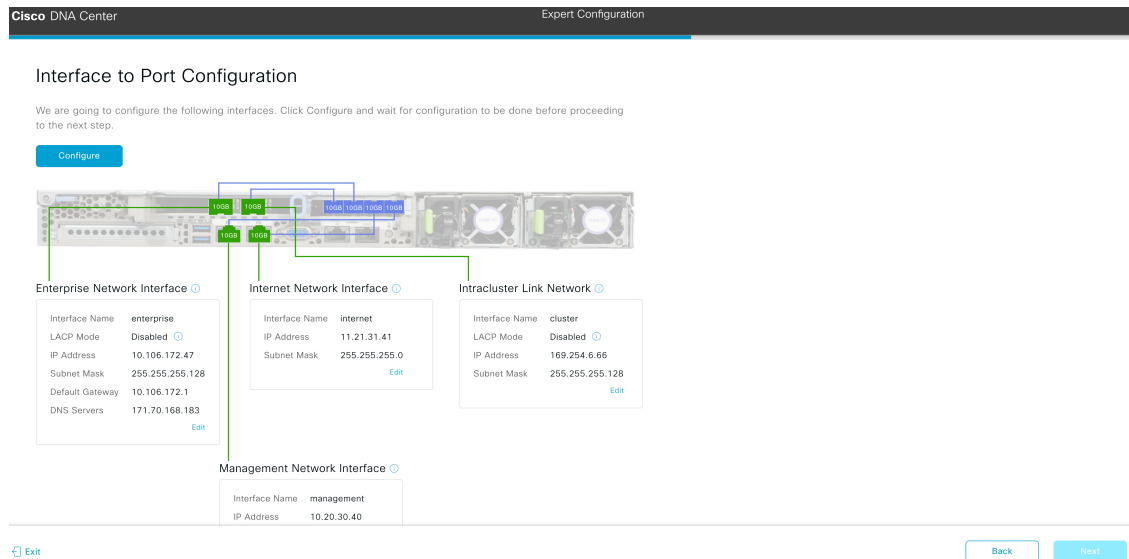
**Table 4: Primary Node Entries for the Intracluster Interface**

<p>LACP Mode slider</p>	<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 Cisco DNA Center's implementation of NIC bonding, see <a href="#">NIC Bonding Overview</a>.</p>
<p>Host IP Address field</p>	<p>Enter the IP address for the Cluster port. This is required. Note that you cannot change the address of the Cluster port later.</p>
<p>Subnet Mask field</p>	<p>Enter the netmask for the port's IP address. This is required.</p>

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.



h) 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.

- i) When you are happy with the interface settings, click **Configure**.
- j) After initial interface configuration has completed, click **Next**.

The wizard's **Configure Proxy Server Information** screen opens.

The screenshot shows the 'Configure Proxy Server Information' screen in the Cisco DNA Center Expert Configuration wizard. The page title is 'Configure Proxy Server Information'. Below the title, it asks 'Does your network use a proxy server to access the internet?' with radio buttons for 'Yes' (selected) and 'No'. The 'Proxy Server\*' field contains 'http://proxy-wsa.esl.example.com' with a hint 'E.g: http://example.com'. The 'Port\*' field contains '80' with a hint 'Enter port number between 0 to 65535'. There are also fields for 'Username' and 'Password'. At the bottom, there are buttons for 'Exit', 'Review', 'Back', and 'Next'.

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

**Table 5: 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 Cisco DNA 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.

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.

- To proceed to the next wizard screen, click **Next**.

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 **Cluster Details** screen opens.

- 1) Enter configuration values for your cluster.

**Table 6: Primary Node Entries for Cluster Settings**

<p>Container Subnet field</p>	<p>A dedicated, non-routed IP subnet that Cisco DNA 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. If you choose to enter another subnet, ensure that it does not conflict with or overlap any other subnet used by the Cisco DNA Center internal network or an external network. For more information, see the Container Subnet description in <a href="#">Required IP Addresses and Subnets</a>.</p>
<p>Cluster Subnet field</p>	<p>A dedicated, non-routed IP subnet that Cisco DNA 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. If you choose to enter another subnet, ensure that it does not conflict with or overlap any other subnet used by the Cisco DNA Center internal network or an external network. For more information, see the Cluster Subnet description in <a href="#">Required IP Addresses and Subnets</a>.</p>

NTP Servers field	Enter one or more NTP server addresses or hostnames, separated by commas. At least one NTP address or hostname is required.  For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.
Fully Qualified Domain Name (FQDN) field	Enter the fully qualified domain name (FQDN) for your cluster. Cisco DNA Center does the following with this hostname: <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 Cisco DNA Center manages.</li> <li>• In the Subject Alternative Name (SAN) field of Cisco DNA Center certificates, it uses the FQDN to define the Plug and Play server that should be used for device provisioning.</li> </ul>
Cluster VIP Addresses	
To access from Enterprise Network, To access from Management Network, For Internet Access, and For Intracluster Access fields  <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.	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 plan to stick with it, you can leave the fields in this section blank.  <b>Important</b> You must enter one virtual IP address for each configured network interface. You will not be able to complete the wizard unless you do so. This address is tied to the cluster link's status, which must be in the <b>UP</b> state.
Linux Admin Credentials	
Password and Confirm Password fields	Enter and then confirm the password for the <code>maglev</code> user.
Cisco DNA Center Admin Credentials	
Password and Confirm Password fields	Enter and then confirm the password for the default admin superuser, used to log in to Cisco DNA Center for the first time.

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.



- To proceed to the next wizard screen, click **Next**.

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.

**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. When you are happy with your settings, click Start Configuration.

Ports Configuration Completed

Interface Name	enterprise
LACP Mode	Disabled
IP Address	10.106.172.47
Subnet Mask	255.255.255.128
Default Gateway	10.106.172.1
DNS Servers	171.70.168.183

Interface Name	internet
IP Address	11.21.31.41
Subnet Mask	255.255.255.0

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

Interface Name	management
IP Address	10.20.30.40

- 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.
- To complete the configuration of your Cisco DNA 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.

**Configuration**

### Application Configuration In Progress

It should take about 90 minutes to complete the configuration of your appliance. As you wait, you can view a video that explains the next steps in the Cisco DNA Center setup process.

0%

Started: Invalid date

```

2021-01-06 02:39:32,811 | renew_certs : Collating the expiry results
2021-01-06 02:39:33,040 | renew_certs : debug
2021-01-06 02:39:33,339 | controller-manager.conf Jan 4 22:47:18 2021 GMT Jan 4
23:29:48 2022 GMT
2021-01-06 02:39:33,340 | -----
    
```

ABOUT STARTING CISCO DNA CENTER

0:00

While the configuration process is taking place, you can also watch a quick video that describes how to get started using Cisco DNA Center.

---

### 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 Expert Configuration Wizard](#), on page 18.

## Configure a Secondary Node Using the Expert Configuration Wizard

Perform the following steps to configure the second and third nodes in the cluster using the Expert Configuration wizard.



---

### Important

- In order to build a three-node cluster, the same version of the **System** package must be installed on your three Cisco DNA Center appliances. Otherwise, unexpected behavior and possible downtime can occur.
- The following second generation Cisco DNA Center appliances support configuration using the Expert 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 Cisco DNA Center appliance (Cisco part number DN1-HW-APL) *cannot* be configured using this wizard.



---

### Note

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 Cisco DNA 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`. In the following example, a few packages were not installed, such as the `application-policy` and `sd-access` packages. They are the only packages whose status is `NOT_DEPLOYED`. Your package status should look similar to this before configuring a secondary node.

```
[Thu Feb 04 17:07:37 UTC] maglev@192.192.192.224 (maglev-master-192.192.192.224) ~
$ maglev package status
[administration] password for 'admin':

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        -           2.1.310.61014  NOT_DEPLOYED
application-policy                 Application Policy                 -           2.1.310.117202 NOT_DEPLOYED
application-registry              Application Registry               -           2.1.310.117202 NOT_DEPLOYED
assurance                          Assurance - Base                  2.2.1.243  -             DEPLOYED
automation-core                   NCP - Services                   2.1.310.61014 -             DEPLOYED
base-provision-core               Automation - Base                 2.1.310.61014 -             DEPLOYED
cloud-connectivity-data-hub        Cloud Connectivity - Data Hub     1.6.0.263  -             DEPLOYED
cloud-connectivity-tethering        Cloud Connectivity - Tethering    2.1.1.37   -             DEPLOYED
command-runner                    Command Runner                    2.1.310.61014 -             DEPLOYED
device-onboarding                 Device Onboarding                 2.1.310.61014 -             DEPLOYED
dna-core-apps                     Network Experience Platform - Core 2.1.310.61014 -             DEPLOYED
dnac-platform                     Cisco DNA Center Platform         1.4.99.106 -             DEPLOYED
dnac-search                       Cisco DNA Center Global Search    1.4.0.11   -             DEPLOYED
image-management                  Image Management                  2.1.310.61014 -             DEPLOYED
machine-reasoning                 Machine Reasoning                 2.1.310.210298 -             DEPLOYED
ncp-system                        NCP - Base                       2.1.310.61014 -             DEPLOYED
ndp-base-analytics                 Network Data Platform - Base Analytics 1.6.175   -             DEPLOYED
ndp-platform                      Network Data Platform - Core      1.6.259   -             DEPLOYED
ndp-ui                             Network Data Platform - Manager   1.6.129   -             DEPLOYED
network-visibility                 Network Controller Platform       2.1.310.61014 -             DEPLOYED
path-trace                        Path Trace                        2.1.310.61014 -             DEPLOYED
platform-ui                       Cisco DNA Center UI               1.6.1.331 -             DEPLOYED
rbac-extensions                   RBAC Extensions                  2.1.310.1900012 -             DEPLOYED
sd-access                         SD Access                         -           2.1.310.61014  NOT_DEPLOYED
sensor-automation                 Automation - Sensor               -           2.1.310.61014  NOT_DEPLOYED
ssa                               Stealthwatch Security Analytics    2.1.310.1090254 -             DEPLOYED
system                            System                             1.6.301   -             DEPLOYED
system-commons                    System Commons                    2.1.310.61014 -             DEPLOYED
```

- 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 Cisco DNA 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 Cisco DNA 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 Expert Configuration Wizard, on page 2](#).
- 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 Cisco DNA 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 Cisco DNA Center you are installing.
- Enabled ICMP on the firewall between Cisco DNA 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 Expert 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 select either **Java based KVM** or **HTML based KVM**. If you select 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 select 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 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 >

Web installation: https://172.29.131.26:9004/
```

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

- d) Open this URL to bring up the **Appliance Configuration** screen.


Cisco DNA Center Appliance Configuration

Welcome to Cisco DNA Center

Before you can use Cisco DNA Center, first complete the appropriate appliance configuration workflow.

Expert Configuration

Access the full set of configuration options for a single appliance or cluster.



Start


- e) Click the **Expert Configuration** radio button, then click **Start**.

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

Expert Configuration Overview ×

Prepare your appliance for use with Cisco DNA Center by configuring its interfaces and entering cluster and other required information.

< ● ● ● ● ● ● ● ● ● ● >



Start Workflow

- f) 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 DNA Center Expert Configuration

### Appliance Interface Overview

In order for Cisco DNA 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. **Intracenter Link Interface:** Connects your appliance to your cluster.
3. **Management Network Interface:** (Optional) Accesses the Cisco DNA GUI from your Management network.
4. **Internet Access Interface:** (Optional) Accesses the internet.

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

At a minimum, you must configure the interfaces on your appliance's Enterprise and Cluster ports, as they are required for Cisco DNA 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 Expert Configuration wizard:


- a) Click **Next**.

The **Will this appliance join a cluster?** screen opens.

Cisco DNA Center Expert Configuration

### Will this appliance join a cluster?

This appliance with software version 1.6.295 is currently being configured as the primary in the cluster



Yes  No

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

- b) Click the **Yes** radio button, then click **Next**.

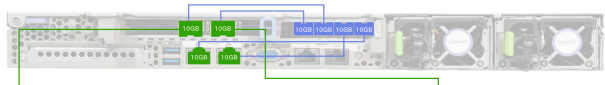
The **How would you like to set up your appliance interfaces?** screen opens.

Configure a Secondary Node Using the Expert Configuration Wizard

Cisco DNA Center Expert Configuration

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

Currently we detected 4 connected ports (highlighted in green) on the appliance's rear panel. 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

Intracuster Link Network

The Enterprise Network Interface and Intracuster 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?

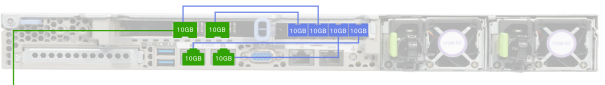
Yes  No

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

- c) Indicate whether you want to configure dedicated Management and Internet Access interfaces, then click **Next**. The **Configure Your Enterprise Network Interface** screen opens.

Cisco DNA Center Expert Configuration

### Configure Your Enterprise Network Interface



Enterprise Network interface

LACP Mode  
This mode provides fault tolerance features via active-backup policy.

Host IP Address: 10.106.172.27  Enter IPv4

Subnet Mask: 255.255.255.128  Enter IPv4 or 0-32 range

Default Gateway IP Address: 10.106.172.1  Enter Host name or IP address

DNS Servers: 171.70.168.183   
To enter multiple addresses, use comma as separator

[Add Static Route](#)

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

- d) Enter configuration values for the Enterprise interface.
- 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.



- 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 (which describes how to configure your Intracluster interface).

**Table 7: Secondary Node Entries for the Enterprise Interface**

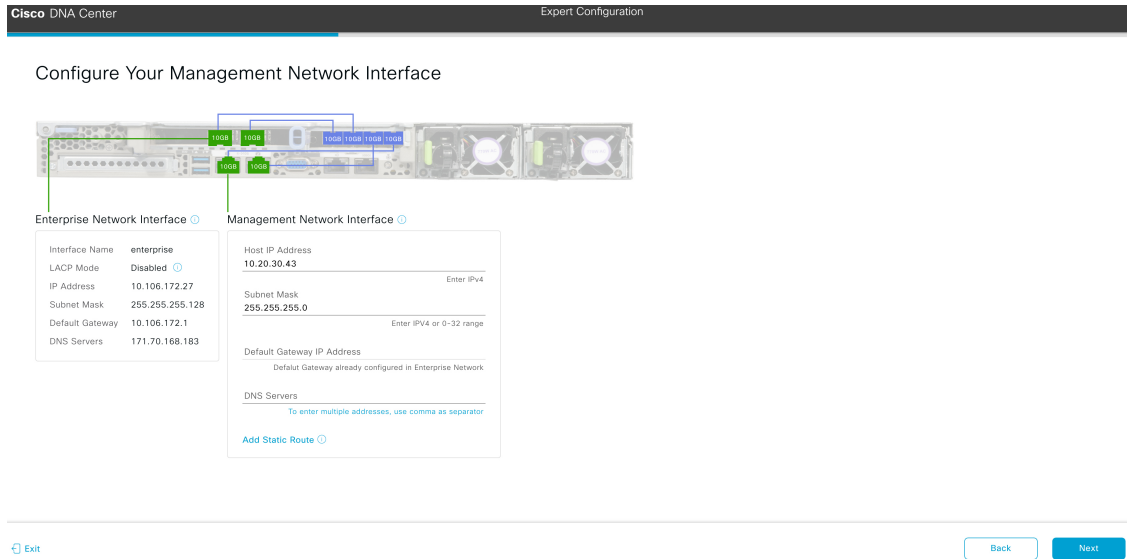
LACP Mode slider	<p>Choose one of the following network interface controller (NIC) bonding modes for the Enterprise interface:</p> <ul style="list-style-type: none"> <li>• <b>Active-Backup mode:</b> This mode provides fault tolerance by aggregating two Ethernet interfaces into a single logical channel. 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 Cisco DNA 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 Servers field	<p>Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with commas.</p> <p><b>Important</b> For each appliance in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for a node.</p>
Add Static Route link	<p>To configure a static route, click this link and then do the following:</p> <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

As explained in [Interface Cable Connections](#), this port is used to access the Cisco DNA 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 Management interfaces on the same port, skip this step and proceed 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, skip this step and proceed to Step 2g (which describes how to configure your Intracluster interface).

**Table 8: Secondary Node Entries for the Management Port**

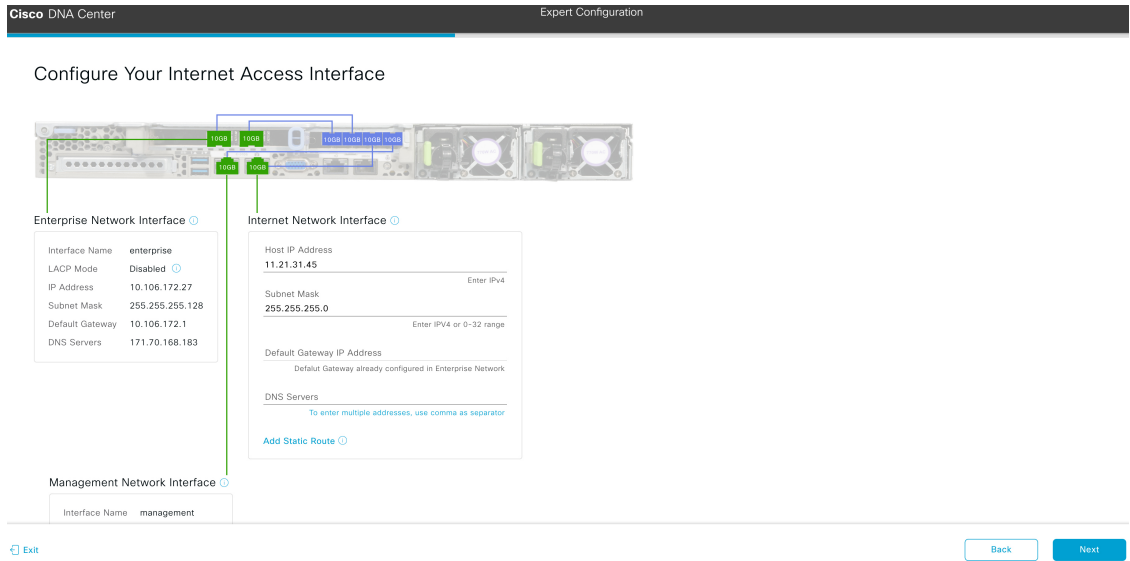
Host IP Address field	Enter the IP address for the Management port. This is required.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.
Default Gateway IP Address field	Enter a default gateway IP address to use for the port. <b>Important</b> Ensure that you enter a default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

DNS Servers field	<p>Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with spaces.</p> <p><b>Important</b></p> <ul style="list-style-type: none"> <li>• For NTP, ensure port 123 (UDP) is open between Cisco DNA Center and your NTP server.</li> <li>• For each appliance in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for a node.</li> </ul>
Add Static Route link	<p>To configure a static route, click this link and then do the following:</p> <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

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.)

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

**Table 9: 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 Servers field	Enter the IP address of the preferred DNS server. If entering multiple DNS servers, separate the IP addresses in the list with spaces. <b>Important</b> For each appliance in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for a node.

Add Static Route link	<p>To configure a static route, click this link and then do the following:</p> <ol style="list-style-type: none"> <li>1. Enter the route's network IP prefix, subnet mask, and nexthop IP address. To configure additional static routes, click +.</li> <li>2. Click <b>Add</b>.</li> </ol>
-----------------------	---

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

The screenshot shows the 'Configure Your Intracluster Interface' screen in the Cisco DNA Center Expert Configuration wizard. At the top, there is a diagram of a network appliance with four interfaces highlighted: Enterprise Network Interface (green), Internet Network Interface (blue), Intracluster Link Network (red), and Management Network Interface (yellow). Below the diagram are four configuration panels:

- Enterprise Network Interface:** Interface Name: enterprise, LACP Mode: Disabled, IP Address: 10.106.172.27, Subnet Mask: 255.255.255.128, Default Gateway: 10.106.172.1, DNS Servers: 171.70.168.183.
- Internet Network Interface:** Interface Name: internet, IP Address: 11.21.31.45, Subnet Mask: 255.255.255.0.
- Management Network Interface:** Interface Name: management, IP Address: 10.20.30.43, Subnet Mask: 255.255.255.0.
- Intracluster Link Network:** LACP Mode:  LACP Mode. This mode provides fault tolerance features via active-backup policy. Host IP Address\*: 169.254.6.64 (Enter IPv4), Subnet Mask\*: 255.255.255.128 (Enter IPv4 or 0-32 range).

At the bottom of the screen, there are navigation buttons: 'Exit' (with a close icon), 'Back', and 'Next'.

- g) Enter configuration values for your Intracluster interface.

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.

**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 Cisco DNA 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.

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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.

## Configure a Secondary Node Using the Expert Configuration Wizard

Cisco DNA Center Expert Configuration

### Interface to Port Configuration

We are going to configure the following interfaces. Click Configure and wait for configuration to be done before proceeding to the next step.

[Configure](#)

Interface Name	Interface Name	Interface Name
enterprise	internet	cluster
LACP Mode: Disabled	IP Address: 11.21.31.45	LACP Mode: Disabled
IP Address: 10.106.172.27	Subnet Mask: 255.255.255.0	IP Address: 169.254.6.64
Subnet Mask: 255.255.255.128	<a href="#">Edit</a>	Subnet Mask: 255.255.255.128
Default Gateway: 10.106.172.1		<a href="#">Edit</a>
DNS Servers: 171.70.168.183		
<a href="#">Edit</a>		
Management Network Interface		
Interface Name: management		
IP Address: 10.20.30.43		

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

- h) 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 to return to its wizard screen.
- i) When you are happy with the interface settings, click **Configure**.
- j) After initial interface configuration has completed, click **Next**.

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

Cisco DNA Center Expert Configuration

### Configure Proxy Server Information

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

Yes  No

Proxy Server\*

<http://proxy-wsa.esl.example.com>

E.g: <http://example.com>

Port\*

80

Enter port number between 0 to 65535.

Username

Password

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

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



**Table 11: 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 Cisco DNA 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.

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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 Cluster Details** screen opens.

Cisco DNA Center Expert Configuration

Primary Cluster Details

This appliance is getting added as a node for the Multi Cluster Setup with software version [1.6.236](#).

Primary IP  
**169.254.6.66**

IP should be within Intra-Cluster's 169.254.6.66/25

Username\*  
**admin**

Enter Linux Username

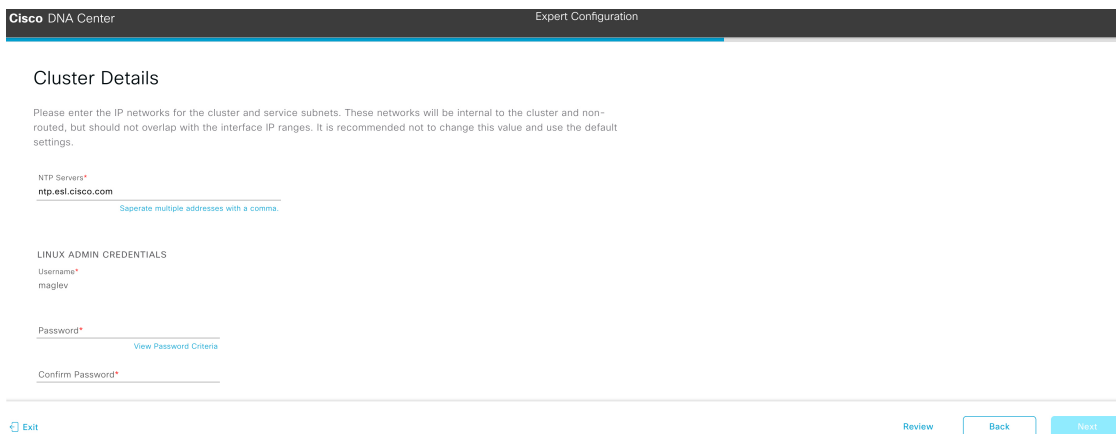
Password\*  
..... [SHOW](#)

Enter Linux Password

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

- 1) To establish a connection with your cluster's primary node, enter its IP address and login credentials, and then click **Next**.

The **Cluster Details** screen opens.



m) Enter configuration values for your cluster.

**Table 12: Secondary Node Entries for Cluster Settings**

NTP Servers field	Enter one or more NTP server addresses or hostnames, separated by commas. At least one NTP address or hostname is required.  For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.
Linux Admin Credentials	
Password and Confirm Password fields	Enter and then confirm the password for the <code>maglev</code> user.

From here, do one of the following:

- To close the wizard, click **Exit**. A popup window appears, indicating that the settings you have entered up to this point will be saved. Click **Exit** again to confirm that you want to close the wizard. When you restart the wizard and return to this screen, the settings that you entered previously will already be populated.
- To return to the previous wizard screen, click **Back**.
- To proceed to the next wizard screen, click **Next**.

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 DNA Center Expert Configuration

### 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. When you are happy with your settings, click Start Configuration.

Ports Configuration Completed

Enterprise Network Interface	
Interface Name	enterprise
LACP Mode	Disabled
IP Address	10.106.172.27
Subnet Mask	255.255.255.128
Default Gateway	10.106.172.1
DNS Servers	171.70.168.183
	<a href="#">Edit</a>

Internet Network Interface	
Interface Name	internet
IP Address	11.21.31.45
Subnet Mask	255.255.255.0
	<a href="#">Edit</a>

Intracluster Link Network	
Interface Name	cluster
LACP Mode	Disabled
IP Address	169.254.6.64
Subnet Mask	255.255.255.128
	<a href="#">Edit</a>

Management Network Interface	
Interface Name	management
IP Address	10.20.30.43

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

- n) 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.
- o) To complete the configuration of your Cisco DNA 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 DNA Center Configuration

### Application Configuration In Progress

It should take about 90 minutes to complete the configuration of your appliance. As you wait, you can view a video that explains the next steps in the Cisco DNA Center setup process.

0%

-----

ABOUT STARTING CISCO DNA CENTER

Started: Invalid date

```

2021-01-06 02:39:32,811 | renew_certs : Collating the expiry results
2021-01-06 02:39:33,040 | renew_certs : debug
2021-01-06 02:39:33,339 | controller-manager.conf Jan 4 22:47:18 2021 GMT Jan 4
23:29:48 2022 GMT
2021-01-06 02:39:33,340 | -----
                
```

While the configuration process is taking place, you can also watch a quick video that describes how to get started using Cisco DNA Center.

**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](#).

## Generate a Linux Password

When configuring your appliance, you have the option of using a Linux password that is generated by Cisco DNA Center. To generate this password, complete the following steps:

- Step 1** From the wizard's **Cluster Setting** screen, click the **Click here to Generate New Password** link. The **Generate Password** dialog box opens.

Generate Password

Password Generation Seed [Generate Password](#)

Seed phrase must contain letters, digits, space, underscore and hyphen

Auto Generated Password

ⓘ User is advised to append personal password with generated password for recommended security.  
Caution: Remember generated password for future logins.

Cancel Use Generated Password

- Step 2** In the **Password Generation Seed** field, enter a seed phrase.

The seed phrase can contain letters, numbers, spaces, underscores, and hyphens.

- Step 3** Click the **Generate Password** link.

In the **Auto Generated Password** field, the seed phrase appears as part of a random and secure password that Cisco DNA Center generates. You can either use this password as is or make any desired changes.

- Step 4** When you are happy with the password, click **Use Generated Password**.

Make sure to save this password for future logins.

# Upgrade to the Latest Cisco DNA Center Release

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

