

# **Configure the 112-Core Appliance Using the Browser-Based Wizard**

- Appliance Configuration Overview, on page 1
- Browser-Based Wizard Prerequisites, on page 1
- Configure the Primary Node Using the Advanced Install Configuration Wizard, on page 2
- Configure a Secondary Node Using the Advanced Install Configuration Wizard, on page 20
- Upgrade to the Latest Cisco DNA Center Release, on page 38

## **Appliance Configuration Overview**

You can deploy the 112-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 Advanced Install 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 Advanced Install Configuration Wizard, on page 20.

### **Browser-Based Wizard Prerequisites**

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

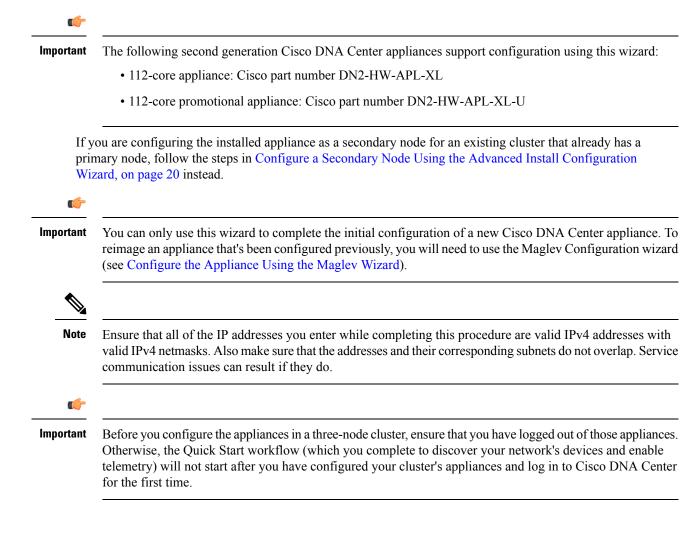
• Designate the Enterprise interface on your appliance to use the IP address, subnet mask, and default gateway that a DHCP server assigns to it. When you configure this interface in the wizard, you will not

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 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.



### Before you begin

Ensure that you:

 Installed the Cisco DNA Center software image onto your appliance, as described in Reimage the Appliance.

```
C)
```

- **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 112-core promotional appliance (Cisco part number DN2-HW-APL-XL-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 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.

+	admin(	@70	6.21 - C2	20-FCH2206	
Refresh Host I	Power   Launch KVM	Ping	Reboot	Locator LED	0
	Java based KVM				
	HTML based KVM				

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 HMTL-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 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
Velcome to Cisco DNA Center Before you can use Cisco DNA Center, first complete the appropriate appliance configural Advanced Install • Corese the full ref of configuration options for a single appliance or cluster.	
	Start

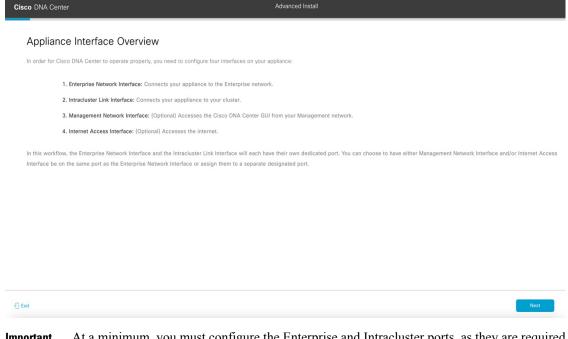
e) With the Advanced Install radio button selected, click Start.

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

Advanced Install Overview	
Prepare your appliance for use with Cisco DNA Center by configuring its interfaces and entering cluster and other required information.	
3 • • • • • • • •	
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.



- Important At a minimum, you must configure the Enterprise and Intracluster 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 Advanced Install wizard:
  - a) Click Next.

The Will this appliance join a cluster? screen opens.

Cisco DNA Center	Advanced Install
Will this appliance join a cluster?	
<ul> <li>Ves. This appliance will be added as a node to the primary node of a cluster.</li> <li>No, This appliance will be the primary node of a cluster.</li> </ul>	
0	

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	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 address encessary for configuration. If your network resides behind a firewall, be sure to allow access to these URLs and open these ports.	
Eterprise Network Interface	uster Link Network O
The Enterprise Network Interface and Intracluster Link Interface will be configured using the two 10-Gbps ports as sho above.	n
Would you like to have a dedicated Management Network Interface?	
Ytes O No	
Would you like to have a dedicated Internet Access Interface?	
O 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	Advanced Install
Configure Your Enterprise Network Interface	
LLCP Mode The mode provides And Telescore Rationes site active-facture partice, Net of Advances.	
10.106.17.2.47  Timer Phys Soliton Massi' 252.525.55.12  Enter Phys of Distribution Enter Phys of D-12 range Default Garway Physical Address	
10.106.172.1  former Hour relater on P address  form 171.730.166.183 former Prior	
	Back

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.

Table 1: Primary	v Node El	ntries for th	e Enterprise	Interface

LACP Mode slider	Choose one of the following network interface controller (NIC) bonding modes for the Enterprise interface:
	• Active-Backup mode: 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.
	• <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.
	For more information about Cisco DNA Center's implementation of NIC bonding, see NIC Bonding Overview.
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	Enter a default gateway IP address to use for the port.	
	<b>Important</b> Ensure that you enter a default gateway If address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.	
	<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:	
	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.	
	2. Return to the Enterprise port's wizard screen and enter the gateway IP addres you want to use.	
DNS field	Enter the IP address of the preferred DNS server. To enter additional DNS servers, click the Add (+) icon.	
	Important For each appliance in your cluster, configur a maximum of three DNS servers. Problem can occur if you configure more than three DNS servers for a node.	
Add/Edit Static Route link	To configure a static route, click this link and then do the following:	
	1. Enter the route's network IP prefix, subnet mask, an nexthop IP address.	
To configure additional static rout 2. Click Add.		
	2. Click Add.	

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.

Cisco DNA Center	Advanced Install
Configure Your Intracluster Interface	
	Tracluster Link Network
Itorface Name entrprise LACP Morie Databele □ P Addres 10.061/1247 Samer Mark 252.552.55128 Default Galewy 15.106.172.1 DMS-Server 171.70.316.113 State Roves 2	IACP More Coll         This mode provides fait librations features site active- bacture provides         100 2546.6.04         Enter Bruke         255.555.128         Center BVV or 0-32 reage
⊖ but	Back

e) 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.

### Note

- If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then proceed to Step 2f (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 2g (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 2h.

LACP Mode slider	Choose one of the following NIC bonding modes for the Intracluster interface:
	• Active-Backup mode: 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.
	• LACP mode: 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.
	For more information about Cisco DNA Center's implementation of NIC bonding, see NIC Bonding Overview.
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.

#### Table 2: Primary Node Entries for the Intracluster Interface

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.

isco DNA Center		Advanced Install	
Configure Your Manage	ment Network Interface		
Enterprise Network Interface O	Management 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	Heat IP Address*           12.20.30.40         Enser IPv4           Subser Maak*         255.255.0           Enser IPV4 or 0-32 range	ntradiculater Lunk VeterVork () Nondrich None Cellater LAC Madress 189:254.8.65 Solumet Madre 255.253.128 Static Reuter 2	
Static Routes 2	Default Gatewy IP Addess Dirtuit Gatewy ansaty configured in Enterprise Network  DNS Enter IPv4  Add0/Edit Static Rovie (6)		
Exit		Thex	Ne

f) (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 Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2h.

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.ImportantEnsure 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.		

Table 3: Primary Node Entries for the Management Port

DNS field	Enter the IP address of the preferred DNS server. To enter additional DNS servers, click the <b>Add</b> (+) icon.		
	<ul> <li>Important</li> <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/Edit Static Route link	<ul> <li>To configure a static route, click this link and then do the following:</li> <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 Add.</li> </ul>		

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.

onfigure Your Internet A		
Enterprise Network Interface •  Padores 10:106.172.47  Budor Max 25:255:25:27  Budor Max 25:255:25  Budor Max 25:255  Budor Max 25:25  Budor Max 25:25	Anagement Network Interface @ Interface Name Distances 10.3.3.0.0 Subert Maix 255.255.0	
DNS Servers 171.70.168.183 Static Routes 2	Internet Network Interface ©           Note IP Address?           121.31.41           Solver Hout"           255.255.0           Enter (PV4 or 0-32 range)	

g) (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.)

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.
	Important 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.
	ImportantFor 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/Edit Static Route link	To configure a static route, click this link and then do the following:	
	1. Enter the route's network IP prefix, subnet mask, and nexthop IP address.	
	To configure additional static routes, click +.	
	2. Click Add.	

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.

Cisco DNA Center		Advanced Install	
Interface to Port Configuration We are going to configure the following interfaces. Click Configure and to the next step. Configure	wait for configuration to be done before proceeding		
Enterprise Network Interface	Vanagement Network Interface ) Intracluster Link h	Verwork	
Interface Name enterprise LACP Mode Deasted © IP Address 10.106.172.47 Subort Mate 255.355.5128 Default Galeway In 10.65.172.1 DNS Servers 171.70.168.183 Static Routes 2 fat	Interface On		
€) Exit			Back

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 to proceed to the next wizard screen.

The wizard's Configure Proxy Server Information screen opens.

Cisco DNA Center	Advanced Install	
Configure Proxy Server Information		
Does your network use a proxy server to access the internet?		
Ves No Proxy Server*		
http://proxy.cisco.com E.g: http://example.com		
Port* 80		
Enter port number between 0 to 65535.		
Username		
Password		
f) 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 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.	
	Note 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 **Advanced Appliance Settings** screen opens.

Cisco DNA Center		Advanced Install	
Advanced Appliance Settin	gs		
CLUSTER VIRTUAL IP ADDRESSES Virtual IP addresses are used for traffic between the cl three-node clusters and for single-node clusters that you're using a single-node cluster, you can skip the VII	might be converted to three node later. If		
To access from Enterprise Network IP should be winthin the range 10.106.172.47/25.	To access from Management Network IP should be winthin the range 10.20.30.40/24.		
For Internet Access IP should be winthin the range 11.21.31.41/24.	For Intracluster Access IP should be winthin the range 169.254.6.86/25.		
Fully Qualified Domain Name (FQDN)	_		
LINUX ADMIN CREDENTIALS	CISCO DNA CENTER ADMIN CREDENTIALS		
Username* maglev	Usemame" admin		
maguev	acmin		
Password*	Password*		
SHOW	SHOW		
View Password Criteria	View Password Criteria		
Confirm Password*	Cenfirm Password*		
SHOW	SHOW		
NTP SERVER SETTINGS NTP Server* ntp.est.cisco.com Enter IPv4	+		
SUBNET SETTINGS			
Cisco DNA Center requires a dedicated, nonrouted IP	subnet to manage internal and cluster		
services. The following subnets are recommended, bu			
it doesn't conflict with or overlap any other subnet.			
Container Subnet*	Cluster Subnet*		
169.254.32.0/20	169.254.48.0/20		
Minimum subnet size is 21 bits. Slash notation is allow			
€ Exit		Review Dack	Next

1) Enter configuration values for your cluster.

Table 6: Primary Node Entries for Advance Appliance Settings

Cluster Virtual IP Add	resses		
Management Network, I Intracluster Access field Note If you confi Internet Acc as the Enterp	se Network, To access from For Internet Access, and For s gured the Management or cess interface on the same port prise interface, its corresponding displayed in this section.	between th configured both three- be converte have a sing	irtual IP address that will be used for traffic e cluster and the interfaces that you have on your primary node. This is required for node clusters and single-node clusters that will ed into a three-node cluster in the future. If you de-node cluster setup and plan to stick with it, ave the fields in this section blank. 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.

г

I

Fully Qualified Domain Name (FQDN) field	<ul> <li>Enter the fully qualified domain name (FQDN) for your cluster. Cisco DNA Center does the following with this hostname:</li> <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 the define the Plug and Play server that should be used for device provisioning.</li> </ul>
Linux Admin Credentials	
Password and Confirm Password fields	Enter and then confirm the password for the maglev 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.NoteAs a security measure, you'll be prompted to change this password after you log in. For more information, see Complete the Quick Start Workflow.
NTP Server Settings	I
NTP Servers field	Enter at least one NTP server address or hostname. To enter additional NTP server addresses or hostnames, click the <b>Add</b> (+) icon. For a production deployment, Cisco recommends that
	you configure a minimum of three NTP servers.
Subnet Settings	
Container Subnet field	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 Required IP Addresses and Subnets.

Cluster Subnet field	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 Required IP Addresses and Subnets.
----------------------	--

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.

Cisco DNA Center		Advanced Install
Summary Please review the settings that you have entered. If you need to make any ch the necessary uddites. You can download the generated configuration in JSC your settings, cick. Start Configuration.		
✓ Ports Configuration Completed		
Enterprise Network Interface O		< Network ⊙
Interface Name         entroprise           LACP Mode         Deabled           IP Address         10.06.172.47           Suncher Mask         255.255.253.01           Default Gateway         10.106.172.1           DVS Services         177.70.186.183           Stock Goods         2	Interface ()	Cluster Dasbed ① 20 25 46.66 20 555.255.128 2 1
Edt Interface Name	11.21.31.41	
€) Exit		Start Configuration

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

- m) 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.
- n) To complete the configuration of your Cisco DNA Center appliance, click Start Configuration.

The configuration process takes roughly 90 minutes. 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.

co 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.		
Initializing the cluster using kubeadm 30%	Started: 04/09/2020 12:15:36	
	2021-05-05T16:56:59.325Z4	
	2021-05-05T16:56:59.325Z5   credentialmanager.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT	
	2021-05-05T16:56:59.325Z6   kong.pem Apr 13 16:49:51 2020 GMT Apr 13 16:49:51 2021 GMT	
ABOUT STARTING CISCO DNA CENTER	2021-05-05T16:56:59.325Z7   kube-admin.pem Apr 13 16:49:50 2020 GMT Apr 13 16:49:50 2021 GMT	
	2021-05-05T16:56:59.325Z8   kube-worker-1.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT	
	2021-05-05T16:56:59.325Z9   maglev-registry.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT	
	2021-05-05T16:56:59.325Z10   apiserver.crt Apr 13 12:12:14 2020 GMT Apr 13 17:40:20 2021 GMT	
	2021-05-05T16:56:59.325Z11   apiserver-kubelet-client.crt Apr 13 12:12:14 2020 GMT Apr 13 17:40:20 2021 GMT	
	2021-05-05T16:56:59.325Z12   front-proxy-ca.crt Apr 13 17:40:20 2020 GMT Apr 11 17:40:20 2030 GMT	
	2021-05-05T16:56:59.325Z13   front-proxy-client.crt Apr 13 17:40:20 2020 GMT Apr 13 17:40:20 2021 GMT	
	2021-05-05T16:56:59.325Z14   kubelet.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:21 2021 GMT	
	2021-05-05T16:56:59.325Z15   admin.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:21 2021 GMT	
▶ 0:00 =0 C2 E	2021-05-05T16:56:59.325Z16   scheduler.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:22 2021 GMT	
	2021-05-05T16:56:59.325Z17   controller-manager.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:22 2021 GMT	
	2021-05-05T16:56:59.325Z18	

### 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 20.

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

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

<b>(</b>	
Important	• In order to build a three-node cluster, the same version of the <b>System</b> 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 this wizard:
	112-core appliance: Cisco part number DN2-HW-APL-XL
	• 112-core promotional appliance: Cisco part number DN2-HW-APL-XL-U
<b>(</b>	
Important	You can only use this wizard to complete the initial configuration of a new Cisco DNA 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).
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.
<b>(</b>	
Important	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 Cisco DNA Center for the first time.
	en joining each new secondary node to the cluster, you must specify the first host in the cluster as the nary 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.

NAME	DISPLAY_NAME	DEPLOYED	AVAILABLE	STATUS	PROGRESS
access-control-applicat	ion Access Control Application		2.1.310.61014	NOT_DEPLOYED	
application-policy			2.1.310.117202		
application-registry			2.1.310.117202		
assurance		2.2.1.243		DEPLOYED	
automation-core		2.1.310.61014		DEPLOYED	
base-provision-core		2.1.310.61014		DEPLOYED	
		1.6.0.263		DEPLOYED	
	ering Cloud Connectivity - Tethering			DEPLOYED	
command-runner		2.1.310.61014		DEPLOYED	
device-onboardina	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 112-core promotional appliance (Cisco part number DN2-HW-APL-XL-U).

- Configured the first appliance in the cluster, following the steps in Configure the Primary Node Using the Advanced Install 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 home page by clicking the **Help** icon  $(\bigcirc)$  and choosing **About** > **Show 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 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.

4	🖌 🔽 🚺 adm	in@ .	.76.21	- C220-FC	CH2206	10	
Refresh Host	Power   Launch KV	M Ping	g Rebo	oot   Loca	tor LED		?
	Java based KVM						
	HTML based KVM	1					

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 HMTL-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 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:		
Oferst a Oliver DNO Orester Oliveter		
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
Cisco DNA Center Welcome to Cisco DNA Center Before you can use Cisco DNA Center, first complete the appropriate appliance configuration Advanced Install Cocess the full set of configuration occuster.	
	Start

e) With the Advanced Install radio button selected, click Start.

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

# 

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	Advanced Install
Appliance Interface Overvion	ew ly, you need to configure four interfaces on your appliance:
1. Enterprise Network Interface: C	Connects your appliance to the Enterprise network.
2. Intracluster Link Interface: Con	nects your apppliance to your cluster.
3. Management Network Interface	e: (Optional) Accesses the Cisco DNA Center GUI from your Management network.
4. Internet Access Interface: (Opt	ional) Accesses the internet.
	e and the Intracluster Link Interface will each have their own dedicated port. You can choose to have either Management Network Interface and/or Internet Access Network Interface or assign them to a separate designated 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 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 Advanced Install configuration wizard:
  - a) Click Next.

The Will this appliance join a cluster? screen opens.

Cisco DNA Center	Advanced Install
Will this appliance join a cluster? This appliance is running on [software version] N/4.	
It is the paper will be added as a node to the primery node of a cluster.	
○ No. This appliance will be the primary node of a cluster.	
C tat	Book

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

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

Cisco DNA Center	dvanced 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 or either Management Network Interface and Internet Access Interface. Before you start, reserve the IP address necessary for configuration: if your network resides behind a frewalt, be sure to allow access to these URLs and open these ports.	
Enterprise Network Interface	ater Link Network O
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 O No	
Would you like to have a dedicated Internet Access Interface?	
• Yes O No	
() Ext	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.

DNA Center	Advanced Install	
Configure Your Enterprise Network Interface		
Enterprise Network Interface		
10.106.172.27  Safety Max <sup>2</sup> Safety Max <sup>2</sup> Safety Max <sup>2</sup> Ener IP4  Ener IP4  Ener IP4 or 0-32 ange  Enfort Safety /P Advess  10.106.172.1		
Enter Hust name or IP address           171.70.168.183           Enter IPv4           Add/Edit Static Route (2) ①		
		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.

LACP Mode slider	Choose one of the following network interface contr (NIC) bonding modes for the Enterprise interface:		
	• Active-Backup mode: 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.		
	• LACP mode: 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.		
	For more information about Cisco DNA Center's implementation of NIC bonding, see NIC Bonding Overview.		
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	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.
	<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:
	1. Delete the IP address that is currently listed in this field and then click Exit.
	This will bring you back to the first wizard screen.
	2. Return to the Enterprise port's wizard screen and enter the gateway IP address you want to use.
DNS field	Enter the IP address of the preferred DNS server. To ente additional DNS servers, click the Add (+) icon.
	Important 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/Edit Static Route link	To configure a static route, click this link and then do th following:
	1. Enter the route's network IP prefix, subnet mask, and nexthop IP address.
	To configure additional static routes, click +.
	2. Click Add.

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.

Cisco DNA Center	Advanced Install
Configure Your Intracluster Interface	
Eterprise Network Interface ©	
Interface Name enterprise LACP Mode Deasing P Address 10.16.17.2.27 Subort Markey 126.529.55.138 Default Carlewy 10.10.6.172.1 DNS Servers 177.73.185.133 State: Routes 2	Low Plane Contraction Statements Internet Intern
() bar	there there are a second secon

e) 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.

Note

- If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then proceed to Step 2f (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 2g (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 2h.

LACP Mode slider	Choose one of the following NIC bonding modes for the Intracluster interface:
	• Active-Backup mode: 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.
	• LACP mode: 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.
	For more information about Cisco DNA Center's implementation of NIC bonding, see NIC Bonding Overview.
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.

Table 8: Secondary Node Entries for the Intracluster Interface

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.

Cisco DNA Center		Advanced Install	
Configure Your Managemen	t Network Interface		
Enterprise Network Interface () Ma		racluster Link Network	
LACP Mode Disabled () IP Address 10.106.172.27	10.20.30.40 Enter IPv4 Subnet Mask*	Interface Name cluster LACP Mode Disabled ○ IP Address 169.254.6.64	
Subnet Mask         255.255.128           Default Gateway         10.106.172.1           DNS Servers         171.70.168.183	255.255.255.0	Subnet Mask 255.255.255.128 Static Routes 2	
	DMAL Gamery and product in Encode		
€) Exit			Back Next

f) (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 Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2h.

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.ImportantEnsure 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.	

### Table 9: Secondary Node Entries for the Management Port

DNS field	Enter the IP address of the preferred DNS server. To enter additional DNS servers, click the <b>Add</b> (+) icon.	
	Important • For NTP, ensure port 123 (UDP) is open between Cisco DNA Center and your NTP server.	
	• 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/Edit Static Route link	To configure a static route, click this link and then do the following:	
	1. Enter the route's network IP prefix, subnet mask, and nexthop IP address.	
	To configure additional static routes, click +.	
	2. Click Add.	

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.

o DNA Center	Advanced Install
Configure Your Internet Ac	ccess Interface
Eterptise Network Interface © LACP Mode Database 10.106.17.2.7 Sameri Mark 252.326.255.188 Defanta Glenwy 10.106.17.2.1 Dischart Glenwy 10.106.17.2.1	Management Network Interface       Intracluster Link Network         Interface Name       Intracluster Link Network         Management Network Interface       Intracluster Link Network         Interface Name       Intracluster Link Network         Submet Name       255 255 258 0         Statie: Notes       2
Static Routes 2	In the P Address: 11.22.32.44 Source Mark * 255.255.255.0 Default Gamewy IP Address Default Gamewy ansatz configured in Enterprint Network Default Gamewy ansatz configured in Enterprint Network Default Gamewy ansatz configured in Enterprint Network

g) (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.)

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> 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.	

### Table 10: Secondary Node Entries for the Internet Access Port

Add/Edit Static Route link	To configure a static route, click this link and then do the following:	
	1.	Enter the route's network IP prefix, subnet mask, and nexthop IP address.
		To configure additional static routes, click +.
	2.	Click Add.

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.

Cisco DNA Center		Advanced Install		
Interface to Port Configuration We are going to configure the following interfaces. Click Configure an to the next step. Configure	d wait for configuration to be done before proceeding			
	Anagement Network Interface O	etwork ©		
Interface Name enterprise LACP Mode Dasabled () IP Address 10 16 / 72 27 Sunder Mark 255 555 557 8 Defusils Generary 10.106.172.1 Drill Servers 171.70.168.183 Sacid Review 2 (a)	Subnet Mask 255.255.0 IP Address East Subnet Mask Static Routes	cluster 0540540 69254.8,54 65255.255.255 2 Ent		
P Autors Subart Mak	125.255.0 Em		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 to proceed to the next wizard screen.

The Configure Proxy Server Information screen opens.

Cisco DNA Center	Advanced Install		
Configure Proxy Server Inf Does your network use a proxy server to acces			
Ves No Prov Server* http://proxy.claco.com E.g. http://example.com Pert* 80			
Enter port number between 0 to 65555. Username Password			
0.00		Durden:	Mart

- 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:

Proxy Server field	Enter the URL or host name of an HTTPS network prox used to access the Internet.	
	Note 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.

Primary Clu						
	ster Details					
This appliance is gett	ing added as a node for the Multi Cluster Setup	with software version N/A.				
Primary IP 169.254.6.67						
	tra-Cluster's 169.254.6.64/25					
Username*						
admin						
	Enter Linux Username					
Password*						
	SHOW					
	Enter Linux Password					
				Review	Back	

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

Advanced Appliance Settings	
LINUX ADMIN CREDENTIALS	
Username*	
maglev	
Password*	
SHOW	
View Password Criteria	
Confirm Password*	
SHOW	
NTP SERVER SETTINGS	
NTP Server*	
ntp.esl.cisco.com +	
Enter IPv4	

The Advanced Appliance Settings screen opens.

Configure the 112-Core Appliance Using the Browser-Based Wizard

m)

#### Table 12: Secondary Node Entries for Advanced Appliance Settings

Linux Admin Credentials			
Password and Confirm Password fields	Enter and then confirm the password for the maglev user.		
NTP Server Settings			
NTP Server field	<ul><li>Enter at least one NTP server address or hostname. To enter additional NTP server addresses or hostnames, click the Add (+) icon.</li><li>For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.</li></ul>		

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.

	ou need to make any changes, click the appropriate Edit link a ted configuration in JSON format from <b>here</b> . When you are ha		
Ports Configuration Completed			
Enterprise Network Interface  Interface Name enterprise LACP Mode Disabled () IP Address 10.106.172.27 Subnet Mask 255.255.128	Management Network Interface ( Interface Name management IP Address 10.20.30.40 Subnet Mask 256.256.255.0 Exerc	Interface Name Cluster LACP Mode Disabled IP Address 169.254.6.64 Subret Misk 255.255.128	
Default Gateway 10.106.172.1 DNS Servers 171.70.168.183 Static Routes 2 Edit	Internet Network Interface O	Static Routes 2 Edit	
	IP Address 11.22.33.44 Subnet Mask 255.255.255.0		



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

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 configuration process takes roughly 90 minutes. 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.

sco DNA Center	Configuration
Application Configuration In Progress	
It should take about 90 minutes to complete the configuration of your appliance. As explains the next steps in the Cisco DNA Center setup process.	you walt, you can view a video that
	1
30%	Started: 04/09/2020 12:15:36
Initializing the cluster using kubeadm	2021-05-05117:10:27.76725   credentialmanager.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT
	2021-05-05T17:10:27.767Z6   kong.pem Apr 13 16:49:51 2020 GMT Apr 13 16:49:51 2021 GMT
	2021-05-05T17:10:27.767Z7   kube-admin.pem Apr 13 16:49:50 2020 GMT Apr 13 16:49:50 2021 GMT
ABOUT STARTING CISCO DNA CENTER	2021-05-05T17:10:27.767Z8   kube-worker-1.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT
	2021-05-05T17:10:27.767Z9   maglev-registry.pem Apr 13 16:49:52 2020 GMT Apr 13 16:49:52 2021 GMT
	2021-05-05T17:10:27.767Z10   apiserver.crt Apr 13 12:12:14 2020 GMT Apr 13 17:40:20 2021 GMT
	2021-05-05T17:10:27.767Z11   apiserver-kubelet-client.crt Apr 13 12:12:14 2020 GMT Apr 13 17:40:20 2021 GMT
	2021-05-05T17:10:27.767Z12   front-proxy-ca.crt Apr 13 17:40:20 2020 GMT Apr 11 17:40:20 2030 GMT
	2021-05-05T17:10:27.767Z13   front-proxy-client.crt Apr 13 17:40:20 2020 GMT Apr 13 17:40:20 2021 GMT
	2021-05-05T17:10:27.767Z14   kubelet.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:21 2021 GMT
	2021-05-05T17:10:27.767Z15   admin.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:21 2021 GMT
	2021-05-05T17:10:27.767Z16   scheduler.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:22 2021 GMT
▶ 000 +0 C E	2021-05-05T17:10:27.767Z17   controller-manager.conf Apr 13 12:12:14 2020 GMT Apr 13 17:40:22 2021 GMT
▶ 0.00 +0 C E	2021-05-05T17:10:27.767Z18

### 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 Cisco DNA Center Release**

For information about upgrading your current release of Cisco DNA Center, see the Cisco DNA Center Upgrade Guide.