Prepare the Appliance for Configuration

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Preparation for Appliance Configuration Overview

Before you can successfully configure your Catalyst Center appliance, first complete the following tasks:

1. Enable browser access to the appliance's Cisco IMC (see Enable Browser Access to the Cisco Integrated Management Controller).
2. Use Cisco IMC to check and adjust important hardware and switch settings (see Execute Preconfiguration Tasks).
3. If the Intel X710-DA4 network interface card (NIC) that shipped with your appliance is currently disabled, you need to enable it in order to make use of NIC bonding (see Enable NIC on an Upgraded Appliance, on page 12).
4. Catalyst Center software is preinstalled on your appliance, but you may need to reinstall the software in certain situations (such as before you change the current cluster link configuration). If this is the case, you must also complete the tasks described in Reimage the Appliance.

Note If you do not need to reimage your appliance, proceed to the "Appliance Configuration Overview" topic specific to the configuration wizard you want to use:

- Maglev configuration wizard
- Browser-based configuration wizard (44- and 56-core appliance)
- Browser-based configuration wizard (112-core appliance)

Enable Browser Access to the Cisco Integrated Management Controller

After installing the appliance, as described in Appliance Installation Workflow, use the Cisco IMC configuration utility to assign an IP address and gateway to the appliance's CIMC port. This gives you access to the Cisco IMC GUI, which you should use to configure the appliance.

After you complete the Cisco IMC setup, log in to Cisco IMC and run the tasks listed in Execute Preconfiguration Tasks to ensure correct configuration.

Tip To help ensure the security of your deployment, Cisco IMC prompts you to change the Cisco IMC user's default password when you boot the appliance for the first time. To change the Cisco IMC user password later, use the Cisco IMC GUI, as follows:

1. From the top-left corner of the GUI, click the **Toggle Navigation** icon ( ) and then choose **Admin** > **User Management**.

   The **Local User Management** tab should already be selected.
2. Check the check box for user `1`, and then click **Modify User**.

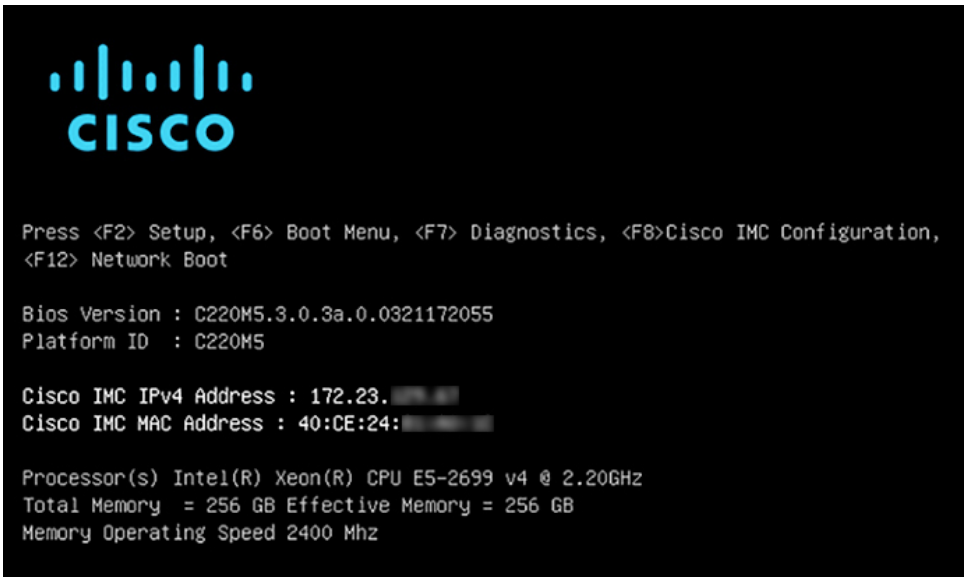
   The **Modify User Details** dialog box opens.
3. Check the **Change Password** check box.
4. Enter and confirm the new password, and then click **Save**.

Step 1 Access the appliance console by attaching either of the following:

- A KVM cable to the KVM connector on the appliance's front panel (component 11 on the front panel illustrated in Front and Rear Panels).
- A keyboard and monitor to the USB and VGA ports on the appliance's rear panel (components 2 and 5, respectively, on the rear panel illustrated in Front and Rear Panels).

Step 2 Make sure that the appliance's power cord is plugged in and the power is on.

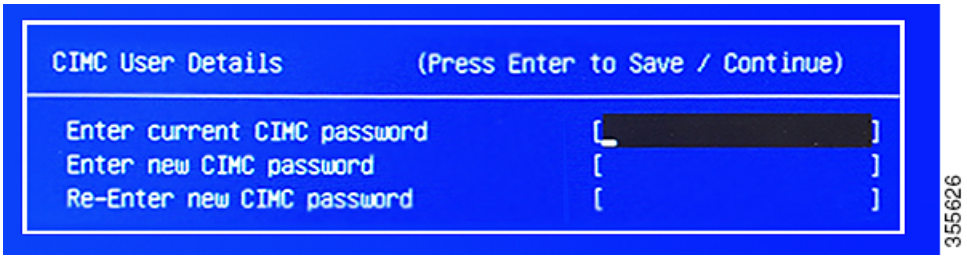
Step 3 Press the **Power** button on the front panel to boot the appliance.



The Cisco IMC configuration utility boot screen should be displayed, as shown below.

Step 4 As soon as the boot screen is displayed, press **F8** to perform Cisco IMC configuration.

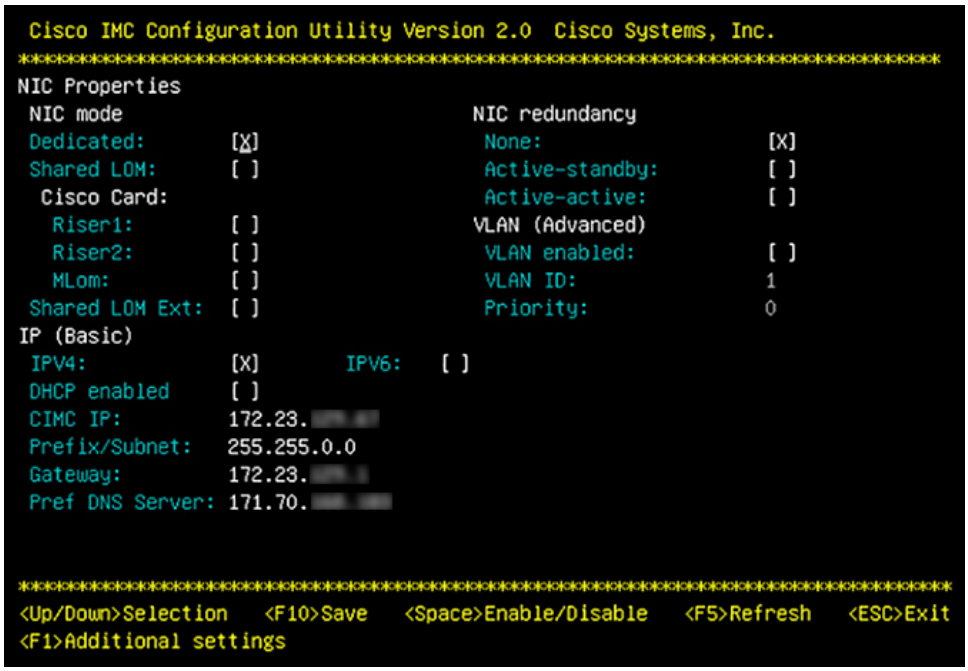
The CIMC configuration utility displays the **CIMC User Details** screen, as shown below.



Step 5 Enter the default CIMC user password (the default on a new appliance is *password*) in the **Enter current CIMC Password** field.

Step 6 Enter and confirm the new CIMC user password in the **Enter new CIMC password** and **Re-Enter new CIMC password** fields.

When you press **Enter** after entering the new password in the **Re-Enter new CIMC password** field, the Cisco IMC configuration utility displays the **NIC Properties** screen, as shown below.

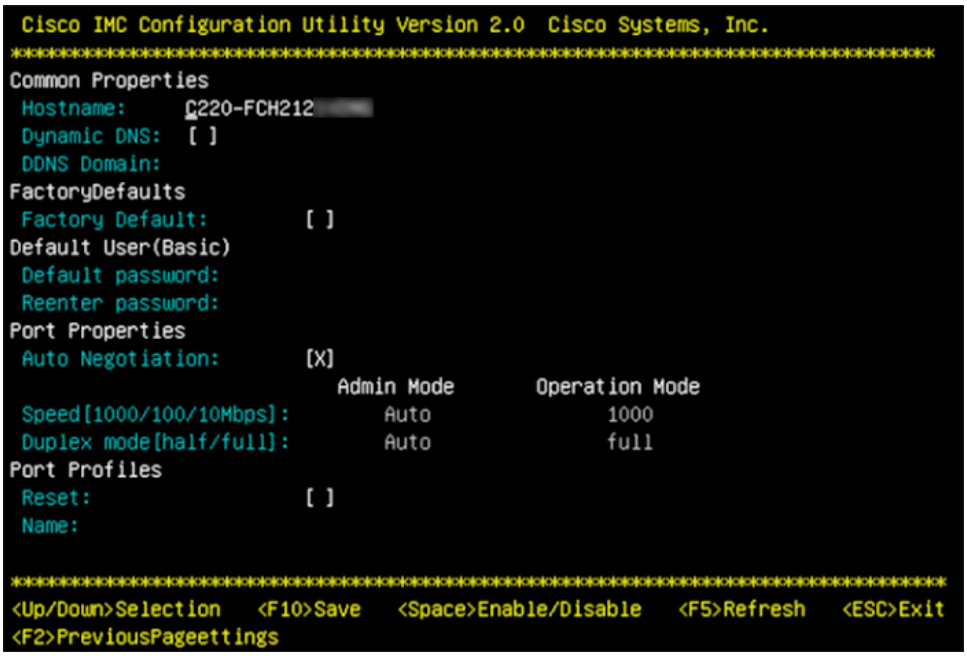


Step 7 Perform the following actions:

- **NIC mode**: Select **Dedicated**.
- **IP (Basic)**: Select **IPV4**.
- **CIMC IP**: Enter the IP address of the CIMC port.
- **Prefix/Subnet**: Enter the subnet mask for the CIMC port IP address.
- **Gateway**: Enter the IP address of your preferred default gateway.
- **Pref DNS Server**: Enter the IP address of your preferred DNS server.
- **NIC Redundancy**: Select **None**.

Step 8 Press **F1** to specify **Additional settings**.

The Cisco IMC configuration utility displays the **Common Properties** screen, as shown below.



Step 9 Perform the following actions:

- **Hostname**: Enter a hostname for CIMC on this appliance.
- **Dynamic DNS**: Uncheck the check box to disable this feature.
- **Factory Defaults**: Uncheck the check box to disable this feature.
- **Default User (Basic)**: Leave these fields blank.
- **Port Properties**: Enter new settings or accept the defaults shown in these fields.
- **Port Profiles**: Uncheck the check box to disable this feature.

Step 10 Press **F10** to save the settings.

Step 11 Press **Escape** to exit and reboot the appliance.

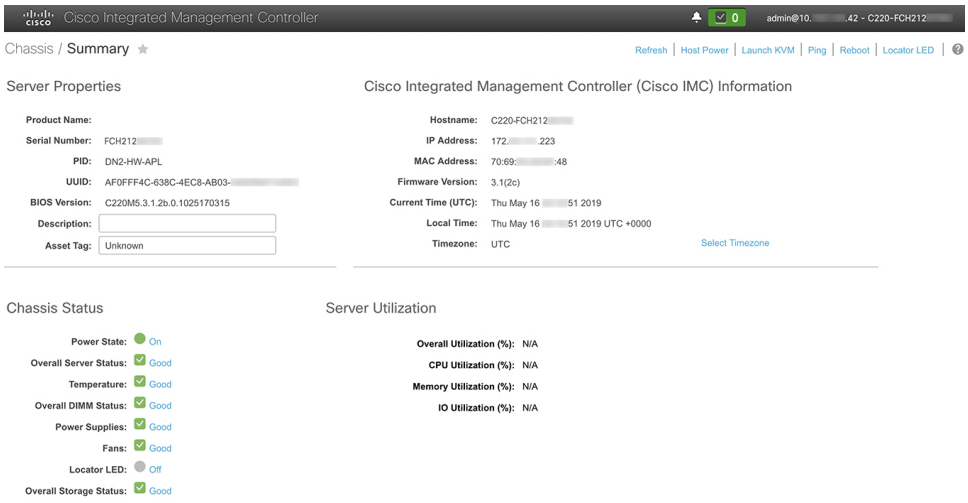
Step 12 After the settings are saved and the appliance finishes rebooting, open a compatible browser on a client machine with access to the subnet on which the appliance is installed, and enter the following URL:

`https://`*`CIMC_ip_address`*, where ***`CIMC_ip_address`*** is the Cisco IMC port IP address that you entered in Step 7.

Your browser displays a main Cisco IMC GUI login window similar to the one shown below.

Step 13 Log in using the Cisco IMC user ID and password you set in Step 5.

If the login is successful, your browser displays a **Cisco Integrated Management Controller Chassis Summary** window similar to the one shown below.



Step 14 Confirm that this version of Cisco IMC is supported by the Catalyst Center release you're going to install:

a) Note the version listed in the **Firmware Version** field.

b) See the release notes for the Catalyst Center release you are installing. The “Supported Firmware” section indicates the Cisco IMC version that your Catalyst Center release supports.

c) Do one of the following:

- If the right Cisco IMC version is installed, you can stop here.
- If you need to update your Cisco IMC version, see the *Cisco Host Upgrade Utility User Guide* for instructions.

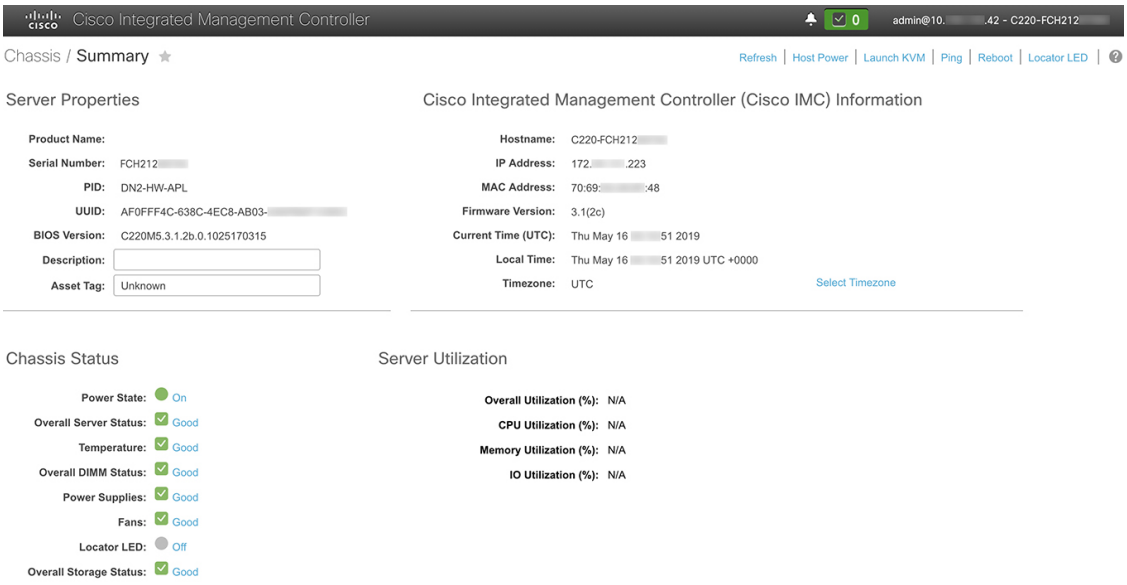
Execute Preconfiguration Tasks

After installing the appliance (as described in Appliance Installation Workflow) and setting up access to the Cisco IMC GUI (as described in Enable Browser Access to the Cisco Integrated Management Controller), use Cisco IMC to perform the following preconfiguration tasks, which help ensure correct configuration and deployment:

1. Synchronize the appliance hardware with the Network Time Protocol (NTP) servers you use to manage your network. These must be the same NTP servers whose hostnames or IPs you gathered for use when planning your implementation, as explained in Required IP Addresses and Subnets. This is a critical task that ensures that your Catalyst Center data is synchronized properly across the network.
2. Reconfigure the switches connected to the 10-Gbps appliance ports to support higher throughput settings.

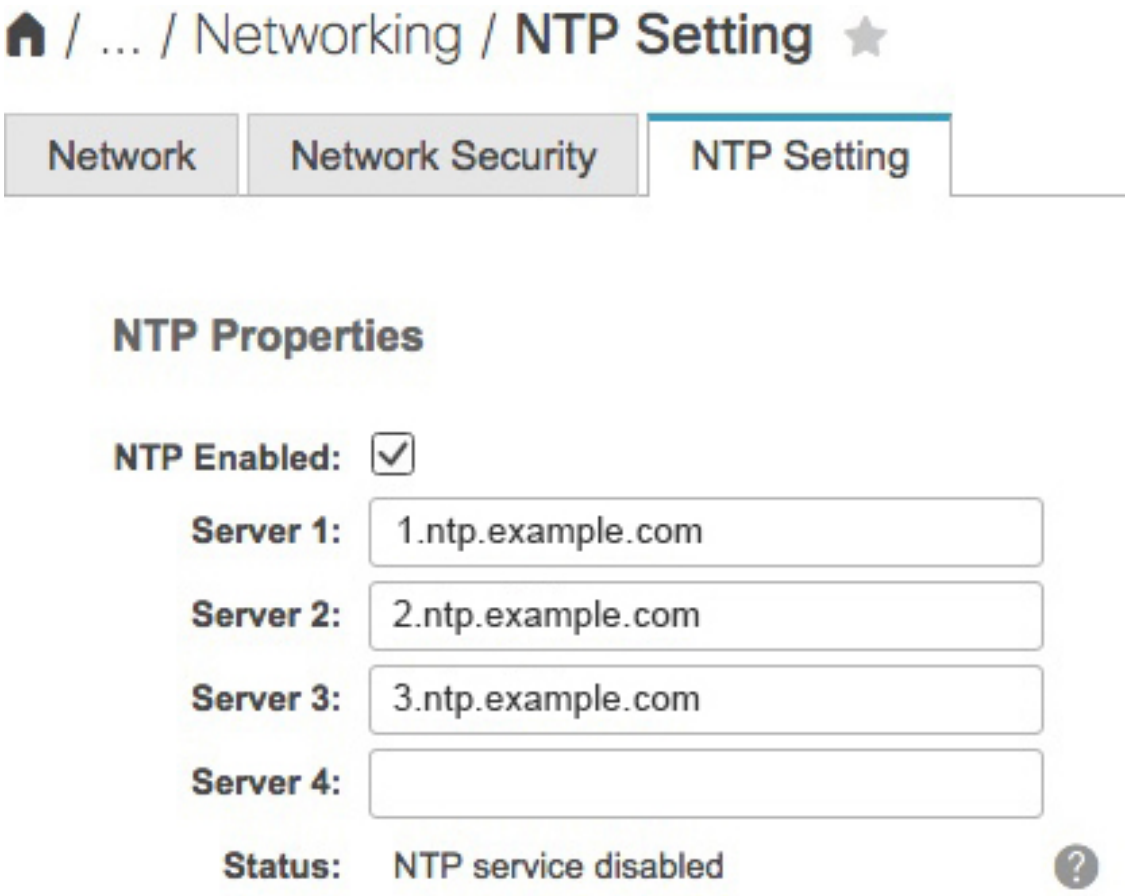
Step 1 Log in to the appliance's Cisco IMC using the Cisco IMC IP address, user ID, and password you set in Enable Browser Access to the Cisco Integrated Management Controller.

If the login is successful, your browser displays the **Cisco Integrated Management Controller Chassis Summary** window, as shown below.



Step 2 Synchronize the appliance's hardware with the Network Time Protocol (NTP) servers you use to manage your network, as follows:

a) From the top-left corner of the Cisco IMC GUI, click the **Toggle Navigation** icon ( ).
b) From the Cisco IMC menu, select **Admin** > **Networking**, and then choose the **NTP Setting** tab.
c) Make sure that the **NTP Enabled** check box is checked and enter up to four NTP server host names or addresses in the numbered **Server** fields, as shown in the example below.



d) Click **Save Changes**. Cisco IMC validates your entries and then begins to synchronize the time on the appliance's hardware with the time on the NTP servers.

Note
- Unlike the previous generation of Catalyst Center appliances, second-generation appliances do not use a virtual interface card (VIC). You do not need to configure the network interface card (NIC) that comes installed on your second-generation appliance to support high throughput in Cisco IMC, as this is already enabled by default.
- Cisco IMC does not support NTP authentication.

Step 3 Reconfigure your switches to match the high-throughput settings on the appliance, as follows:

a) Using a Secure Shell (SSH) client, log in to the switch to be configured and enter EXEC mode at the switch prompt.

b) Configure the switch port.

On a Cisco Catalyst switch, enter the following commands. For example:

```
MySwitch#Config terminal
MySwitch(config)#interface tengigabitethernet 1/1/3
MySwitch(config-if)#switchport mode access
MySwitch(config-if)#switchport access vlan 99
MySwitch(config-if)#speed auto
MySwitch(config-if)#duplex full
MySwitch(config-if)#mtu 1500
MySwitch(config-if)#no shut
```

```
MySwitch(config-if)#end
MySwitch(config)#copy running-config startup-config
```

On a Cisco Nexus switch, enter the following commands to disable Link Layer Discovery Protocol (LLDP) and priority flow control (PFC). For example:

```
N7K2# configure terminal
N7K2(config)# interface eth 3/4
N7K2(config-if)# no priority-flow-control mode auto
N7K2(config-if)# no lldp transmit
N7K2(config-if)# no lldp receive
```

Note the following:

- These commands are examples only.
- The switch port on Catalyst Center second-generation appliances must be set to access mode in order to function properly. Trunk mode is not supported, except in VLAN mode.

c) Run the show interface tengigabitethernet *portID* command and verify that the port is connected, running, and has the correct MTU, duplex, and link-type settings in the command output. For example:

```
MySwitch#show interface tengigabitethernet 1/1/3
TenGigabitEthernet1/1/3 is up, line protocol is up (connected)
  Hardware is Ten Gigabit Ethernet, address is XXXe.310.8000 (bia XXX.310.8000)
  MTU 1500 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Full-duplex, 10GB/s, link type is auto, media type is SFP-10Gbase-SR
```

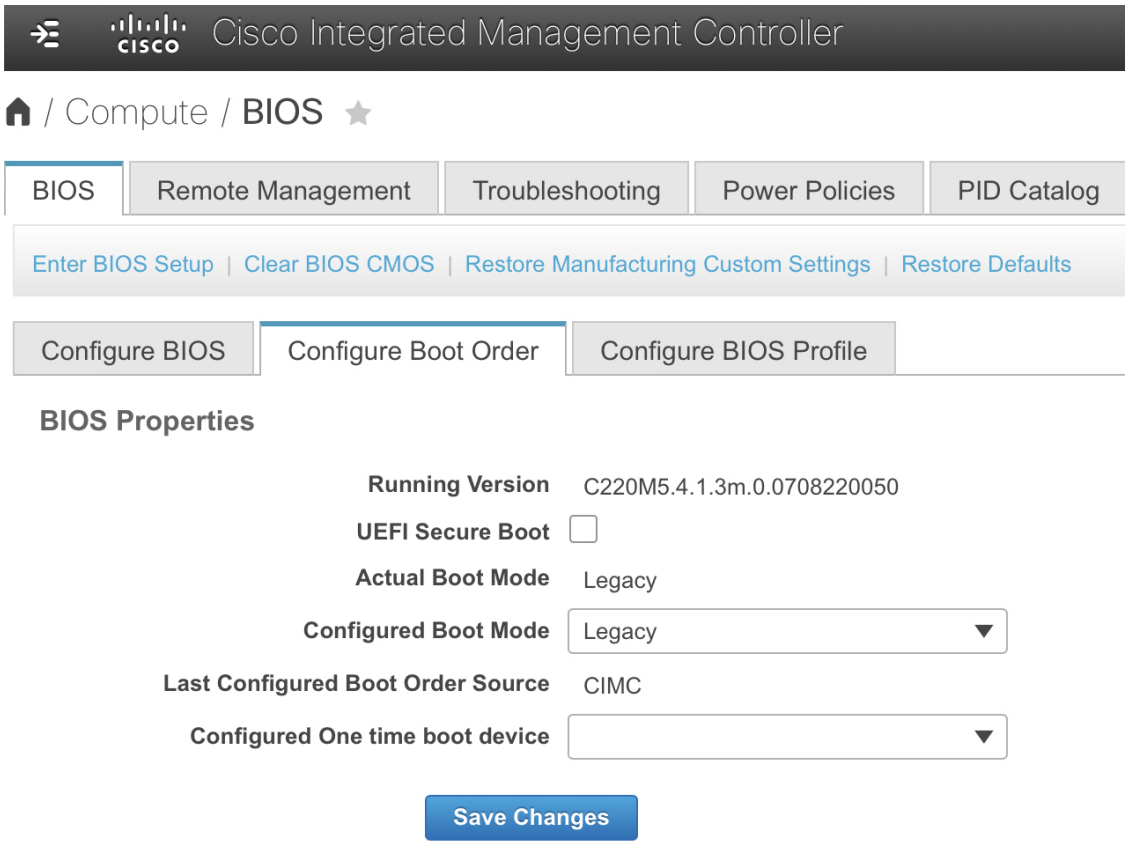
d) Run the show run interface tengigabitethernet *portID* command to configure the switch ports where the cables from the Intel X710-DA2 NIC ports are connected. For example:

```
MySwitch#show run interface tengigabitethernet 1/1/3
Building configuration...
Current configuration : 129 bytes
! interface TenGigabitEthernet1/1/3
 switchport access vlan 99
 ip device tracking maximum 10
end

MySwitch#
```

e) Run the show mac address-table interface tengigabitethernet portID command and verify the MAC address from the command output. For example:

```
MySwitch#show mac address-table interface tengigabitethernet 1/1/3
          Mac Address Table
-------------------------------------------
Vlan     Mac Address       Type      Ports
----     -----------       ----      -----
99       XXXe.3161.1000    DYNAMIC   Te1/1/3
Total Mac Addresses for this criterion: 1

MySwitch#
```

Step 4 In the **Configured Boot Mode** drop-down list, confirm that **Legacy** (the default mode) is set.



To access the **Configure Boot Order** tab, do the following:

a) From the top-left corner of the Cisco IMC GUI, click the **Toggle Navigation** icon ( ).
b) From the Cisco IMC menu, choose **Compute** > **BIOS** > **Configure Boot Order**.

Do *not* change the boot mode to **UEFI**. When this mode is set, your Catalyst Center appliance's interfaces may not be pingable.

What to do next

When this task is complete, do one of the following:

- If you need to reinstall Catalyst Center software before you configure your appliance, see Reimage the Appliance.
- If you are ready to configure your appliance, proceed to the "Appliance Configuration Overview" topic specific to the configuration wizard you want to use:
  - Maglev configuration wizard
  - Browser-based configuration wizard (44- and 56-core appliance)
  - Browser-based configuration wizard (112-core appliance)

NIC Bonding Overview

On any given Catalyst Center appliance, you can configure the Enterprise, Intracluster, Management, and Internet interface. If you enable network interface controller (NIC) bonding on an appliance, each of these interfaces has two instances: The primary instance (located on either your appliance's motherboard or Intel X710-DA2 NIC) is connected to one switch, and the secondary instance (located on your appliance's Intel X710-DA4 NIC) is connected to a different switch. NIC bonding consolidates the two instances of each interface into a single logical interface, appearing as a single device with one MAC address. Depending on the bonding mode that you choose when configuring the interfaces on your appliance, this feature provides the following benefits when enabled:

Note Both single-node and three-node Catalyst Center clusters support NIC bonding.

- **Active-Backup mode**: By default, this is the bonding mode that's configured for your appliance's interfaces when this feature is enabled on your appliance. It enables high availability (HA) for the two interfaces that Catalyst Center has grouped together. When the interface that's currently active goes down, the other interface takes its place and becomes active.

Note When this mode is enabled on an interface that supports both 1-Gbps and 10-Gbps throughput, Catalyst Center automatically sets the throughput to 1-Gbps.

- **LACP mode**: When selected, the two interfaces that Catalyst Center has grouped together share the same speed and duplex settings. This provides load balancing and higher bandwidth for the interfaces. In order to enable this mode, the following items must first be in place:
  - The Linux utility ethtool must support the base drivers that are used to retrieve the speed and duplex mode of each interface.
  - The switch that is connected to the Enterprise port must support dynamic interface aggregation.
  - After you enable LACP on the switch, ensure that you have set the LACP mode to **active** (which places the switch port connected to your appliance into an active negotiating state, in which the port initiates negotiations with remote ports by sending LACP packets) and the LACP rate to **fast** (which changes the rate at which the LACP control packets are sent to an LACP-supported interface from the default every 30 seconds to once every second).

Note You can only enable LACP mode on your appliance's Enterprise and Intracluster interfaces. The Management and Internet Access interfaces only support Active-Backup mode.

Before you use NIC bonding in your production environment, you should do the following:

- Confirm that your appliance supports this feature. See Appliance Support, on page 12.

- If the Intel X710-DA4 NIC that shipped with your appliance is currently disabled, you need to enable it in order to make use of NIC bonding (see Enable NIC on an Upgraded Appliance, on page 12).
- Determine where the secondary ports are located on your appliance's rear panel. See Front and Rear Panels.
- View the recommended appliance–switch cabling. See Interface Cable Connections.

Appliance Support

All second-generation Catalyst Center appliances support NIC bonding:

- 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
- 112-core appliance: Cisco part number DN2-HW-APL-XL
- 112-core promotional appliance: Cisco part number DN2-HW-APL-XL-U

Enable NIC on an Upgraded Appliance

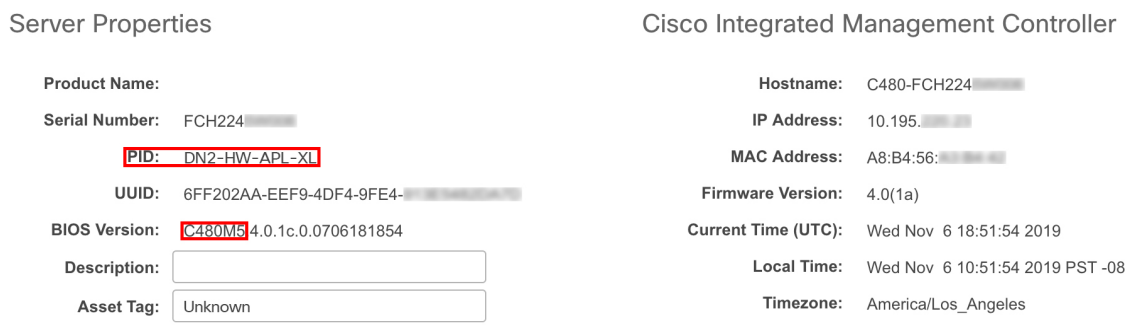
If you plan to upgrade to the latest 2.3.7.x release of Catalyst Center from a previous version and want to enable the Intel X710-DA4 NIC, complete the following procedure.

Step 1 Confirm that your appliance has the Intel X710-DA4 NIC installed.

a) Log in to the appliance's Cisco IMC.

b) In the **Summary** window's **Server Properties** area, confirm that the following values are set:

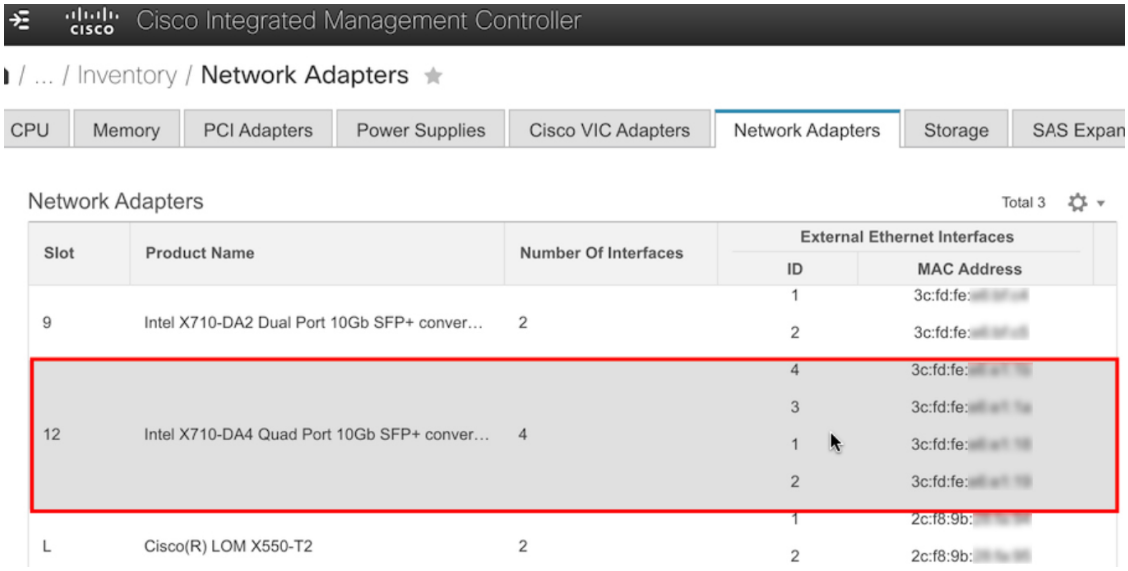
- PID: **DN2-HW-APL** for a 44-core appliance, **DN2-HW-APL-L** for a 56-core appliance, or **DN2-HW-APL-XL** for a 112-core appliance (see the following example).
- BIOS Version: This value should start with either **C220M5** for a 44 and 56-core appliance or **C480M5** for a 112-core appliance (see the following example).



c) Choose > **Chassis** > **Inventory** > **Network Adapters**.

d) In the **Network Adapters** table, confirm that the Intel X710-DA4 Quad Port network adapter is listed for one of the following slots:

- For a 44 or 56-core appliance, **PCIe Slot 2**.
- For a 112-core appliance, **PCIe Slot 12** (see the following example).



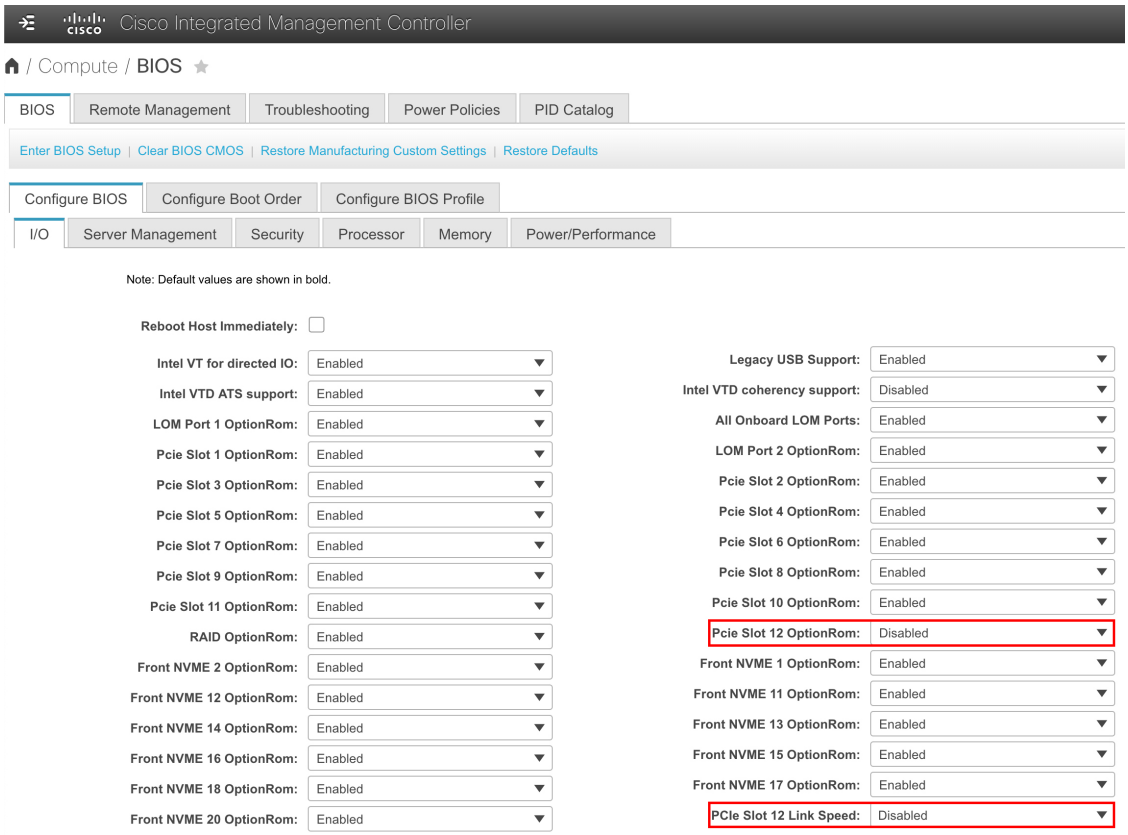
Step 2 Confirm that the your appliance's PCIe card is enabled:

a) Choose > **Compute**.

The **BIOS** > **Configure BIOS** > **I/O** tab opens.

b) If necessary, set the following parameters and then click **Save**:

- For a 44 or 56-core appliance, set the **PCIe Slot 2 OptionROM** parameter to **Enabled** and the **PCIe Slot 2 Link Speed** parameter to **Auto**.
- For a 112-core appliance, set the **PCIe Slot 12 OptionROM** parameter to **Enabled** and the **PCIe Slot 12 Link Speed** parameter to **Auto** (see the following example).



c) Do one of the following:

- If you needed to set these two parameters for your appliance, reboot your appliance and then proceed with its configuration. You do not need to complete the rest of this procedure.
- If you have a 112-core appliance and only see one of these parameters displayed in the **I/O** tab, proceed to Step 3 and complete the rest of this procedure.

Step 3 Boot into your appliance's BIOS:

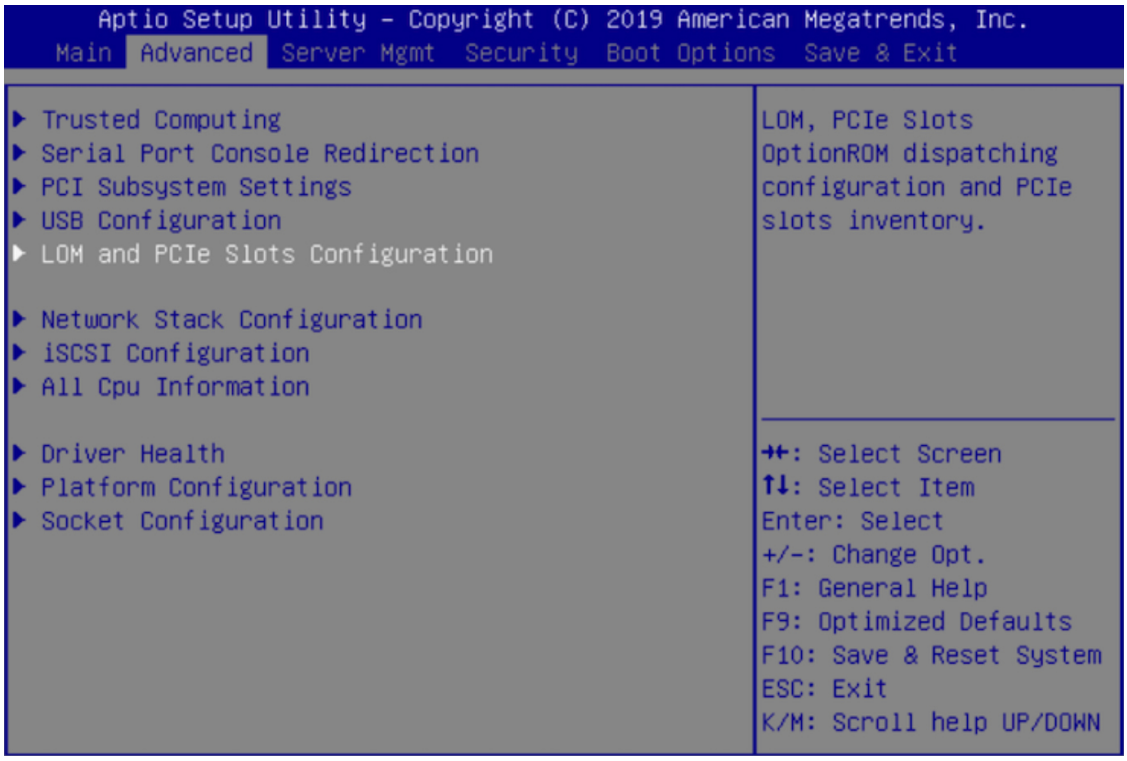
a) From Cisco IMC, start a KVM session.

b) Power cycle the appliance by clicking the **Host Power** link and then choosing **Power Cycle**.

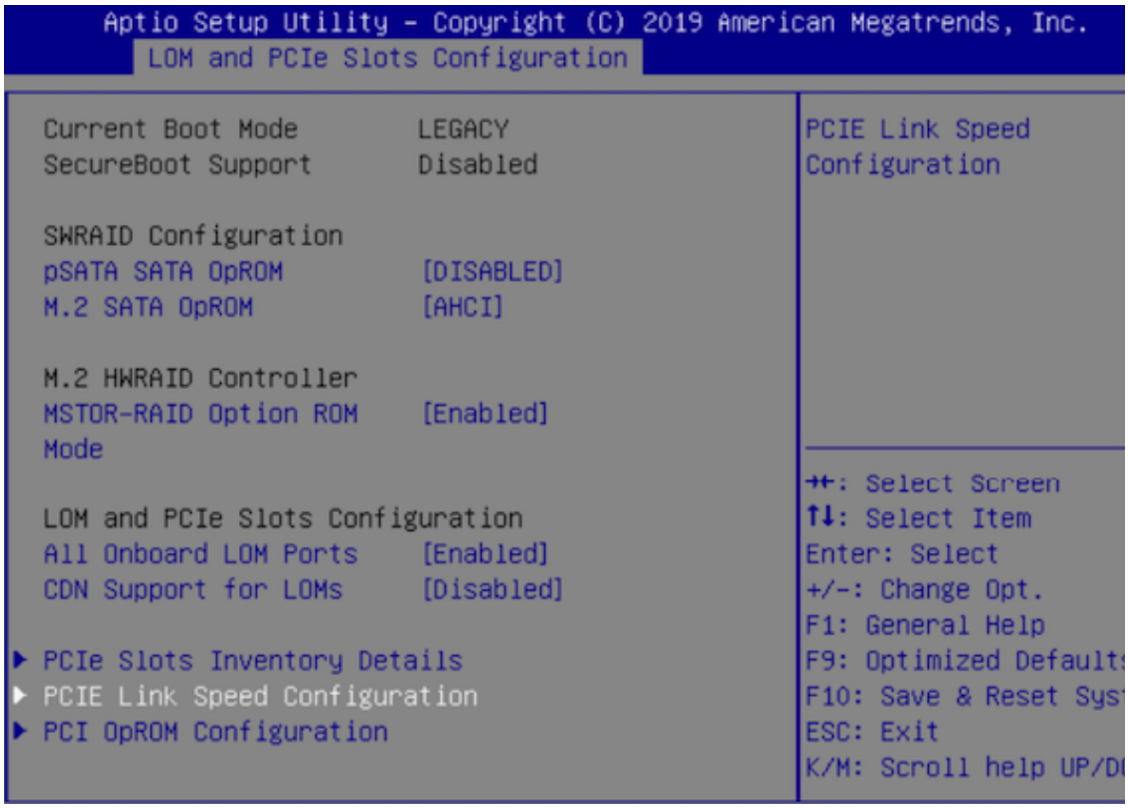
c) During startup, press the **F2** key as soon as you see the following screen to boot into your appliance's BIOS and open the Aptio Setup Utility.

Step 4 Enable the PCIe card:

a) From the Aptio Setup Utility's **Main** tab, open the **Advanced** tab and then choose **LOM and PCIe Slots Configuration**.



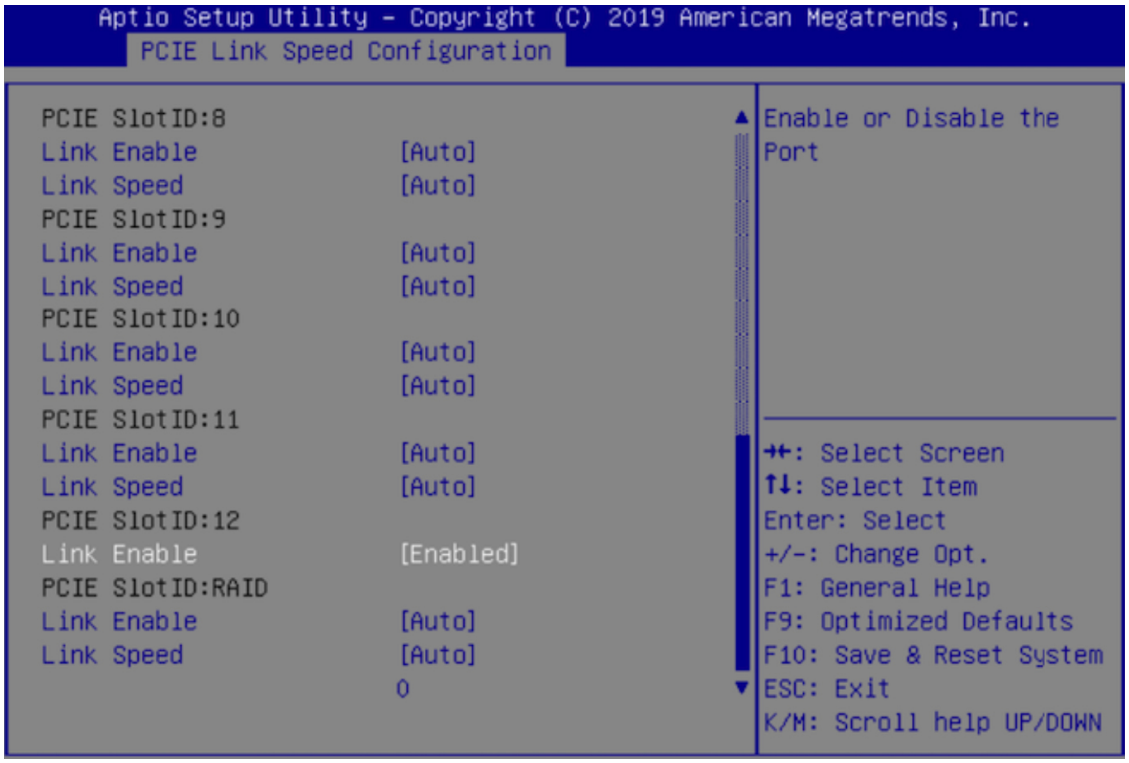
b) In the **LOM and PCIe Slots Configuration** tab, choose **PCIE Link Speed Configuration**.



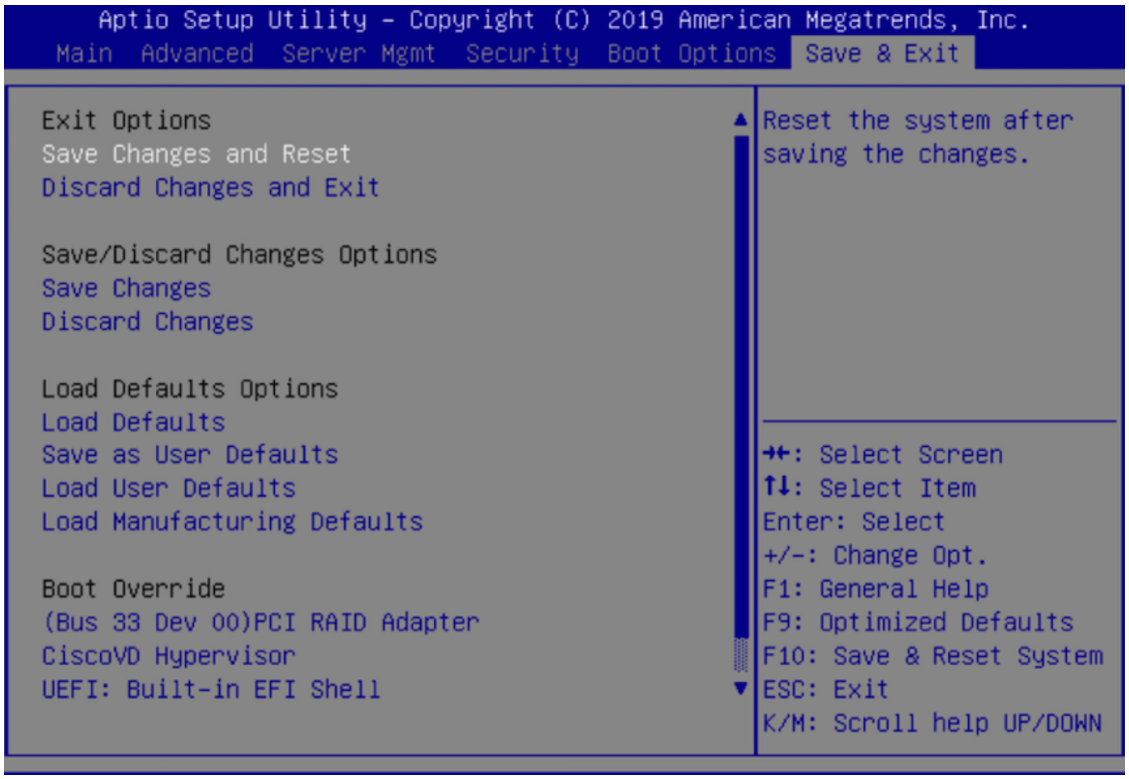
c) In the **PCIE Link Speed Configuration** tab, scroll down to the **Link Enable** option for either PCIE SlotID: 2 (44 or 56-core appliance) or PCIE SlotID: 12 (112-core appliance), then press **Enter**.

d) Choose **Enable**, then press **ENTER**.

Your screen should look like the following example:



e) Press the **ESC** key twice to return to the main BIOS menu, then open the **Save & Exit** tab.
f) Choose the **Save Changes and Reset** option, then press **Enter**.



Your appliance reboots and opens the configuration wizard. Proceed with the configuration of your appliance.

Important After you have enabled your appliance's NIC, if you reset your appliance to the default settings in Cisco IMC (> **Admin** > **Utilities** > **Reset to factory Default**), you will need to complete this procedure again.

Step 5 Upgrade to the latest 2.3.7.x release of Catalyst Center.

In the *Catalyst Center Upgrade Guide*, complete the upgrade procedure specific to your current version.

During the upgrade, Catalyst Center will prepare your appliance to use the Intel X710-DA4 NIC. After the upgrade completes and your appliance reboots, Cisco IMC recognizes this NIC and the four interfaces that reside on it. Counting the four interfaces located on the Intel X710-DA2 NIC and appliance motherboard, that makes a total of eight interfaces on your appliance.

Step 6 Complete the configuration wizard to finalize the use of the Intel X710-DA4 NIC on your appliance, as described in Reconfigure the Appliance Using the Configuration Wizard.

Reimage the Appliance

Situations that require you to reimage your Catalyst Center appliance, such as recovering from a backup or changing your cluster link configuration, might arise. To do so, complete the following procedure.

Step 1 Download the Catalyst Center ISO image and verify that it is a genuine Cisco image.

See Verify the Catalyst Center Image.

Step 2 Create a bootable USB drive that contains the Catalyst Center ISO image.

See Create a Bootable USB Flash Drive.

Step 3 Reinitialize the virtual drives that are managed by your appliance's RAID controller: Reinitialize the Virtual Drives on a Catalyst Center Appliance, on page 22.

Step 4 Reinstall Catalyst Center onto your appliance.

See Install the Catalyst Center ISO Image.

Verify the Catalyst Center Image

Before deploying Catalyst Center, we strongly recommend that you verify that the image you downloaded is a genuine Cisco image.

Before you begin

Obtain the location of the Catalyst Center image (through email or by contacting the Cisco support team).

Step 1 Download the Catalyst Center image (.iso, .bin, .zip) from the location specified by Cisco.

Step 2 Download the Cisco public key (cisco_image_verification_key.pub) for signature verification from the location specified by Cisco.

Step 3 Download the secure hash algorithm (SHA512) checksum file for the image from the location specified by Cisco.

Step 4 Obtain the image's signature file (.sig) from Cisco support through email or by download from the secure Cisco website (if available).

Step 5 (Optional) Perform an SHA verification to determine whether the image is corrupted due to a partial download.

Depending on your operating system, enter one of the following commands:

- On a Linux system: **sha512sum** *image-filename*
- On a Mac system: **shasum -a 512** *image-filename*

Microsoft Windows does not include a built-in checksum utility, but you can use the certutil tool:

```
certutil -hashfile <filename> sha256 | md5
```

For example:

```
certutil -hashfile D:\Customers\FINALIZE.BIN sha256
```

On Windows, you can also use the Windows PowerShell to generate the digest. For example:

```
PS C:\Users\Administrator> Get-FileHash -Path D:\Customers\FINALIZE.BIN
Algorithm Hash Path
SHA256 B84B6FFD898A370A605476AC7EC94429B445312A5EEDB96166370E99F2838CB5 D:\Customers\FINALIZE.BIN
```

Compare the command output to the SHA512 checksum file that you downloaded. If the command output does not match, download the image again and run the appropriate command a second time. If the output still does not match, contact Cisco support.

Step 6 Verify that the image is genuine and from Cisco by verifying its signature:

openssl dgst -sha512 -verify cisco_image_verification_key.pub -signature *signature-filename image-filename*

Note This command works in both Mac and Linux environments. For Windows, you must download and install OpenSSL (available here) if you have not already done so.

If the image is genuine, running this command displays a `Verified OK` message. If this message fails to appear, do not install the image and contact Cisco support.

Step 7 After confirming that you have downloaded a Cisco image, create a bootable USB drive that contains the Catalyst Center image. See Create a Bootable USB Flash Drive.

Create a Bootable USB Flash Drive

Complete one of the following procedures to create a bootable USB flash drive from which you can install the Catalyst Center ISO image.

Before you begin:

- Download and verify your copy of the Catalyst Center ISO image. See Verify the Catalyst Center Image.
- Confirm that the USB flash drive you are using:
  - Is USB 3.0 or later.
  - Has a capacity of at least 64 GB.

- Is unencrypted.

Note Do not use the Rufus utility to burn the Catalyst Center ISO image. Use only Etcher, the Linux CLI, or the Mac CLI.

Using Etcher

Step 1 Download and install Etcher (Version 1.3.1 or later), an open-source freeware utility that allows you to create a bootable USB drive on your laptop or desktop.

Linux, macOS, and Windows versions of Etcher are currently available. You can download a copy at https://www.balena.io/etcher/.

Note Use only the Windows version of Etcher on machines running Windows 10, as there are known compatibility issues with older versions of Windows.

Step 2 From the machine on which you installed Etcher, connect a USB drive and then start Etcher.

Step 3 In the top-right corner of the window, click ⚙ and verify that the following Etcher settings are set:

- Auto-unmount on success
- Validate write on success

Step 4 Click **Back** to return to the main Etcher window.

Step 5 Click **Select Image**.

Step 6 Navigate to the Catalyst Center ISO image you downloaded previously, select it, and then click **Open**.

The name of the USB drive you connected should be listed under the drive icon (). If it is not:

a. Click **Select drive**.

b. Click the radio button for the correct USB drive, and then click **Continue**.

Step 7 Click **Flash!** to copy the ISO image to the USB drive.

Etcher configures the USB drive as a bootable drive with the Catalyst Center ISO image installed.

Using the Linux CLI

Step 1 Verify that your USB flash drive is recognized by your machine:

a) Insert a flash drive into your machine's USB port.

b) Open a Linux shell and run the following command: **lsblk**

The command lists the disk partitions that are currently configured on your machine, as illustrated in the following example:

```
$ lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
sda 8:0 0 446.1G 0 disk
├─sda1 8:1 0 1M 0 part
├─sda2 8:2 0 28.6G 0 part /
├─sda3 8:3 0 28.6G 0 part /install2
├─sda4 8:4 0 9.5G 0 part /var
├─sda5 8:5 0 30.5G 0 part [SWAP]
└─sda6 8:6 0 348.8G 0 part /data
sdb 8:16 0 1.8T 0 disk
├─sdb1 8:17 0 426.1G 0 part /data/maglev/srv/fusion
└─sdb2 8:18 0 1.3T 0 part /data/maglev/srv/maglev-system
sdc 8:32 0 3.5T 0 disk
└─sdc1 8:33 0 3.5T 0 part /data/maglev/srv/ndp
sdd 8:48 1 28.7G 0 disk
└─sdd1 8:49 1 12G 0 part
```

c) Confirm that an `sdd` partition (which indicates the presence of a USB flash drive) is listed.

Step 2 Burn the Catalyst Center ISO image you downloaded previously onto your USB flash drive: **time sudo dd if=/data/tmp/***ISO-image-filename* **of=/dev/***flash-drive-partition* **bs=4M && sync status=progress**

For example, to create a bootable USB drive using an ISO image named `CC-SW-1.330.iso`, you would run the following command: **time sudo dd if=/data/tmp/CC-SW-1.330.iso of=/dev/sdd bs=4M && sync status=progress**

Using the Mac CLI

Step 1 Determine the disk partition associated with your USB flash drive:

a) Open a Terminal window and run the following command: **diskutil list**

The command lists the disk partitions that are currently configured on your machine.

b) Insert a flash drive into your machine's USB port and run the **diskutil list** command a second time.

The partition that was not listed the first time you ran this command corresponds to your flash drive. For example, let's assume that your flash drive's partition is `/dev/disk2`.

Step 2 Unmount the flash drive's partition: **diskutil unmountDisk** *flash-drive-partition*

Continuing our example, you would enter **diskutil unmountDisk /dev/disk2**

Step 3 Using the Catalyst Center ISO image you downloaded previously, create a disk image: **hdiutil convert -format UDRW -o** *Catalyst-Center-version ISO-image-filename*

Continuing our example, let's assume that you are working with a Catalyst Center ISO image named `CC-SW-1.330.iso`. You would run the following command, which creates a macOS disk image named `CC-1.330.dmg`: **hdiutil convert -format UDRW -o CC-1.330 CC-SW-1.330.iso**

Important Ensure that the ISO image does not reside on a Box partition.

Step 4 Create a bootable USB drive: **sudo dd if=***macOS-disk-image-filename* **of=***flash-drive-partition* **bs=1m status=progress**

Continuing our example, you would run the following command: **sudo dd if=CC-1.330.dmg of=/dev/disk2 bs=1m status=progress**

The ISO image is about 18 GB in size, so this can take around an hour to complete.

Reinitialize the Virtual Drives on a Catalyst Center Appliance

Complete the following procedure to reinitialize the virtual drives on your Catalyst Center appliance.

Step 1 Log in to the appliance's Cisco IMC using the Cisco IMC IP address, user ID, and password you set in Enable Browser Access to the Cisco Integrated Management Controller.

Step 2 From the top-left corner of the Cisco IMC GUI, click the **Toggle Navigation** icon ( ).

Step 3 From the Cisco IMC menu, choose **Storage** > **Cisco 12G Modular Raid Controller**.

Step 4 Click the **Virtual Drive Info** tab.

Step 5 Check the check box for the first virtual drive that's listed (drive number 0), then click **Initialize**.

Step 6 From the **Initialize Type** drop-down list, choose **Full Initialize**.

Step 7 Click **Initialize VD**.

Step 8 Repeat Step 5 through Step 7 for the appliance's other virtual drives, but choose **Fast Initialize**. (Only the first virtual drive requires full initialization. The second and third virtual drives don't require full initialization.)

Step 9 Check the first virtual drive's log to verify that full initialization has completed.

Install the Catalyst Center ISO Image

Complete the following procedure to install the Catalyst Center ISO image onto your appliance.

Before you begin

Create the bootable USB drive from which you will install the Catalyst Center ISO image. See Create a Bootable USB Flash Drive.

Step 1 Connect the bootable USB drive with the Catalyst Center ISO image to the appliance.

Step 2 Log in to Cisco IMC and start a KVM session.

Step 3 Power on or power cycle the appliance:

- Choose **Power** > **Power On System** if the appliance is not currently running.
- Choose **Power** > **Power Cycle System (cold boot)** if the appliance is already running.

Step 4 In the resulting pop-up window, click **Yes** to acknowledge that you are about to execute a server control action.

Step 5 When the Cisco logo appears, either press the **F6** key or choose **Macros** > **User Defined Macros** > **F6** from the KVM menu.

The boot device selection menu appears.

Step 6 Select your USB drive and then press **Enter**.

Step 7 In the **GNU GRUB** bootloader window, choose **Catalyst Center Installer** and then press **Enter**.

Note The bootloader automatically boots the Catalyst Center Installer instead if you do not make a selection within 30 seconds.

The installer reboots and opens the wizard's welcome screen. Depending on whether you are going to configure a primary or secondary cluster node, proceed to Step 4 in either Configure the Primary Node Using the Maglev Wizard or Configure a Secondary Node Using the Maglev Wizard.

Catalyst Center Appliance Configuration

When installation of the Catalyst Center ISO image completes, the installer reboots and opens the Maglev Configuration wizard's welcome screen. To complete the reimaging of your appliance, complete the steps described in Configure the Appliance Using the Maglev Wizard.