



Cisco Prime Infrastructure 3.7 Appliance Hardware Installation Guide

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CONTENTS

Introduction ?

CHAPTER 1 Installation and Initial Configuration 1

Overview 1

System Configuration 1

Set the Appliance 2

Improve Performance on Physical Appliances 4

Upgrade and Migrate from Previous Releases of Cisco Prime Infrastructure 4

CHAPTER 2 Install the ISO

Install the ISO on the Appliance 5

Install the ISO on the Appliance 5

Manage the Appliance Using CIMC 7

CHAPTER 3 Additional Functions 9

Connect to the Console 9

Connect to the Console Using Serial Over LAN 9

Connect to the vKVM Console 11

Set the Baud Rate 12

DVD Mount Options 12

Mount vKVM DVD 12

Mount a CIMC vMedia DVD 13

Password Recovery 13

How to Recover Administrator Passwords on Gen 3 Appliance 13

Related Documentation 15

Contents



Installation and Initial Configuration

- Overview, on page 1
- System Configuration, on page 1
- Set the Appliance, on page 2

Overview

This guide provides the information on how to install the Cisco Prime Infrastructure 3.7 Physical Appliances Gen2, Gen 3, and Cisco Digital Network Architecture (DNA) Center.

System Configuration

Table 1: System Configuration

| Specification | Gen-2 Appliance | Gen-3 Appliance | DNAC Appliance | DNAC 2 Appliance |
|---------------|---|--|--|---|
| CPU | 1 X 10 core processor (20 threads) | 20C/40T | 44 C/ 88 T | 44 C/ 88 T |
| RAM | 64 GB | 64GB | 256GB | 256 GB |
| HDD | 4 X 900 GB in RAID 10 configuration and 2.5inch drive | 4 x 1.2 TB | 3.6 TB | 2 x 480 GB in RAID 1 2 x 1.9 TB in RAID 1 6 x 1.9 TB in RAID 10 |
| CIMC | Cisco UCS C-Series Integrated Management Controller | Cisco UCS C-Series Integrated Management Controller | Cisco UCS C-Series Integrated Management Controller | Cisco UCS C-Series Integrated Management Controller |
| NIC | Integrated dual-port Gigabit Ethernet | Integrated dual-port Gigabit Ethernet | Integrated dual-port Gigabit Ethernet | Integrated dual-port Gigabit Ethernet |

For scaling information on this server see the *Scaling* Prime Infrastructure section in Cisco Prime Infrastructure Quick Start Guide.



Note

When there is a flap time in hard appliance, ensure that the hardware clock (BIOS / CIMC) and the Network Time Protocol time are in sync.

Set the Appliance

This section describes how to set the Prime Infrastructure appliance.

- **Step 1** Attach a keyboard and monitor to the USB ports on the rear panel of the appliance or by using a KVM cable and connector to access the appliance console.
- **Step 2** Power on the appliance.
- Step 3 To set up CIMC press F8 to enter the CIMC configuration utility and continue with Step 3 to Step 11. Continue with Step 12 in case you do not wish to configure CIMC.

You might need to press the function keys (F8, F6 and F2) more than once until the system responds. If you do not press F8 quickly enough you may enter the EFI shell. Press Ctrl, Alt, Del to reboot the system and press F8 again.

Note The Cisco Integrated Management Controller (CIMC) is the management service that you use to remotely access, configure, administer, and monitor the Prime Infrastructure server.

- **Step 4** In the Configuration Utility window, change the following fields as specified:
 - NIC mode—Select **Dedicated**.
 - IP (Basic)—Select IPV4.
 - DHCP—Disable DHCP if enabled.
 - CIMC IP—Enter the IP address of the CIMC.
 - Prefix/Subnet—Enter the subnet of the CIMC.
 - Gateway—Enter the Gateway address.
 - Pref DNS Server—Enter the preferred DNS server address.
 - NIC Redundancy—Null

Step 5 Press **F1** to specify additional settings.

```
Cisco IMC Configuration Utility Version 2.0 Cisco Systems,
Common Properties
            C220-FCH1843V0L3
DDNS Domain:
FactoryDefaults
Factory Default:
                     [\ ]
Default User(Basic)
Default password:
Reenter password:
Port Properties
                     []
Duplex mode[half/full]: full
Port Profiles
                     []
<Up/Down>Selection
                 <F10>Save
                            <Space>Enable/Disable
                                                <F5>Refresh
                                                            <ESC>Exit
<F2>PreviousPage
```

- **Step 6** Make the following changes on the Additional Settings window:
 - Enter a hostname for CIMC.
 - Turn off Dynamic DNS.
 - Enter the admin password. If you leave the password field blank, the default password is **password**.
- **Step 7** Press **F10** to save the settings.
- **Step 8** Press escape to exit and reboot the server.

For remote management move to current step 7.

Step 9 After the settings are saved, open a browser and enter the following URL:

https://CIMC_ip_address where CIMC_IP_address is the IP address that you entered in Step 3 above.

- **Step 10** Log in to CIMC web interface using the following credentials:
 - Username—admin
 - Password—the password configured in Step 6

You will be prompted to reset the password if you did not change the default password in Step 6.

Improve Performance on Physical Appliances

For better performance on the Prime Infrastructure Physical Appliance Gen 2, Gen 3, and DNAC Appliance, make sure you configure the virtual drive Write Policy to Write Back Good BBU. To configure the virtual drive Write Policy, follow these steps:

- **Step 1** Launch the CIMC web interface.
- Step 2 Click the Storage tab, click on the SAS Modular Controller name, click the Virtual Drive Info tab, select the Virtual Drive and then click Edit Virtual Drive.
- **Step 3** Click **OK** on the dialog box that appears.
- Step 4 In the Write Policy field, select Write Back Good BBU fro the drop-down, then click Save Changes.

Upgrade and Migrate from Previous Releases of Cisco Prime Infrastructure

See the sections *Upgrading from Previous Releases of Cisco Prime Infrastructure* and *Migrating from Previous Releases of Cisco Prime Infrastructure* in Cisco Prime Infrastructure Quick Start Guide.



Install the ISO on the Appliance

• Install the ISO on the Appliance, on page 5

Install the ISO on the Appliance

The appliance is shipped with the software version pre-installed. You do not have to perform these steps during the initial installation of the appliance. However in case you need to re-image the appliance, you can install the software from the ISO file.

To reduce the installation time, choose **Admin > Network > Network Settings** in the CIMC interface and check the **Auto Negotiation** check box.

Before You Begin

Download the ISO file PI-APL-3.7.0.0.159-1-K9.iso from cisco.com and verify file integrity using the checksum values listed for it on cisco.com.

You can verify the Cisco Signature for the ISO image with the following steps:

- 1. Download PI-APL-3.7.0.0.159-1-K9.iso, CiscoPI3.7.pem and PI-APL-3.7.0.0.159-1-K9.iso.signature.
- 2. Copy these file to any Linux server and enter the following command.

openss1 dgst -sha512 -verify

CiscoPI3.7.pem -signature PI-APL-3.7.0.0.159-1-K9.iso.signature PI-APL-3.7.0.0.159-1-K9.iso

The result will be shown as "Verified".



Note

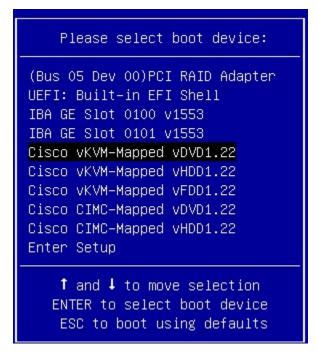
Ensure no storage devices are connected to the USB port of the appliance before upgrading or installing the ISO image. The installation fails if a USB storage device is connected to the USB port of the appliance as the installer selects the USB storage device.



Note

When you connect Gen 2 and Gen 3 appliances through serial console connection after reboot, there are chances that you might encounter garbled screen display. To overcome this issue, you can connect through CIMC or VGA console.

- **Step 1** Connect to the console using one of the options mentioned in Connect to the Console.
- **Step 2** Mount ISO using any one of the mounting options. See DVD Mount Options for more details.
- Step 3 Reboot the appliance by pressing the power switch or select **Power > Reset System(Warm Boot)** if you are using vKVM to restart.
- **Step 4** After the appliance reboots, press **F6** to enter the boot option.
- **Step 5** Select one of the DVD mount option with the Cisco Prime Infrastructure 3.7 software image. See DVD Mount Options for more information.



- **Step 6** From the available boot options, enter **1** or **2** carefully, as all future management messages will be displayed in the selected display.
 - 1 —Prime Infrastructure System Installation (Keyboard/Monitor) if you are connected through the VGA port/vKVM (KVM console).

All console data/information will appear on the VGA port /vKVM (KVM console).

2 —Prime Infrastructure System Installation (Serial connection) if you are connected through the serial port or Serial Over LAN. See Connect to the Console Using Serial Over LAN for more information.

All console data/information will appear on the serial port or Serial Over LAN.

```
Welcome to Cisco Prime Infrastructure

To boot from hard disk, press (Enter).

Available boot options:

[1] Prime Infrastructure System Installation (Keyboard/Monitor)
[2] Prime Infrastructure System Installation (Serial Console)
[3] Recover administrator password. (Keyboard/Monitor)
[4] Recover administrator password. (Serial Console)

(Enter) Boot existing OS from Hard Disk.

Enter boot option and press (return).

boot:
```

The time taken to deploy the image will depend on the network speed.

Step 7 Enter **setup** at the login prompt when prompted to initiate the installation.

What to do next

See Set Up Prime Infrastructure on a Virtual Machine or Physical Appliance section (Step 3 onwards) in Cisco Prime Infrastructure Quick Start Guide for more information about installing the software.



Note

Cisco Prime Infrastructure is installed only using the 1 Gbps ports. To disable the 10 Gbps ports on Cisco DNA Center appliance and use the 1 Gbps ports to install Prime Infrastructure, perform the following steps.

- 1. Login to CIMC Console.
- 2. Navigate to Compute > BIOS > Configure BIOS > Advanced > LOM and PCle Slots Configuration.
- Choose the Disabled option from the PCIeSlot:MLOM OptionROM and PCIeSlot:MLOM LinkSpeed drop-down lists.
- 4. Click the Save button.
- **5.** Navigate to **Host Power**, Power Cycle the machine and then Power ON.

Manage the Appliance Using CIMC

You can connect to the vKVM console by launching the CIMC and log in using your username and password configured in Set the Appliance. Using the vKVM console you can do the following:

• Remotely power on or off the server.

- Monitor the server and disk status.
- Change the BIOS settings. Following table displays the hardware types and their respective latest firmware and BIOS versions that support the Cisco Prime Infrastructure 3.7 Physical Appliance ISO image:

| Hardware TypeYe | Firmware Version | BIOS Version |
|-----------------|------------------|----------------------------|
| Gen 2 | 4.0(1c) | C220M4.3.0.1b.0.1201161639 |
| Gen 3 | 3.1(3d) | C220M5.3.1.3c.0.0307181404 |
| DNAC | 3.0(3f) | C220M4.3.0.3c.0.0831170216 |

- Launch a virtual console on the appliance.
- Mount iso files as virtual DVD drives.
- Other server management functions. Note that if there are additional slots configured with JBOD, the upgrade will fail, hence ensure that you set the status of additional slots to be "Unconfigured Good".
- See Cisco Integrated Management Controller documentation for more information.



Additional Functions

- Connect to the Console, on page 9
- DVD Mount Options, on page 12
- Password Recovery, on page 13
- How to Recover Administrator Passwords on Gen 3 Appliance, on page 13
- Related Documentation, on page 15

Connect to the Console

You can physically connect to the console on the server using the VGA port or the serial port on the server.

The baud rate should be 9600 while connecting to the console using the serial port. See Set the Baud Rate, on page 12.

You can also connect to the console remotely using the following options:

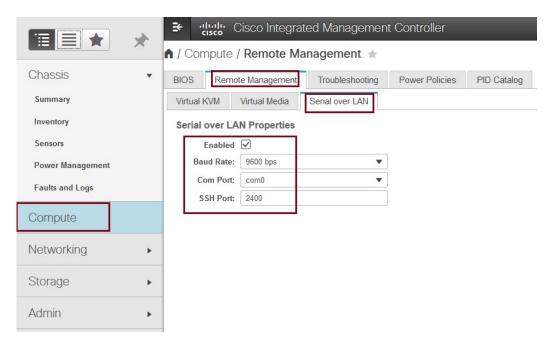
- · Serial over LAN
- Using vKVM

Connect to the Console Using Serial Over LAN

You can use a terminal server to connect to the serial port of the appliance or use Serial over Lan (SOL) to connect to the serial console over the network.

To enable Serial over LAN (SOL):

- **Step 1** Launch CIMC and log in using your username and password configured in Set the Appliance, on page 2.
- **Step 2** Select Compute > Remote Management > Serial Over LAN.
- Step 3 Check the check box Enabled.



- **Step 4** Connect to CIMC using SSH.
- **Step 5** Enter these commands in the following sequence:
 - scope sol
 - show

Serial over LAN must be enabled. If it is not enabled, use the user interface to enable it.

- connect host
- **Step 6** Launch Cisco Integrated Management Controller server using SSH.

```
# ssh admin@(server IP)
Enter the admin password
```

Step 7 Map the ISO image.

```
# scope vmedia
# map-www <VOLUME NAME> <http-location> <PI ISO FILE>
where - <http-location> is http location of iso image
Press Enter
# Server Username:<username>
# Server Password:<password>
# Confirm Password:<renter the password>
       # show mappings
       Volume
                      Map-Status
                                       Drive-Type
                                                        Remote-Share
                                                                                    Remote-File
          Mount-Type
       vol1
                          OK
                                           CD
                                                       http://nmtgre-sjc.cis...
PI-APL-3.7.0.0.159-SNA...
                           WWW
```

exit

Step 8 Reboot the server:

```
# scope chasis
# power off
This operation will change the server's power state.
Do you want to continue?[y|N]y
#
# power on
This operation will change the server's power state.
Do you want to continue?[y|N]y
# exit
```

Step 9 Connect to Serial Over Lan Console.

```
# scope sol
# show detail
Serial Over LAN:
    Enabled: yes
    Baud Rate(bps): 9600
    Com Port: com0
# set enabled yes
# set baud-rate 9600
# commit
# connect host // to connect sol cosole
```

Step 10 The machine reboots and prompts to enter F6 for boot option. Press the function-key **F6**.

You may need to press F6 multiple times to see **Enter boot selection menu...** in the screen. You must wait for a few minutes to get the boot device option.

- Step 11 Select the desired DVD mount option and in this case, you must select Cisco CIMC-Mapped vDVD1.22.
- **Step 12** From the available boot options, enter option 1.
- **Step 13** Enter setup at the login prompt when prompted to initiate the installation.
- **Step 14** Close Network Connection to Exit.

Connect to the vKVM Console

- **Step 1** Launch CIMC and log in using your username and password configured in Set the Appliance, on page 2.
- Step 2 Choose Chassis > Summary.
- Step 3 Click Launch KVM link and select Java based KVM or HTML based KVM to open KVM Console .

The Security Warning dialogue box opens.

Step 4 Click Continue.

The vKVM console is downloaded and the credentials are verified.

Step 5 Click **Run** to install the KVM console.

Set the Baud Rate

| Step 1 | Launch CIMC. |
|--------|---|
| Step 2 | Select Compute > BIOS. |
| Step 3 | Click Configure BIOS. |
| | The Configure BIOS Parameter dialog box opens. |
| Step 4 | Click Advanced Tab |
| Step 5 | Expand Serial Configuration. |
| Step 6 | Select 9600 from the Bits Second field drop-down list. |

DVD Mount Options

Click Save.

Step 7

To re-image the appliance from an *iso* file the DVD mount options available are:

The following DVD mounting options are available:

• Physical DVD Mount

Burn the *iso* file to a DVD and mount it through a physical DVD drive connected to the USB port of the appliance. A physical DVD mount is used when CIMC remote management is not configured. This is the fastest option.

- · CIMC mapped vMedia
- The *iso* file is on the HTTPS, CIFS or NFS server and the speed depends on the Prime Infrastructure Server and File-Server bandwidth. The client server must remain connected till the installation is completed. This is the preferred mode for mounting the *iso* file.
- vKVM DVD mount
- The *iso* file can also be mounted using a virtual console. The *iso* file is on client machine and the speed depends on server appliance bandwidth.

Mount vKVM DVD

The virtual KVM console (vKVM) is an interface accessible from CIMC that emulates a direct keyboard, video, and mouse connection to the server.

To mount an iso file from the desktop client using the vKVM DVD mount:

- **Step 1** Connect to the vKVM console. See Connect to the vKVM Console for more details.
- Step 2 Click Continue in the Warning-Security dialog box to launch the vKVM Console.
- **Step 3** Select Virtual Media > Activate Virtual Devices.

The Uncrypted Virtual Media Session dialogue box opens.

- **Step 4** Select the radio button **Accept this session**.
- Step 5 Click Apply.

The Virtual Device is activated.

Step 6 Select **Virtual Media > Map CD/DVD** and browse to the Prime Infrastructure 3.7 ISO image on your computer.

After mounting the vKVM DVD continue with Installing the ISO on the Appliance

Step 7 Click **Map Device** to mount the ISO image.

Mount a CIMC vMedia DVD

To mount an iso file from CIFS, NFS, HTTP server as a virtual DVD drive on the appliance:

- **Step 1** Launch CIMC and log in using your username and password configured in Set the Appliance.
- **Step 2** Select Compute > Remote Management.
- Step 3 Click Virtual Media and expand Cisco IMC-Mapped vMedia.
- Step 4 Click Add New Mapping under Current Mappings.
- **Step 5** Enter the following parameters:
 - Volume
 - · Remote Share
 - Remote File
 - Mount Options
 - User Name
 - · Password
- Step 6 Click Save.

Password Recovery

You can recover (that is, reset) administrator passwords on Prime Infrastructure physical appliances. See *How to Recover Administrator Passwords on Physical Appliances* in the Cisco Prime Infrastructure Administrator Guide for more information.

How to Recover Administrator Passwords on Gen 3 Appliance

You can recover (reset) administrator passwords on Prime Infrastructure Gen 3 appliances.

Before You Begin

Ensure that you have an current version of ISO image

You can reset the password using,

- Console: CIMC Console (Other console options are KVM Console, VGA Console and Serial Console/Serial Over Lan-SOL)
- **DVD mount option:** KVM mapped DVD (Other mount options are CIMC mapped DVD and Physical External DVD)

To recover the password using Serial Console/Serial Over Lan-SOL, follow these steps:

Step 1 Launch Cisco Integrated Management Controller server using SSH.

```
# ssh admin@(server IP)
Enter the admin password
```

Step 2 Map the ISO image.

```
# scope vmedia
# map-www <VOLUME NAME> <http-location> <PI ISO FILE>
where - <http-location> is http location of iso image
Press Enter
# Server Username: <username>
# Server Password:<password>
# Confirm Password:<renter the password>
      # show mappings
      Volume
                    Map-Status
                                  Drive-Type
                                                    Remote-Share
                                                                             Remote-File
         Mount-Type
OK
      vo11
                                       CD
                                                  http://nmtgre-sjc.cis...
PI-APL-3.7.0.0.159-SNA... www
# exit
```

Step 3 Reboot the server:

```
# scope chasis
# power off
This operation will change the server's power state.
Do you want to continue?[y|N]y
#
#
# power on
This operation will change the server's power state.
Do you want to continue?[y|N]y
# exit
```

Step 4 Connect to Serial Over Lan Console.

```
# scope sol
# show detail
Serial Over LAN:
   Enabled: yes
   Baud Rate(bps): 9600
```

```
Com Port: com0
# set enabled yes
# set baud-rate 9600
# commit
# connect host // to connect sol cosole
```

Step 5 The machine reboots and prompts to enter F6 for boot option. Press the function-key **F6**.

You may need to press F6 multiple times to see **Enter boot selection menu...** in the screen. You must wait for a few minutes to get the boot device option.

- Step 6 Select the desired DVD mount option and in this case, you must select Cisco CIMC-Mapped vDVD1.22.
- Step 7 The vSphere client displays a list of boot options. Enter 4 to select the Recover administrator password (Serial Console) boot option.
 - Note To recover administrator password for Gen 3 appliances, it is recommended to use Serial Over Lan (Serial console)
- **Step 8** The vSphere client displays a list of administrator user names. Enter the number shown next to the administrator user name for which you want to recover (reset) the password and press **Enter**.
- **Step 9** Enter the new password and verify it with a second entry.
- **Step 10** Enter **Y** to save your changes and reboot the system.
- **Step 11** Login to the admin CLI with the new administrator password.

Related Documentation

- Cisco Integrated Management Controller documentation: http://www.cisco.com/c/en/us/support/servers-unified-computing/us-c-series-integrated-management-controller/tsd-products-support-series-home.html
- Cisco UCS C220 M4 Rack Server Specifications Sheet: http://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m4-sff-spec-sheet.pdf
- Cisco UCS C220 Server Installation and Service Guide: http://www.cisco.com/c/en/td/docs/unified_computing/ucs/hw/C220/install/C220.html
- Cisco UCS C220 M5 Rack Server Specifications Sheet:https://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/c220m5-sff-specsheet.pdf
- Cisco UCS C220 Server Installation and Service Guide:https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C240M5/install/C240M5.html

Related Documentation