



Cisco Prime Network Registrar Jumpstart 8.1.1 Quick Start Guide

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Introduction

The Cisco Prime Network Registrar Jumpstart product is a complete solution for using the Cisco Prime Network Registrar application to manage DHCP and DNS servers. It includes the following components:

- Cisco Prime Network Registrar 8.1.1 application software
- Linux CentOS 6.0 Operating System
- VMware ESXi 5.0 Hypervisor
- Cisco UCS C220 M3 Hardware

These components are integrated together into a single flexible and easy to use appliance (see [Figure 1](#)).



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Figure 1 Cisco Prime Network Registrar Jumpstart Configuration

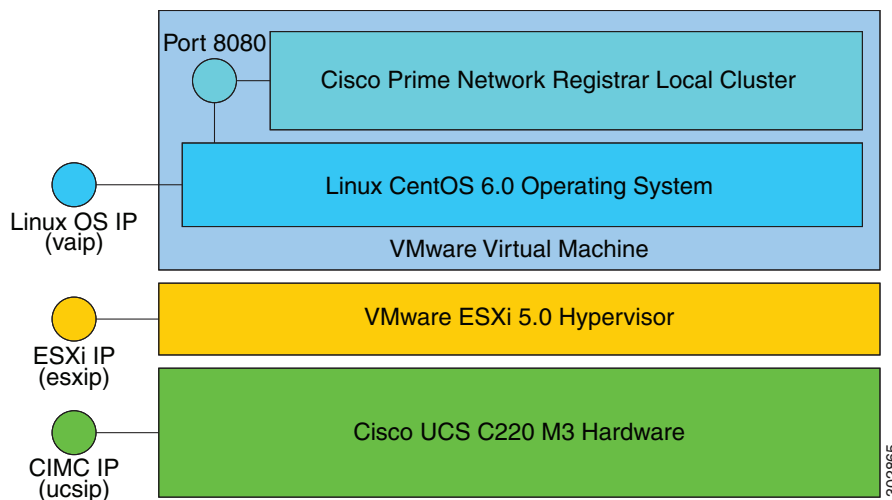


Figure 1 shows the three primary layers in the Cisco Prime Network Registrar Jumpstart appliance. Each of these layers has its own capabilities. Each of these layers can be controlled independently as well as remotely, and each requires its own independent connection to the network. Thus, three unique IP addresses are required.

You may only need to connect to the Cisco Prime Network Registrar Web UI to perform IP address management tasks, but you may also need to connect to one of the other layers to perform system management or troubleshooting tasks related to the appliance.

You can connect to each layer as described below:

- **Connecting to Virtual Appliance (Open Virtualization Format) Layer**—You can connect to the Cisco Prime Network Registrar application layer using a web browser. Use `http://vaip:8080`, where *vaip* is the virtual appliance IP address (which is also the IP address of the Linux Operating System). For a secure connection to the Cisco Prime Network Registrar Web UI, use `https://vaip:8443`.

To access the Cisco Prime Network Registrar Command Line Interpreter (CLI), you can use an SSH connection to the virtual appliance IP address using `ssh -l root vaip`.

You can manage the Linux OS by connecting to it using `ssh -l root vaip`. There is no window system installed on the Cisco Prime Network Registrar virtual appliance, but the standard Linux commands necessary to manage a networking application are all present on the Linux OS.

- **Connecting to ESXi Hypervisor Layer**—Connect to the ESXi hypervisor layer, identified by the IP address *esxip*, using the VMware vSphere client. *esxip* is the IP address designated to the ESXi layer.



Note The VMware vSphere client is supported only on systems running Microsoft Windows.

- **Connecting to Cisco Integrated Management Controller (CIMC) UCS Management Console**—This allows you to configure and manage the ESXi layer. You can connect to the CIMC by using a browser using `https://ucsip/`. *ucsip* is the IP address assigned to the Jumpstart. After you log into CIMC, you can start the KVM console to get access to the ESXi configuration screen and manage hardware (power, temperature, fan RPM).

This guide contains the following sections:

- [Prerequisites, page 3](#)
- [Configuring the Cisco Prime Network Registrar Jumpstart, page 4](#)
- [Configuring Cisco Prime Network Registrar to Automatically Power Up, page 8](#)
- [How to Recover Cisco Prime Network Registrar Jumpstart, page 9](#)
- [Troubleshooting, page 11](#)
- [Related Documentation, page 12](#)

Prerequisites

You must have answers to some questions to initially configure the Cisco Prime Network Registrar Jumpstart. The questions below beginning with Select require you to come up with a new value which is unique to this appliance, while the questions beginning with Determine require you to find out information that is not unique to this appliance.

You should have answers to the following questions when configuring the Cisco Prime Network Registrar Jumpstart:

- Select the IP address for the CIMC port on the Cisco Prime Network Registrar Jumpstart.
- Determine the netmask (subnetmask) for the CIMC port.
- Determine the gateway for the CIMC port.

You should have answers to the following questions when you are configuring network information for ESXi:

- Select the IP address for the ESXi installation on the Cisco Prime Network Registrar Jumpstart.
- Determine the netmask for the IP address for the ESXi installation.
- Determine the gateway address for the ESXi installation on the Cisco Prime Network Registrar Jumpstart.
- Determine the VLAN (if any) for the ESXi installation on the Cisco Prime Network Registrar Jumpstart.

You should have answers for the following questions related to configuring the Cisco Prime Network Registrar virtual appliance:

- Select a virtual machine name for the deployed virtual appliance.
- Select a root password for the Linux operating system on the virtual appliance. You will be prompted to enter and configure the root password during your first boot.
- Select an IP address for the Cisco Prime Network Registrar virtual appliance.
- Select a DNS name (hostname) for the virtual appliance. It should be placed into DNS using the IP address you selected for the virtual appliance.
- Select a username and password for the administrator of the Cisco Prime Network Registrar installation.
- Determine the netmask associated with the IP address for the virtual appliance.
- Determine the gateway address appropriate to the IP address and netmask.
- Determine the IP addresses of up to two DNS servers for the virtual appliance to use.
- Determine any proxy values necessary for the virtual appliance to access the Internet.

**Note**

Ensure that you have the Cisco Prime Network Registrar licenses from Cisco.com before you get started. For details, see the License Files section of *Cisco Prime Network Registrar 8.1 Installation Guide*.

Configuring the Cisco Prime Network Registrar Jumpstart

Configuring Cisco Prime Network Registrar Jumpstart requires you to do the following configuration steps to connect it to the network:

- [Configuring Cisco Prime Network Registrar Jumpstart](#), page 4
- [Configuring Network Information for ESXi](#), page 4
- [Configuring Cisco Prime Network Registrar Virtual Appliance](#), page 6

Configuring Cisco Prime Network Registrar Jumpstart

To configure the Cisco Prime Network Registrar Jumpstart:

- Step 1** Configure the UCS CIMC Network Connection. To configure this, follow the steps in the *Connecting and Powering On the Server (Standalone Mode)* chapter of the enclosed *Cisco UCS C220 Server Installation and Service Guide* or you can see the document available online at http://www.cisco.com/en/US/partner/docs/unified_computing/ucs/c/hw/C220/install/install.html. You have to configure NIC Redundancy as **None** in the *Connecting and Powering On (Standalone Mode)* procedure.

The CIMC gives you insight into the hardware as well as support for a virtual KVM console allowing remote management of the ESXi layer. For details on CIMC, see the *Cisco UCS C-Series Servers Integrated Management Controller GUI Configuration Guide* available at http://www.cisco.com/en/US/partner/docs/unified_computing/ucs/c/sw/gui/config/guide/1.4.1/b_Cisco_UCS_C-Series_GUI_Configuration_Guide_141.html.

Configuring Network Information for ESXi

After configuring the network information for the UCS CIMC console, use the virtual KVM console that the CIMC console provides to configure the network information for the ESXi hypervisor.

- Step 1** Use a browser to connect to the IP address of the CIMC console.
- Step 2** Log into the CIMC console.

**Note**

The default username is **admin** and the default password is **password**, but you should change the password at your earliest convenience.

- Step 3** On the **Server Summary** page, in the **Actions** pane, click **Launch KVM Console**. You will be asked to approve the running of the application, as this operation downloads code to run on your system. After some delay, the KVM Console window is displayed.



Note If login fails, it may be either that someone else already has a virtual KVM console already active for this UCS C220 server or that your browser is not configured to run Java Web Start.

The initial screen on the KVM console displays VMware ESXi 5.0.0.

- Step 4** Press **F2** to customize the system.



Note The virtual KVM console needs to capture the mouse to accept input. It may be necessary on some systems to use the mouse to select the **Single Cursor** option from the **Tools** menu of the KVM Console window. If nothing happens when you press **F2**, select the **Session Options** from the **Tools** menu and click **OK**. Usually this causes the mouse to be captured, and then the functions keys will make it through to the console. If you want the mouse back, you can press **F12**.

- Step 5** Press **F2** again to view the login window.

- Step 6** Log into the host. The default username is **root**, and the password is **password**.
Select **Configure Password** option and reconfigure the root password after you log in.

- Step 7** Using the arrow keys, select **Configure Management Network** option and press **Enter**.

Configuring IP

- Step 8** For IP configuration:
- Use the arrow keys to select **IP Configuration** and press **Enter**.
 - Use the arrow keys to select **Set Static IP address and Network Configuration**.
 - Use the space bar to enable this selection.
 - Use the arrow keys to select **IP Address** and enter the IP address.
 - Use the arrow keys to select **Subnet Mask** and enter the subnet mask.
 - Use the arrow keys to select **Default Gateway** and enter the gateway address.
 - Press **Enter** to accept the IP Configuration updates.



Note If you want to use IPv6 with Cisco Prime Network Registrar, use the arrow keys to select **IPv6 Configuration** and enter the information requested on that screen.

Configuring DNS Servers

- Step 9** To configure the DNS Servers:
- Use the arrow keys to select **DNS Configuration** and press **Enter**.
 - Use the arrow keys to select **Primary DNS Server** and enter the IP address of the primary DNS server.
 - Use the arrow keys to select **Alternate DNS Server** and enter the IP address of the alternate DNS server.

- d. Use the arrow keys to select **Hostname** and enter the hostname.



Note Ensure that you enter the entire hostname, including the domain name.

- e. Press **Enter** to accept the DNS Configuration updates.

Step 10 If you have a VLAN configured on the switch to which the ESXi is connected, use the arrow keys to select **VLAN (optional)** and press **Enter**.

Enter the VLAN for this network connection and press **Enter** to accept the change.

Press **Esc** to exit the **Configure Management Network** window which you are in now.

Step 11 Use the arrow keys to select **Test Management Network** and press **Enter**.

You can see the addresses to be pinged and the hostname to be resolved. Use the arrow keys and select the address to be pinged and press **Enter**. The test pings your default gateway and DNS servers and tests the connectivity. Press **Enter** when the test is complete.

At this point, ESXi listens on the IP address that you configured.

Step 12 Use a browser to connect to the IP address configured for ESXi.

A window displaying **VMware ESXi 5.0 Welcome** appears if you are successful.



Note If a warning message about an untrusted SSL certificate appears, select the appropriate action based on your security policy.

Step 13 If you already have downloaded VMware vSphere and have it available, go to the [“Configuring Cisco Prime Network Registrar Virtual Appliance”](#) section on page 6.

If you have not downloaded VMware vSphere, ensure that you are connecting to the Jumpstart from a system running Microsoft Windows.

If the system on which the browser is running is connected to the Internet, you can click on the link for **Download vSphere Client**. This downloads the VMware vSphere installable on your system which you can then install.



Note The Jumpstart does not need access to the Internet for this to work, but the Windows system running the browser needs to have access to the Internet.

If you are not connected to the Internet, go to system that is connected to the Internet and go to the VMware website. You have to download the vSphere client installation kit. The simplest way to get the vSphere client is to connect to the Jumpstart with a browser running on a Windows machine which also has Internet connectivity.

After you install the vSphere client on your system, proceed to the [“Configuring Cisco Prime Network Registrar Virtual Appliance”](#) section on page 6.

Configuring Cisco Prime Network Registrar Virtual Appliance


The Cisco Prime Network Registrar Virtual Appliance is delivered as a virtual machine installed on the ESXi hypervisor. The virtual machine name as shipped from Cisco is "NR-local-ucs".

**Note**

You can change the virtual machine name to something more descriptive, and you are encouraged to do so, although the underlying disk storage will remain under the name originally used to deploy the Open Virtualization Format (OVF), that is "NR-local-ucs".

To manage the virtual machine containing Cisco Prime Network Registrar, as well as manage any other virtual machines which you may deploy on the Jumpstart, use the VMware vSphere client. See [Step 13](#) of the procedure “[Configuring Network Information for ESXi](#)” for instructions on how to acquire a copy of the VMware vSphere Client.

To configure the Cisco Prime Network Registrar Virtual Appliance:

- Step 1** Select the virtual machine name in vSphere and right-click and open a console.
- Step 2** Click the **Power on** button () on the console and click inside the window after clicking the Power on button. vSphere captures the mouse when you click inside the console window. If you want to release the mouse cursor, press CTRL + ALT.

During the initial boot of the newly deployed machine, you will be prompted to enter a root (system) password, which is not the Cisco Prime Network Registrar password.

**Note**

This is the root password for the underlying Linux operating system on which the Cisco Prime Network Registrar 8.1.1 application is installed. You will be asked to enter this password twice. You will need root access to the underlying Linux operating system later on, so make sure that you remember this password.

- Step 3** Read the end user license agreement and if you agree with the terms stated, accept the agreement.
- Step 4** Use the Arrow Keys to highlight the **Configure Network** option, and press **Enter**. You must configure the virtual appliance to use a static address, so answer n (No) to the DHCP question and configure the following:
- IP Address of the virtual appliance
 - Netmask of the virtual appliance
 - Gateway of the network in which you are creating virtual appliance
 - DNS Server 1
 - DNS Server 2
 - Hostname of the virtual appliance
 - Whether or not you need a proxy set
- Step 5** To save the settings, select y (Yes) when prompted, after reviewing the settings. Select n (No) if you do not want to save the settings.
- Step 6** Using the arrow keys, highlight **Set Timezone** and press **Enter**. Follow the instructions to set the time zone.

See the “[Configuring Cisco Prime Network Registrar](#)” subsection of *Cisco Prime Network Registrar 8.1 Installation Guide* for configuring your Cisco Prime Network Registrar application.

Configuring Cisco Prime Network Registrar to Automatically Power Up

There are several layers of processing involved in running the Cisco Prime Network Registrar application. Each layer has choices it can make about what to do when it is first powered up after power failures.

You can configure the Cisco Prime Network Registrar to start automatically when power is restored to the Jumpstart.

The two places where you have to change the configurations to make this possible are:

- **UCS Hardware**—The UCS hardware has to be configured to power up the ESXi hypervisor when power is restored.
- **ESXi Hypervisor**—The ESXi hypervisor has to be configured to power up the Cisco Prime Network Registrar virtual appliance when power is restored to the ESXi hypervisor layer.

To configure the UCS Hardware to automatically power up the ESXi hypervisor:

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- Step 1** Connect a browser to the CIMC UCS Management Console, and log into the console.
 - Step 2** In the **Server** tab on the left pane, select the **Power Policies** link.
 - Step 3** Select **Power On** from the Power Restore Policy drop-down list in the **Power Restore Policy** area in the right pane.
If you want, you can enter a delay value in the Power Delay Value field.
 - Step 4** Click **Save Changes** to save the updates.
-

To configure the ESXi hypervisor to automatically power up the Cisco Prime Network Registrar virtual appliance when power is restored to the ESXi hypervisor layer, see the “Configuring Virtual Appliance to Automatically Power Up” section of *Cisco Prime Network Registrar 8.1 Installation Guide*.

How to Recover Cisco Prime Network Registrar Jumpstart

This section describes how to recover Cisco Prime Network Registrar Jumpstart 8.1.1. It includes the following sections:

- [Prerequisites, page 9](#)
- [Downloading the Recovery Kit, page 9](#)
- [Recovery Procedures, page 10](#)
- [Recovering the Licenses, page 11](#)

Prerequisites

To start the recovery process, make sure that you have:

- Internet connectivity—Internet connectivity is required to download the recovery images and to request Cisco Prime Network Registrar replacement licenses from Cisco.com. Ensure that you have the licenses with you before you start the recovery process.
- Recovery kit—The Recovery kit is comprised of three files which must be downloaded from www.cisco.com to your local client. For more information, see [“Downloading the Recovery Kit” section on page 9](#).
- Connection to CIMC UCS Management Console—Ensure that the CIMC port is configured on the Cisco Prime Network Registrar Jumpstart appliance. This allows you to configure and manage the ESXi layer. For more information, see [“Configuring Cisco Prime Network Registrar Jumpstart” section on page 4](#).

Downloading the Recovery Kit

To download the Cisco Prime Network Registrar Jumpstart recovery kit:

Step 1 From the appropriate server host or client workstation, do the following:

To download	Go to the following URL
Cisco Prime Network Registrar 8.1.1 Jumpstart Appliance Recovery —approximately 292 MB (cpnr_8_1_1_jumpstart_appliance_recovery.iso)	http://www.cisco.com/cisco/software/release.html?mdfid=284538146&catid=268439477&softwareid=284561914&release=8.1.1&releind=AVAILABLE&rellifecycle=&reltype=latest
Cisco Prime Network Registrar 8.1.1 Local Virtual Appliance for VMWare —approximately 777 MB (cpnr_8_1_1_local_ovf.zip)	http://www.cisco.com/cisco/software/release.html?mdfid=284264133&catid=268439477&softwareid=284240043&release=8.1.1&releind=AVAILABLE&rellifecycle=&reltype=latest
Cisco Prime Network Registrar 8.1.1 Regional Virtual Appliance for VMWare —approximately 808 MB (cpnr_8_1_1_regional_ovf.zip)	

Step 2 To download the recovery kit, click the **Download** button.

Step 3 Sign in with your Cisco.com user ID and password.

- Step 4** Read the Cisco End User License Agreement and accept the conditions by clicking **Accept License Agreement**.
 - Step 5** Download the .iso and the .zip files to a location that can be browsed from the host that will be used to recover the Cisco Prime Network Registrar Jumpstart.
 - Step 6** Locate the saved files and unzip the .zip files to two separate folders (local and regional folders).
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Recovery Procedures

This section explains the following recovery procedures:

- [Recovering Cisco Prime Network Registrar Jumpstart, page 10](#)
- [Recovering the Licenses, page 11](#)


Recovering Cisco Prime Network Registrar Jumpstart

To recover the Cisco Prime Network Registrar Jumpstart:

- Step 1** Use a browser to connect to the IP address of the CIMC console and log into the console.
- Step 2** On the **Server Summary** page, in the **Actions** pane, click **Launch KVM Console**. You will be asked to approve the running of the application, as this operation downloads code to run on your system. After some delay, the KVM Console window is displayed.
- Step 3** Select the **Virtual Media** tab.
- Step 4** Click **Add Image** and browse to select the ESXi installation ISO file (cpnr_8_1_1_jumpstart_appliance_recovery.iso).
- Step 5** Check the check box in the Mapped column for the media that you just added.
Wait for the mapping to complete and close the KVM Console window.
- Step 6** In the **Server** tab on the left pane, click the **BIOS** link and ensure that the CD/DVD is listed as the first item in **Actual Boot Order**.
- Step 7** In the **Server** tab on the left pane, click the **Summary** link.
The Server Summary page appears.
- Step 8** Click **Power Cycle Server** to restart the Cisco Prime Network Registrar Jumpstart appliance.
- Step 9** Follow the on-screen instructions in the KVM Console window to install ESXi 5.0. This step could take several to many minutes depending on the network connection from the client where the install is being run to the server.

You may be presented with a choice to upgrade or re-install and re-partition, depending on the situation. Choose the option appropriate for your situation.

ESXi is always installed in the evaluation mode. If you do not have the ESXi 5.0 license key, call the Cisco Technical Assistance Center (TAC) and ask for the Licensing Team. For your local Cisco TAC phone number, see the Cisco Worldwide Contacts page at:
http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html.
- Step 10** At the end of the installation, unmap the Virtual Media drive from [Step 5](#) before you reboot Cisco Prime Network Registrar Jumpstart appliance.

- Step 11** After the server reboots, configure ESXi 5.0 in the KVM Console window. For more information on how to configure the ESXi layer, see “Configuring Network Information for ESXi” section on page 4.
- Step 12** Using VMware vSphere, connect to the IP address or hostname of the UCS (ESXi).
- Step 13** From the vSphere menu, choose **File > Deploy OVF Template**.
The Deploy OVF Template Source window appears.
- Step 14** To deploy the OVF file, click **Browse** and choose the OVF file (.ovf) available on the location where it was previously unpacked. Choose the appropriate Local or Regional OVF in the corresponding subdirectory.
Complete the deployment following the on-screen instructions. See the "Deploying Cisco Prime Network Registrar Virtual Appliance" procedure in the *Cisco Prime Network Registrar 8.1 Installation Guide* for details.
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-  **Note** You might want to resize the data disk before starting the virtual machine since the Recovery DVD has the standard OVFs. For details regarding increasing the disk size, see the “Increasing the Size of Disk” procedure in the “Introduction to Cisco Prime Network Registrar Virtual Appliance” chapter of the *Cisco Prime Network Registrar 8.1 User Guide*.
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- Step 15** Open console for 'NR-local-ucs' virtual machine and click the **Power on** button to power up the virtual machine. For more information, see “Configuring Cisco Prime Network Registrar Virtual Appliance” section on page 6.
- Step 16** Connect to Cisco Prime Network Registrar using http://. It prompts you to create an admin user and password for Cisco Prime Network Registrar.
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Recovering the Licenses

You can now restore your original license or request a replacement license at <http://www.cisco.com/go/license>.

Troubleshooting

If you encounter any issue for which you are not able to find a solution, contact the Cisco Technical Assistance Center (TAC) for help.

For assistance in troubleshooting, the appliance comes with a secure FTP server and a TAC tool.

Ensure that you send the data gathered by the TAC tool to the Technical Assistance Centre (TAC) team in case of issues. For more details regarding the TAC tool, see the *Cisco Prime Network Registrar 8.1 User Guide*.

You can use the FTP server (vsftpd) to transfer files to and from the virtual appliance. You have to create a user to log into the vsftpd because the 'root' user cannot be used for logging in. The vsftpd will not be up and running when you power on the appliance, so you have to manually start it.

You can start the vsftpd using the command:

```
/etc/init.d/vsftpd start
```

You can stop the vsftpd using the command:

```
/etc/init.d/vsftpd stop
```

Related Documentation

**Note**

We sometimes update the documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

The following is a list of documentation that you can refer to:

Hardware Documents

Go to the following page to see the documentation for UCS server hardware:

<http://www.cisco.com/en/US/products/ps10493/index.html>

Platform-Specific Documents

The following is a list of sites with platform-specific documentation:

- For VMware ESXi specific documentation, go the VMware website.
- For CentOS specific documentation, go to the CentOS website.

Software Documents

The following document gives the list of documents available for Cisco Prime Network Registrar 8.1:

http://www.cisco.com/en/US/docs/net_mgmt/prime/network_registrar/8.1/doc_overview/guide/CPNR_8_1_Doc_Guide.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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