

Cisco Prime Infrastructure 3.9 Installation and Migration Guide for Microsoft HyperV

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Overview

This section provides basic information about the product and this Guide.

Related Topics

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About This Guide

This guide describes how to install Cisco Prime Infrastructure 3.9 for Microsoft Hyper-V and how to migrate or upgrade from previous releases of Cisco prime infrastructure to Cisco Prime Infrastructure 3.9.

For upgrading from Cisco Prime Infrastructure 3.7.x, 3.8.x to Cisco Prime Infrastructure 3.9, See [Upgrade from Previous Releases of Cisco Prime Infrastructure](#), on page 8.

For Migrating from previous releases of Cisco prime infrastructure to Cisco Prime Infrastructure 3.9, see [Migrate from Previous Releases of Cisco Prime Infrastructure](#), on page 9.

For information about configuring and managing this product, see the latest [Cisco Prime Infrastructure User Guide](#) and [Cisco Prime Infrastructure Administrator Guide](#).

Product Overview

Prime Infrastructure provides a single integrated solution for comprehensive lifecycle management of the wired or wireless access, campus, and branch networks, and rich visibility into end-user connectivity and application performance assurance issues. Prime Infrastructure accelerates the rollout of new services, secure access and management of mobile devices, making “Bring Your Own Device” (BYOD) a reality for corporate IT. Tightly coupling client awareness with application performance visibility and network control, Prime Infrastructure helps ensure uncompromised end-user quality of experience. Deep integration with the Cisco Identity Services Engine (ISE) further extends this visibility across security and policy-related problems, presenting a complete view of client access issues with a clear path to solving them.

For:

- An overview of Prime Infrastructure features and benefits, see the latest [Cisco Prime Infrastructure Data Sheets](#).
- Information about frequently used Prime Infrastructure features, see the latest [Cisco Prime Infrastructure User Guide](#).
- Information about features intended for administrators, see the latest [Cisco Prime Infrastructure Administrator Guide](#).

About Cisco Prime Infrastructure Licensing

Prime Infrastructure licenses control the features that you can use and the number of devices you can manage using those features. For more information about:

- Cisco Prime Infrastructure license types and how to order them, see the latest [Cisco Prime Infrastructure Ordering and Licensing Guide](#).
- How to apply purchased licenses, see the latest [Cisco Prime Infrastructure Administrator Guide](#).

About Prime Infrastructure for Microsoft Hyper-V

Cisco Prime Infrastructure for Microsoft Hyper-V extends Cisco networking benefits to Microsoft Windows Server Hyper-V deployments.

Hyper-V is a hypervisor-based server-virtualization product that improves utilization, consolidates server workloads, and reduces costs. To achieve this, Cisco Prime Infrastructure on Hyper-V uses hardware virtualization to enable multiple operating systems to run on a single host, and allows the operating systems to share the same underlying physical hardware.

You can deploy Cisco Prime Infrastructure on Hyper-V in a standalone role or as an installable product.

Prime Infrastructure Operations Center is not supported on Microsoft Hyper-V.

Prerequisites

You must have the following before you begin the installation:

- Microsoft Hyper-V 2016 requirements
 - Server—Hyper-V server 2016
 - Client—Windows 2010 with Hyper-V Manager

See [Remotely manage Hyper-V hosts with Hyper-V Manager](#) for more details.

- Microsoft Windows 2016 Server Edition:
 - Server—Windows 2016 Standard or Datacenter Edition
 - Client—Hyper-V Manager installed in the same Windows 2016 server
- Microsoft Windows 2019 Server Edition:
 - Server—Windows 2019 Standard or Datacenter Edition
 - Client—Hyper-V Manager installed in the same Windows 2019 server

See [Install the Hyper-V role on Windows Server 2016 and Windows Server 2019](#) for more details.

Cisco Prime Infrastructure ISO image

The following Prime Infrastructure ISO images must be available:

- PI-APL-3.9.0.0.219-1-K9.iso

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

1. Download PI-APL-3.9.0.0.219-1-K9.iso, CiscoPI3.9.pem and PI-APL-3.9.0.0.219-1-K9.iso.signature.
2. Copy these file to any Linux server and enter the following command.

```
openssl dgst -sha512 -verify
```

```
CiscoPI3.9.pem -signature PI-APL-3.9.0.0.219-1-K9.iso.signature PI-APL-3.9.0.0.219-1-K9.iso
```

The result will be shown as “Verified”.

Direct Cisco Prime Infrastructure 3.9 installation is supported on Microsoft Hyper-V.



Note Multiple deployments of Prime Infrastructure on the same Hyper-V host in parallel may cause errors, due to non availability of free space when creating VHDs. We recommend that you do not deploy multiple Prime Infrastructure installations on Hyper-V in parallel, unless you have verified that you have enough free disk space required for the respective Cisco Prime Infrastructure models.

System Configuration

The system configuration matrix for the image deployment is:

Table 1: System Configuration Matrix

Requirement	Express	Express-Plus	Standard	Professional
Windows 2016 server & Hyper-V 2016 server and Windows 2019 Server	2016/2019	2016/2019	2016/2019	2016/2019
Virtual CPUs	4	8	16	16
Memory (RAM)	12288 MB	16384 MB	16384 MB	24576 MB
HDD Size	300 GB	600 GB	900 GB	1.2 TB
Throughput (Disk IOPS)	200 MB/s	200 MB/s	200 MB/s	320 MB/s

For maximum management capacities for each installation option, see the section *Scaling Prime Infrastructure* in the latest [Cisco Prime Infrastructure Quick start Guide](#) . You must enter the details about the number of Virtual CPUs, Memory (RAM) and HDD manually during system configuration.

Create Prime Infrastructure Virtual Machines Using Hyper-V Manager

Hyper-V manager has to be installed Windows 2016/2019 server or Windows 10 client. See [Install the Hyper-V role](#) for more details.



Note The Hyper-V server must be listed in the Hyper-V manager before you proceed with creating a new VM.

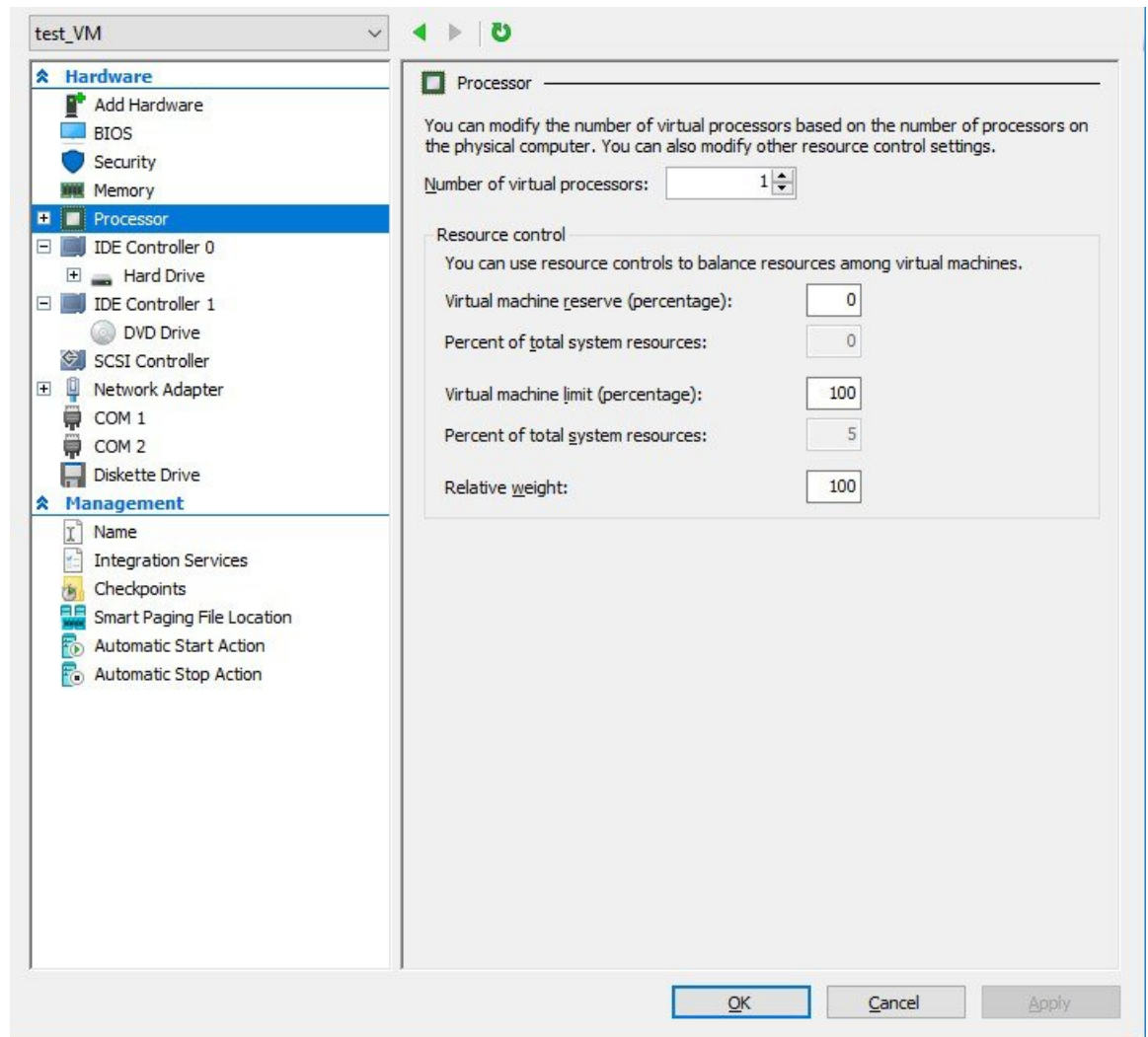
To create a VM using the new Virtual Machine Wizard in the Microsoft Hyper-V Manager, follow these steps:



Note System administrator privileges for Hyper-V are required.

Procedure

- Step 1** Login to the Windows 2016/2019 server or Windows 10 client and launch Hyper-V manager.
- Step 2** Right click on the server and select **New > virtual Machine**.
The New Virtual Machine Wizard screen opens
- Step 3** Read the **Before You Begin** information and click **Next**.
- Step 4** Enter the VM name and click **Next**.
You can check the **Store the virtual machine in a different location** check box if you want to specify a location other than the default location.
- Step 5** Select **Generation 1** in the Specify Generation screen and click **Next**.
Note **Generation 2** is not supported for Prime Infrastructure deployment.
- Step 6** Enter the start up memory value in the **Assign Memory** screen and click **Next**.
Refer to the table in the section [System Configuration, on page 3](#) for the startup memory values.
- Step 7** Select **Virtual Network Adapter** from the **Connection** drop-down and click **Next**.
See [Create a virtual switch for Hyper-V virtual machines](#) for more information on a virtual switch.
- Step 8** Select **Create a virtual hard disk**, enter the hard disk size in GB and click **Next**.
Refer to the table in the section [System Configuration, on page 3](#) for the hard disk values.
- Step 9** Select **Install an operating system from a boot CD/DVD-ROM > Image file (.iso)** from the **Installation Options** screen and browse to the location where the PI-APL-3.9.0.0.219-1-K9.iso is saved and click **Next**.
Note The ISO image should be available in the Hyper-V server if it is a stand alone Hyper-V server.
- Step 10** Click **Finish** in the **Completing the New Virtual Machine Wizard** screen after reviewing your settings.
The Virtual Machine is created with the name used in Step 4.
- Step 11** Right click the Virtual Machine and click **Settings**.



Step 12 Click **Processors** and enter the following:

- Number of virtual processors.
- Virtual Machine Reserve Percentage to 100%

See the table in the section [System Configuration, on page 3](#) for more details.

Step 13 Click **Memory** and enter the following:

- Start Up RAM.
- Set the **Memory Weight** at 50%.

Note The memory must be in MB. See the table in the section [System Configuration, on page 3](#) for more details.

Step 14 Click **OK** and **Apply**.

Step 15 Select the virtual machine you created, right click and choose **Connect** to open the VM windows..

Step 16 Select the virtual machine, right click and choose **Start** to boot the virtual machine.

Step 17 Enter 1—Prime Infrastructure System Installation (Keyboard/Monitor as the boot option).

```

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 installation process takes about 10 to 15 minutes to complete.

Set Up Prime Infrastructure on a Hyper-V Virtual Machine

To set up and start Prime Infrastructure on a Hyper-V virtual machine follow these steps:

Procedure

Step 1 Click the **Console** tab.

After the server boots up, the localhost login prompt appears.

Step 2 Enter **setup** at the localhost login prompt.

Step 3 Enter the following parameters:

- **Hostname**—The host name of the virtual appliance.
- **IP Address**—The IP address of the virtual appliance.
- **IP default netmask**—The default subnet mask for the IP address.
- **IP default gateway**—The IP address of the default gateway.
- **Default DNS domain**—The default domain name.
- **Primary nameserver**—The IP address of the primary name server.
- **Secondary name servers**—The IP address of the secondary name server, if available. You can add up to three secondary name servers.
- **Primary NTP server**—The IP address or host name of the primary Network Time Protocol server you want to use. (time.nist.gov is the default).

- **Secondary NTP servers**—The IP addresses or host names of the secondary NTP servers to be used when the primary is not available.
- **System Time Zone**—The time zone code you want to use. See the chapter *System Timezones* in the latest [Cisco Prime Infrastructure User Guide](#) .
- **Clock time**—The clock time based on the server’s time zone.
- **Username**—The name of the first administrative user (known as “admin”). This is the administrator account used to log in to the server via the console or SSH. You can accept the default, which is admin.
- **Password**—Enter the admin user password and then confirm it.

The installer application tests the network configuration parameters entered and installs the software if the parameters entered are correct.

Step 4 Enter the following post-installation parameters:

- **High Availability Role Selection**—Enter **yes** at the prompt if you want this installed server to serve as the secondary server in a high availability implementation. You will be prompted to provide an authentication key to be used for high availability registration. If you enter **no** at the prompt, the server will act as the primary server (standalone) and the installation will proceed with the following prompts:
- **Advance Security option**— You will be prompted for accessing root shell. Enter **Yes** at the prompt to enable root shell access. Enter **No** to disable root shell access.
- **Web Interface Root Password**—Enter and confirm the password used for the default root administrator. This is the account used to log in to the Prime Infrastructure web user interface for the first time and set up other user accounts.

Step 5 Select **Yes** to proceed with the installation, or **No** to re-enter high availability options.

When the installation is complete, the appliance reboots and login prompt appears.

Step 6 Login to the virtual machine using the admin username and password that you specified in Step 4.

Step 7 Run `ncs status` to verify the all the processes have restarted.

See the section *Check Prime Infrastructure Server Status* in the latest [Cisco Prime Infrastructure Administrator Guide](#) for more information.

Login and launch the Prime Infrastructure web interface after the installation is complete.

Modify VM Resource Allocation Using Hyper-V Manager

Use the following steps to make changes to the virtual appliance RAM, CPU or disk space resource allocations.

Be sure to back up the Prime Infrastructure server before attempting these types of changes. For details, see the chapter *Backup and Restore* in the latest [Cisco Prime Infrastructure Administrator Guide](#) .

The Compliance Services will not work if you expand the RAM, CPU or disk space resource allocations after installation.



Tip For better performance: If you are changing RAM and CPU resource allocations for the virtual machine on which you run Prime Infrastructure, and you have more than one virtual machine running on the same hardware, you may also want to change your RAM and CPU resource *reservations* using the Hyper-V Manager.

Procedure

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- Step 1** Login to the Windows 2016/2019 server or Windows 10 client and launch Hyper-V Manager.
- Step 2** Right click the virtual appliance, then click **Shutdown**.
- Step 3** Right-click the virtual appliance, then click **Settings**.
- Step 4** To change the RAM allocation, select **Memory** and change the **Memory Size** as needed. Then click **OK**.
- Step 5** To change the CPU allocation, select **Processors** and select the **Number of Virtual Processors**.
- Step 6** To add a new disk, choose **IDE Controller 0**(you cannot expand the space of the existing disk):
- Select **Hard Drive**, and click **Add**.
 - Click **New** in the **New Virtual Hard Disk Wizard** screen.
 - Click **Next** on the **Before You Begin** screen.
 - Choose **Disk Format > VHDX**, then click **Next**.
 - Choose **Disk Type > Fixed Size**, then click **Next**.
 - Enter the **Name** and specify a **Location** of the new virtual disk, then click **Next**.
- The name of the hard disk should not have any spaces.
- Choose **Configure Disk > Create a new blank virtual hard disk**, and enter the disk size to match one of the VM sizes as described in the latest [Cisco Prime Infrastructure Quick Start Guide](#) .
 - Choose **Summary**, check the details entered by you, then click **Finish**.
- Step 7** Click **Apply**, then **OK**.
- Step 8** Right click the virtual appliance, then **Start** to restart the appliance.
- The server takes approximately 10 to 20 minutes to restart. The HDD will be expanded as per the new configuration on restarting the virtual appliance.
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Upgrade from Previous Releases of Cisco Prime Infrastructure

You can upgrade the following versions of Prime Infrastructure to 3.9:

- Cisco Prime Infrastructure 3.8.1
- Cisco Prime Infrastructure 3.8 Update 02
- Cisco Prime Infrastructure 3.8
- Cisco Prime Infrastructure 3.7.1 Update 04
- Cisco Prime Infrastructure 3.7.1
- Cisco Prime Infrastructure 3.7 Update 03

- Cisco Prime Infrastructure 3.7

If your existing Prime Infrastructure is 3.7.x or 3.8.x, and your upgrade path contains 3.4.x or earlier versions, then you cannot in-line upgrade that server to Prime Infrastructure 3.9 due to security vulnerabilities in the underlying Red Hat 6 installation. You will need to take a backup of the Prime Infrastructure 3.7.x or 3.8.x server, deploy a fresh Prime Infrastructure 3.9 server, and restore that backup into the Prime Infrastructure 3.9 server.



Note While upgrading from PI 3.7.x or PI 3.8.x to PI 3.9, it is mandatory to install the PI 3.9 Mandatory Oracle Patch (PI_3_9_Oct_Oracle_patch-1.0.8.ubf) after Upgrade. This patch includes Oracle Oct 2020 patch and Catalyst 9800 16.12.x version support. This Patch is not required for Prime Infrastructure 3.9 fresh installation as ISO & OVA images already have this Oracle Patch.

But, If you need support for Catalyst 9800 16.12.x version, you will need to install this UBF irrespective of how you migrated to 3.9 (Fresh Install, B&R and Upgrade).

For instruction to install the Oracle Patch, see *Installing Cisco Prime Infrastructure System Patch 3.9* section in the latest [Prime Infrastructure Administrator Guide](#).

See the latest [Cisco Prime Infrastructure Quick Start Guide](#) for more information.

Migrate from Previous Releases of Cisco Prime Infrastructure

You can restore back up only on Prime Infrastructure 3.9 from the following versions:

- Cisco Prime Infrastructure 3.8.1
- Cisco Prime Infrastructure 3.8 Update 02
- Cisco Prime Infrastructure 3.8
- Cisco Prime Infrastructure 3.7.1 Update 04
- Cisco Prime Infrastructure 3.7.1
- Cisco Prime Infrastructure 3.7 Update 03
- Cisco Prime Infrastructure 3.7

See the section *Before You Migrate Your Data* in the latest [Cisco Prime Infrastructure Quick Start Guide](#) before you restore your data from Prime Infrastructure 3.7.x, 3.8.x to your newly installed Prime Infrastructure 3.9 server.

How to Recover Prime Infrastructure Administrator Passwords on Hyper VM

See the latest [Cisco Prime Infrastructure Administrator Guide](#) for details on how to recover administrator passwords.

