



Cisco Performance Visibility Manager 1.0 Installation Guide

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About This Guide

Last Updated: March 5, 2007,

The *Cisco Performance Visibility Manager Installation Guide* provides system administrators with instructions on how to install and start the application. This guide contains the following chapters and appendices:

- Chapter 1, “Planning the Installation”
- Chapter 2, “Installation Requirements”
- Chapter 3, “Installing Cisco PVM”
- Chapter 4, “Installing the Cisco PVM License”
- Chapter 5, “Starting and Stopping Cisco PVM”
- Appendix A, “Uninstalling Cisco PVM”
- Appendix B, “Troubleshooting the Cisco PVM Installation”
- Appendix C, “Installing Cisco PVM Patches”

Conventions

This guide uses the following text conventions.

| Item | Convention |
|--|----------------------------------|
| Commands and keywords | boldface font |
| Variables for which you supply values | <i>italic font</i> |
| Displayed session and system information | screen font |
| Information you enter | boldface screen font |
| Variables you enter | <i>italic screen font</i> |
| Menu items and button names | boldface font |
| Selecting a menu item in paragraphs | Option > Chosen Option |
| Selecting a menu item in tables | Option > Chosen Option |

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Command Line Convention

The backslash character (\) is used to indicate that the command line information listed in a procedure is actually a *single line*, rather than broken into two lines as they might appear on the pages of this guide. For example, the following command is actually a single line:

```
keytool -genkey -keyalg RSA -storepass changeit -keystore \  
$JBOSS_HOME/server/default/conf/ssl.keystore
```

Related Documentation

The following documents relate specifically to the Cisco PVM system:

- *Cisco Performance Visibility Manager User Guide*
- *Cisco Performance Visibility Manager Troubleshooting Guide*
- *Cisco Performance Visibility Manager Quick Start Guide*
- *Cisco Performance Visibility Manager Release Notes*

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/techsupport>

You can access the Cisco website at this URL:

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You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML documentation that is found on the Cisco website without being connected to the Internet. Certain products also have PDF versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

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http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you will find information about how to:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

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<http://www.cisco.com/go/psirt>

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

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- For Emergencies only—security-alert@cisco.com

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



Tip

We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

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Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on [Cisco.com](http://www.cisco.com) features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>



Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is down, or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired, while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

<http://www.cisco.com/go/guide>

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- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

<http://www.cisco.com/ipj>

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

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

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

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



Planning the Installation

Cisco Performance Visibility Manager (PVM) provides server-side components and processes deployed to a single host within the required operating environment. The client-side application is an HTML-based Graphical User Interface (GUI) accessed through a supported web browser.



Note

Details of the Cisco PVM operating environment and system installation are included in Chapter 2, “Installation Requirements”.

This chapter contains the following topics:

- Installation Process, page 1-1
- Username and Password Requirements, page 1-2
- Existing Installations, page 1-2
- Installation Location, page 1-2
- Data Storage Location, page 1-3
- Installation Logs, page 1-4
- Oracle Installation, page 1-4
- Temporary File Cleanup, page 1-4

Installation Process

The installation process is automated using Cisco PVM installation software on a dedicated server. The installation software, a Linux shell script, installs all components and sets the environment to run Cisco PVM with minimum user interaction.

The Cisco PVM installation requires root-level access to a Linux server that has been configured in accordance with the operating environment requirements specified in Chapter 2, “Installation Requirements”. The automated installation process performs the following steps:

1. Performs an initial system check for minimum system requirements, including the hardware platform, system memory, and Linux kernel release version.
2. Checks for an existing Cisco PVM installation.
3. Prompts you to create an Administrator username.
4. Prompts you to create an Administrator password.
5. Prompts you for desired installation location.

6. Prompts you for the desired data storage location.
7. Checks for necessary hard drive space.
8. Installs Cisco PVM.
9. Installs the database.
10. Performs post-install operations, including creating log files, generating an evaluation license and cleaning up temporary files.

Username and Password Requirements

The Cisco PVM installation DVD will prompt you to create an Administrator username and password.

- Use alphanumeric characters for the username.
- Use the following characters for the password (maximum 32 characters):
 - lower-case letters a–z
 - upper-case letters A–Z
 - underscore (_)
 - numbers 0–9

LDAP Authentication

By default, Cisco PVM relies on its own authentication and authorization repository created during installation. After installation, the system can be configured to use an Lightweight Directory Access Protocol (LDAP) server for user authorizations.

Cisco PVM supports the following LDAP versions:

- LDAP v2
- LDAP v3



Note

LDAP authentication requires an ACS server.

Existing Installations

If the installation software detects an existing installation, the installation routine notifies you and aborts the installation process. The application must be uninstalled before reinstallation is permitted.

Installation Location

The installation software will prompt you to specify the desired location for the Cisco PVM application and database data. The application is, by default, installed to `/opt/CSCOpvm`. You can accept this default location by pressing **Enter**. Alternately, you can override the default by entering a different installation path.

Data Storage Location

The installation software prompts you to specify the desired location for the Cisco PVM database files. The database files, by default, will be installed to `/u01`. You can accept this default location by pressing **Enter**. Alternately, you can override the default by entering a different database data path.

Required Hardware

Cisco PVM supports a maximum of 200 NAM-2 blades, which is approximately equivalent to 100 NAM-2s plus 300 NM-NAMs. The hardware requirements for Cisco PVM installations differ depending on the number of NAMs your system is intended to support. The requirements are broken down into three configurations:

- Large—Used in configurations of up to 300 NM-NAM blades plus 100 NAM-2s or 200 NAM-2 blades
- Medium—Used in configurations of up to 50 NM-NAM blades plus 50 NAM-2s
- Small—Used in configurations of up to five NAM-2 blades

Table 1-1 provides a summary of the recommended minimum requirements for large, medium, and small configurations.

Table 1-1 Recommended Configuration Summary

| Maximum NAMs Supported | CPUs | RAM | Disk Space |
|-----------------------------|-----------------------------------|------|--|
| Five NAM-2s | Two 3.4 GHz Intel Xeon | 2 GB | 70 GB |
| 50 NAM-2s plus 50 NM-NAMs | Four 3.4 GHz Intel Xeon | 4 GB | 850 GB in high performance array configuration |
| 100 NAM-2s plus 300 NM-NAMs | Four 3.0 GHz Intel Xeon Dual-Core | 8 GB | 4,600 GB in high performance array configuration |

Minimum Disk Space Requirements

The installation software requires a minimum of 4 GB of disk space to install Cisco PVM and third-party software. Cisco PVM requires that 70 GB of disk space be available in the host installation directory for data storage.



Note

Before installing Cisco PVM, ensure that your host machine meets these minimum disk space requirements.

The default database directory is `/u01/oradata/$_ORACLE_SID` (the path is optional), and the installation defaults to a predefined database size.

The installation software checks to ensure that the specified installation path contains sufficient space to support the installation. The installation aborts in the event of insufficient disk space availability.

- The Cisco PVM application requires 4.0 GB.

- Depending on the number and type of NAMs to be supported, disk space required for the Cisco PVM database installation can vary. Cisco PVM requires that a minimum of 70 GB of disk space be available in the data storage directory. Table 1-1 provides examples of required storage space based on the number of NAMs you intend to support.

Installation Logs

The installation software provides status messages during the installation. These messages are provided to the console and are also written to a log. Additionally, errors related to the application and database installations are raised to the console and written to the log.

The installation logs are located at `/opt/CSCOpvm/installogs/*`.

Oracle Installation

Cisco PVM runs using 32-bit Oracle. The installation DVD includes Oracle 9i Standard Edition, and the installation software assigns Oracle variable values.

**Caution**

The embedded Oracle installation cannot be used for anything other than Cisco PVM.

Oracle Password Changes

Changes to the Oracle database passwords, normally done by the DBA, are not recommended. Cisco PVM has specific passwords that are required for product support.

Temporary File Cleanup

Upon successful installation, Cisco PVM cleans up all temporary files.

**Note**

If you abort the installation, the installation process will stop but no automatic rollback or cleanup will be performed.



Installation Requirements

This chapter provides an overview of the installation prerequisites and requirements for installing Cisco PVM. This chapter contains the following topics:

- Hardware and Software Prerequisites, page 2-1
- Installation Directory Space Requirement, page 2-3



Note

Cisco PVM does *not* support distributed installs nor existing Oracle installations.

Hardware and Software Prerequisites

Cisco PVM supports a maximum of 200 NAM-2 modules, which is approximately equivalent to 100 NAM-2s plus 300 NM-NAMs. The hardware requirements for Cisco PVM installations differ depending on the number of NAMs your system supports.



Note

The minimum hardware requirements are intended to support a maximum of five NAM-2 modules or equivalent.

Table 2-1 shows the minimum requirements for servers.

Table 2-1 Minimum Requirements for the Server

| Component | Requirement |
|------------------------|--|
| Processor | Intel Pentium 4 or equivalent (Linux) x86 32-bit architecture microprocessor. (Installation of PVM on a 64-bit microprocessor is not supported.) |
| System Memory | 1 GB |
| Minimum disk space | 75 GB |
| Recommended disk space | 250 GB |
| Hardware | Monitor, Network Card, Ethernet Card, Video Card, CD Drive, Keyboard, Mouse |
| Network Card | 100 MB Ethernet |

Table 2-1 Minimum Requirements for the Server (continued)

| Component | Requirement |
|--------------------------------------|---|
| Operating System | <ul style="list-style-type: none"> Red Hat Enterprise Linux Version 4 (with Update 4 or higher) Red Hat Enterprise Linux Version 3 (with Update 8 or higher) <p>Note Only English language versions are supported.</p> |
| X Virtual Frame Buffer (Xvfb Server) | <p>This X Windows System virtual frame buffer server allows PVM to display traffic statistics. Ensure the Xvfb Server is installed during Red Hat 4.0 OS installation.</p> <p>See the section Required Software of the <i>Cisco PVM Release Notes</i> for information about how to check to see if the Xvfb server is installed and how to install it:</p> <p>http://www.cisco.com/en/US/products/ps6768/prod_release_note_chapter09186a0080640a00.html#wp46500</p> |
| Browser | Internet Explorer 6.0 with Java, JavaScript, and cookies enabled; Recommended: 6.0 SP2 |
| Adobe PDF | Adobe Reader 6.01-6.04 |
| | Note Later versions are not supported. |

Table 2-2 shows the minimum requirements for client machines.

Table 2-2 Minimum Requirements for Client Machines

| Component | Requirement |
|---------------------------------|--|
| Operating System | Microsoft Windows 2000 or XP |
| Processor | Pentium 4 |
| System Memory | 256 MB |
| Display Setting — Color Palette | Microsoft Windows True Color |
| Browser | <p>Internet Explorer 6.0 with Java, JavaScript, and cookies enabled; Recommended: 6.0 SP2</p> <p>Note Users running Windows 2000 and IE 6.0 SP1 should ensure that all available Microsoft updates have been applied.</p> |
| Adobe PDF | Adobe Reader 6.01-6.04 |
| | Note Later versions are not supported. |

Table 2-3 shows the minimum network requirements.

Table 2-3 *Minimum Network Requirements*

| Component | Requirement |
|-----------------|--|
| LAN | 100 MB Ethernet Administrative with the following ports reserved: <ul style="list-style-type: none"> • 1521 • 8443 • 443 • 161 • 162 • 1099 (configured for LDAP) Note Cisco PVM supports LDAP v2 and v3. |
| Network Devices | Configure network devices for the delivery and collection of statistical data |



Note

If the minimum installation requirements for the server are not met, Cisco PVM will not install properly. For details on storage requirements based on the number of NAMs you intend to support, see Table 1-1.

Installation Directory Space Requirement

The installation software requires a minimum of 4.0 GB of disk space to install Cisco PVM. Cisco PVM recommends that 250 GB of disk space be available in the data storage directory. Before installing Cisco PVM, ensure that your host machine meets these minimum requirements.

The default database directory is `/u01/oradata/$_ORACLE_SID` (the path is optional), and the installation defaults to a predefined database size.



Installing Cisco PVM

This chapter provides information about how to install Cisco PVM. Before you begin the installation process, ensure that both the host and client machines meet the software and hardware requirements described in Chapter 2, “Installation Requirements”.

This chapter contains the following topics:

- Verification Tasks, page 3-5
- Summary Of Installation Tasks, page 3-5
- Installing Cisco PVM, page 3-6
- Generating the SSL Key File, page 3-7



Note

For information regarding installation of Cisco PVM patches, see Appendix C, “Installing Cisco PVM Patches.”

Verification Tasks

Before installing Cisco PVM, complete the following tasks:

- Verify that the Cisco PVM server meets the minimum host component hardware requirements as shown in Table 2-1, “Minimum Software and Hardware Requirements for Host Machine.”
- Verify the network meets the minimum requirements shown in Table 2-3, “Network Requirements.”
- Verify the Host Machine OS and Third-Party Software Requirements meet the minimum requirements shown in Table 2-4, “Host Machine OS and Third-Party Software Requirements.”

Summary Of Installation Tasks

To install Cisco PVM, complete the following tasks:

1. Ensure that enough disk space, cache, and memory are available on the server and client machines.
2. Log in as **root** and install Cisco PVM from the DVD.
3. Log in as the Cisco PVM Administrator and:
 - a. generate the SSL Key file (if you do not already have your own file) and
 - b. install the Cisco PVM license file (if you’re intending to run in Production mode).
4. Start Cisco PVM.

**Note**

Users planning to run Cisco PVM in evaluation mode only do not have to install a license file, but must install the SSL Key file. After this file is installed, the evaluation version will run for 90 days. For more information on licensing, see Chapter 4, “Installing the Cisco PVM License.”

Installing Cisco PVM

This section describes how to install Cisco PVM, including all Cisco PVM components except for the license, on a single host machine.

Before You Begin

Gather the following information prior to running the Cisco PVM installation software from the DVD.

- Pathnames for Cisco PVM components, as follows:
 - Cisco PVM installation directory: The default path for the Cisco PVM installation directory is `/opt/CSCOpvm`. If desired choose a different pathname when prompted.
 - Data storage directory: The default path for the data storage directory is `/u01/`. If desired, choose a different path when prompted.

Installation Procedure

Perform the following steps to install Cisco PVM.

**Note**

The installation stops if the available disk space is insufficient.

- Step 1** Log in as `root`.
- Step 2** Insert the Cisco PVM Installation DVD into the drive.
- Step 3** Ensure that the DVD drive is mounted by entering `mount /dev/cdrom /mnt/cdrom`.
- Step 4** From the Linux command line, change the directory by entering `cd /mnt/cdrom`.
- Step 5** Run the script `./installpvm`.

When the Cisco PVM installation software starts, your system displays “*Welcome to the Cisco PVM Installer*” and other introductory messages on the screen, and prompts you to create an Administrator username and password.
- Step 6** Enter the Cisco PVM Administrator username at the `username` prompt.
- Step 7** Enter the Cisco PVM Administrator password at the `password` prompt.
- Step 8** At the installation directory prompt:
 - press **Enter** to use the default directory (`/opt/CSCOpvm`) or
 - enter the pathname you want to use for the Cisco PVM installation directory and press **Enter**.



Note The Cisco PVM installation process should have full access to the installation directory. Examples of invalid installation directories include directories on the DVD or read-only directories on the network.

- Step 9** At the data storage directory prompt:
- press **Enter** to use the default data storage directory (/u01/) or
 - enter the pathname you want to use for the Cisco PVM data storage directory and press **Enter**.

Step 10 Allow the installation to run to completion.



Note If an error occurs, remove the failed installation before attempting another install. See Appendix B, “Troubleshooting the Cisco PVM Installation.”

Generating the SSL Key File

After the installation is complete, perform the following steps to generate the SSL Key file. You might, however, already have your own SSL Key File, so this procedure is optional.

Step 1 Log in as the Cisco PVM Administrator by entering `su - pvmdm`.

Step 2 Enter the following commands:

```
cd $PVM_BASE/j2sdk142/bin
```

```
keytool -genkey -keyalg RSA -storepass changeit -keystore \
$JBOSS_HOME/server/default/conf/ssl.keystore
```



Caution Do not enter any other password than **changeit**. This password must remain unchanged.



Note The ‘\’ (backspace) in the command above indicates that it is one continuous command (one line only rather than two lines).

Step 3 Enter general information about this certificate when prompted, as follows:

```
What is your first and last name?
[Unknown]: <host_name>
What is the name of your organizational unit?
[Unknown]: Engineering
What is the name of your organization?
[Unknown]: Cisco
What is the name of your City or Locality?
[Unknown]: San Jose
```

```
What is the name of your State or Province?  
[Unknown]: CA  
What is the two-letter country code for this unit?  
[Unknown]: US  
Is CN=<host name>, OU=Engineering, O=Cisco, L=San Jose, ST=CA, C=US  
correct?  
[no]: yes
```

Step 4 When prompted for the key password, enter **changeit**.

Completing the Installation

After the Cisco PVM installation is complete, install the license file and start Cisco PVM. See Chapter 4, “Installing the Cisco PVM License,” and Chapter 5, “Starting and Stopping Cisco PVM.”

**Note**

If no license file is found, Cisco PVM will run in Evaluation mode for 90 days.



Installing the Cisco PVM License

Cisco PVM requires a license file to be installed to operate in the non-evaluation mode. The license file is not included in the Cisco PVM distribution; instead, Cisco PVM must first be installed on a host computer and then a license file must be acquired and installed for that particular host. This chapter describes how to install and test the Cisco PVM license file.

This chapter contains the following topics:

- License Install Process, page 4-1
- Evaluation and Production Modes of Operation, page 4-2
- License Administration, page 4-2
- Installing the License File, page 4-2
- Testing the License Manager, page 4-3
- Verifying the License Manager Status, page 4-3

License Install Process

You must install a license file to run Cisco PVM in Production mode. Without a valid license, Cisco PVM will run for 90 days in Evaluation mode and then cease to operate.

The basic sequence of steps for installing a Cisco PVM license is as follows:

1. Cisco PVM is installed on a host computer.
2. Cisco PVM users request a license file from Cisco. The following information is required during registration:
 - **Hostname:** obtained by executing the command `hostname` on the host computer where Cisco PVM is installed.
 - **Host ID:** obtained by executing the command `lmhostid` on the host computer where Cisco PVM is installed.
 - **Product:** Cisco Performance Visibility Manager.
3. Cisco provides the license file and customers install it on the host where Cisco PVM is installed. This involves:
 - copying the license file to the host computer where Cisco PVM is installed and
 - saving the file as `/opt/CSCOpvm/server/etc/sp_license.dat` and restarting the license server by issuing the command `lmreread`.

Evaluation and Production Modes of Operation

Without a valid license file installed, Cisco PVM will operate in Evaluation mode and will cease operating after 90 days. When a valid license file is installed, Cisco PVM will operate in Production mode. The Production license has no expiration date.



Note

Changes to the license file (such as adding NAMs over the number of current supported licenses) do not require reinstallation of Cisco PVM. In this case, replace the current license file on the Cisco PVM host computer with the new license file and issue the command **lmreread**.

License Administration

Cisco PVM includes the following command-line programs, located in `/opt/CSCOpvm/flexlm/bin`, for handling the licenses.

- **lmstat** – indicates the status of the license server and whether it is up or down.
- **lmreread** – re-reads the license file. This is necessary when the license file is replaced as in the case of obtaining new licensed features.
- **lmhostid** – provides the host ID information that is necessary for generating the license file. All license files are node locked to the host computer for which Cisco PVM is installed.

Cisco PVM provides a log file, `/opt/CSCOpvm/flexlm/log/flexlm.log`, which provides detailed information with respect to when licensed features were checked in and checked out.

Installing the License File

After the installation is complete, the product license must be installed before the application can be run in Production mode.

Perform the following steps to install the license file.

-
- Step 1** Log in as the Cisco PVM Administrator by entering `su - pvmadm`.
- Step 2** Obtain the host name by entering `hostname` at the command prompt
- Step 3** Obtain the host ID by entering the following at the command prompt:
- ```
cd /opt/CSCOpvm/flexlm/bin
./lmhostid
```
- Step 4** Contact Cisco Systems to request a new license file for the specific host where Cisco PVM is installed.
- Step 5** Copy the license file to the host computer installation directory where Cisco PVM is installed and save it as `/opt/CSCOpvm/server/etc/sp_license.dat`.
- Step 6** Restart the license server by entering the following at the command prompt:
- ```
cd /opt/CSCOpvm/flexlm/bin; lmreread
```
-

Testing the License Manager

After installing the license file, verify the license manager status. Ensure that the following Cisco PVM components are up and running:

- License Manager license server daemon (*lmgrd*) is UP.
- Vendor daemon (SP_LM) is UP.
- License server is the current host.

Verifying the License Manager Status

Perform the following steps to check the status of the License Manager.

-
- Step 1** Log in as the Cisco PVM Administrator.
- Step 2** Invoke the status daemon (*lmstat*):
- ```
/opt/CSCOpvm/flexlm/bin/lmstat -c /opt/CSCOpvm/server/etc/sp_license.dat
```
- Step 3** Ensure that the *lmgrd* process is running by entering `ps -ef | grep lmgrd` at the command prompt.
-





## Starting and Stopping Cisco PVM

---

This chapter describes how to start and stop Cisco PVM. After completing the Cisco PVM installation, SSL Key File generation, and license file installation (for Production mode only), start Cisco PVM manually from the command prompt. Since the Oracle database is already running after the installation is complete, no preparation steps are necessary. This chapter describes how to start and stop Cisco PVM.

This chapter includes the following topics:

- Starting Cisco PVM, page 5-1
- Stopping Cisco PVM, page 5-2

### Starting Cisco PVM

This section describes how to start the Cisco PVM for the first time after completing the Cisco PVM installation.

### Logging in Using the Host Machine

- 
- Step 1** At the command prompt, log in as the Cisco PVM Administrator by entering `su - pvmadm`.
- Step 2** Enter `pvm start`.
- 

### Changing the Default Administrator Password

This section tells you how to change the default Administrator password. As a security precaution, change the default password before you start using Cisco PVM.

- 
- Step 1** Open Internet Explorer and browse to `https://<hostname of Cisco PVM server>:8443/`.
- Step 2** Log in to Cisco PVM using the default Administrator credentials:
- The login ID is `pvmadm`.
  - The password is `Pvmadm_2006`.
- Step 3** Click **Admin**.

- Step 4** Click **Password**.
  - Step 5** Enter `Pvmadm_2006` in the Old Password field.
  - Step 6** Enter a new password in the New Password field.
  - Step 7** Re-enter the new password in the Confirm Password field.
  - Step 8** Click **OK**.
  - Step 9** Click **Logout**. The system displays the login window.
- 

## Logging in to the Client GUI

Follow these steps to log in to the Cisco PVM GUI and begin using the system.

- Step 1** Open Internet Explorer and browse to `https://<hostname of Cisco PVM server>:8443/` (if the login page is not already displayed).
  - Step 2** Enter the Administrator username you created during the Cisco PVM installation in the Login ID field.
  - Step 3** Enter the Administrator password you created during the Cisco PVM installation in the Password field.
  - Step 4** Click **Login**.
- 

## Stopping Cisco PVM

Perform the following steps to stop Cisco PVM.

- Step 1** At the command prompt, log in as the Cisco PVM Administrator by entering `su - pvmadm`.
  - Step 2** Change the directory by entering `cd /opt/CSCOpvm/bin`.
  - Step 3** Stop the application by entering `pvm stop`.
-



## Uninstalling Cisco PVM

---

When you uninstall Cisco PVM, you will remove all of the application's components and data files from the server. The uninstall will stop the Cisco PVM application and remove its components, as well as Oracle and the corresponding data files. Removing Cisco PVM involves executing the uninstall routine, which is Unix shell script.

The uninstall routine for Cisco PVM performs the following steps:

- Stops Cisco PVM and Oracle.
- Removes Cisco PVM and Oracle application files.
- Removes the Oracle database.
- Cleans up system files and environment variables.

## Cisco PVM Uninstall

You can uninstall Cisco PVM from either the DVD or the command line.

### Uninstalling using the DVD

---

- Step 1** Log in as `root`.
  - Step 2** Insert the Cisco PVM installation DVD into the drive.
  - Step 3** Change the directory path by entering `cd /mnt/cdrom`.
  - Step 4** Uninstall Cisco PVM by entering `./installpvm -u`.
- 

### Uninstalling from the Command Line

---

- Step 1** Log in as `root`.
  - Step 2** Enter the command `/opt/CSCOpvm/server/bin/uninstall_pvm.sh`.
-

## Uninstall Log

Currently, no uninstall log is specifically created. Cisco PVM does, however, present messages to the console indicating the success or failure of any step.

During the uninstall process, watch the console for error messages and notify Cisco support if any errors are found. If you receive no failure messages, then Cisco PVM performed a clean uninstall.



# Troubleshooting the Cisco PVM Installation

This appendix describes errors you might receive during a Cisco PVM installation, their causes, and troubleshooting measures used to resolve them.



**Note**

For more information on specific Cisco PVM error messages and general troubleshooting, see the Cisco Performance Visibility Manager *Troubleshooting Guide*.

## Installation Errors

If you encounter errors during the installation process, any of the following situations might have occurred:

- Your system has not met all of the prerequisites for installation. If errors occur, you should first determine whether your system configuration meets the conditions described in Chapter 2, “Installation Requirements.”
- You do not have proper write permissions for all of the installation directories.
- Your system does not have enough disk space allocated to the installation directory.

Table B-1 describes the causes and solutions for installation errors.

**Table B-1** Cisco PVM Installation Error Messages

| Error                      | Reason                                                              | Solution                                                                                                                           |
|----------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Not enough free disk space | Insufficient disk space in the Cisco PVM installation directory.    | Free up 4.0 GB in the installation directory and 70 GB in the database installation directory and repeat the installation process. |
| Incorrect OS Version       | An attempt to install Cisco PVM on an unsupported OS or OS version. | Install Cisco PVM on a server that is running Red Hat Linux Advanced Server Version 3 with Kernel 2.4 (Update 2 or higher).        |

**Table B-1** *Cisco PVM Installation Error Messages (continued)*

| <b>Error</b>                                                  | <b>Reason</b>                                                                                                                          | <b>Solution</b>                                                                                                   |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Invalid installation directory                                | An invalid Cisco PVM installation directory (such as a directory on the DVD or on the network with no write permission) was specified. | Use the default /opt/CSCOpvm/ directory or enter the correct directory path at the installation directory prompt. |
| Invalid data storage directory                                | An invalid Cisco PVM data storage directory was specified.                                                                             | Use the default /u01/ directory or enter the correct directory path at the data storage directory prompt.         |
| WARNING!!! - Some of Cisco PVM processes are still running... | Indicates that Cisco PVM is still running (from a previous installation).                                                              | Stop Cisco PVM, stop the processes, and repeat the installation.                                                  |



## Installing Cisco PVM Patches

### Overview

Cisco PVM provides a patch installation mechanism that extracts patches and deploys their contents appropriately. The patch mechanism also provides the ability to:

- Specify a backup directory, if desired.
- Preserve the existing version.
- Uninstall the patch.

This appendix contains the procedure for installing a Cisco PVM patch with the desired options.

### Installing a Cisco PVM Patch

Perform the following steps to install a Cisco PVM patch.

- Step 1** Log in as `root`.
- Step 2** Use the following syntax to install the patch with the options listed in Table C-1:

```
pvm_patch [-b backup_folder | -nb | -u]
```

**Table C-1** Patch Installation Options

| Patch Option                                 | Function                                                                                             |
|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| <code>pvm_patch</code>                       | Installs the patch, storing the backup files in the default <code>/install_dir/backup</code> folder. |
| <code>pvm_patch -b /backup/pvm_021706</code> | Installs the patch, storing the backup files in the <code>/backup/pvm_021706</code> folder.          |
| <code>pvm_patch -nb</code>                   | Installs the patch without storing the backup files.                                                 |
| <code>pvm_patch -u</code>                    | Uninstalls the patch.                                                                                |

