



Cisco Performance Visibility Manager Troubleshooting Guide, 1.0.2

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Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Customer Order Number: OL-8619-03

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About This Guide

Revised: January 24, 2008, OL-8619-03

This guide provides troubleshooting hints, FAQs, and information on faults for the Cisco Performance Visibility Manager solution. This guide consists of the following chapters:

- Chapter 1, “Cisco PVM FAQs and Troubleshooting”
- Chapter 2, “Cisco PVM Tracing”

Audience

This document is intended for system administrators who are responsible for managing Cisco PVM.

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.

Related Documentation

The following documents relate specifically to the Cisco PVM system:

- *Cisco Performance Visibility Manager Installation Guide, 1.0.2*
- *Cisco Performance Visibility Manager User Guide, 1.0.2*
- *Cisco Performance Visibility Manager Quick Start Guide, 1.0.2*
- *Cisco Performance Visibility Manager Release Notes, 1.0.2*

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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



CHAPTER 1

Cisco PVM FAQs and Troubleshooting

This Frequently Asked Questions (FAQ) and Troubleshooting guide provides FAQs and Troubleshooting hints for all Cisco Performance Visibility Manager 1.0.2 (Cisco PVM) functions. This chapter contains the following sections:

- Acronyms and Abbreviations, page 1-1.
- Deployment FAQs and Troubleshooting, page 1-1.
- Setup FAQs and Troubleshooting, page 1-6.
- Monitor and Reports FAQs and Troubleshooting, page 1-10.
- ART FAQs and Troubleshooting, page 1-15.
- General FAQs and Troubleshooting, page 1-17.

Acronyms and Abbreviations

The following list displays the acronyms and abbreviations used in this guide.

- **ART**—Application Response Time
- **DSG**—Data Source Group
- **FAQs**—Frequently Asked Questions
- **GUI**—Graphical User Interface
- **NAM**—Network Analysis Module
- **OLAP**—Online Analytical Processing
- **OLTP**—Online Transaction Processing
- **OS**—Operating System
- **PVM**—Performance Visibility Manager
- **USB**—Universal Serial Bus

Deployment FAQs and Troubleshooting

- Deploying Cisco PVM FAQs, page 1-2
- Deploying Cisco PVM Troubleshooting, page 1-4

Deploying Cisco PVM FAQs

Question What login permissions are required to install Cisco PVM?

Question Why does Cisco PVM not overwrite an existing Cisco PVM installation?

Question What are the default installation directory locations?

Question Can I change the default installation directory locations?

Question Is there a log file generated during installation? If so, where is it located?

Question What are the minimum hardware and software requirements to deploy and operate Cisco PVM?

Question What are the minimum installation directory space and data directory storage requirements to deploy and operate Cisco PVM?

Question What are the ports and protocols used by Cisco PVM?

Question How do I obtain a license file for Cisco PVM?

Question Before contacting Cisco to obtain a license file, what information do I need?

Question What is the difference between Evaluation and Production modes of operation?

Question Does Cisco PVM provide tracing capability?

Q. What login permissions are required to install Cisco PVM?

A. Cisco PVM installation requires root-level access to the Linux server that has been configured to run Cisco PVM.

Q. Why does Cisco PVM not overwrite an existing Cisco PVM installation?

A. If a previous version of PVM is found to be running, the installer will ask you to stop PVM and reinstall. If an existing installation is found and PVM is not running, the installer will ask you if you want to remove the installation and directories. If the answer is yes, then the installation will perform the necessary action and continue with the installation. If the answer is no, then the installation will terminate.

Q. What are the default installation directory locations?

A. Pathnames for Cisco PVM components are as follows:

- Cisco PVM Installation directory – /opt/CSCOpvm. If desired, choose a different pathname when prompted.
- Oracle Installation directory—The default directory for the Oracle installation is /opt/CSCOpvm/oracle. If desired, choose a different root when prompted.
- Oracle data storage directory—The default directory for the data storage directory is /opt/CSCOpvm/oradata/. If desired, choose a different root when prompted.

Q. Can I change the default installation directory locations?

A. The installer will check to ensure that the specified installation directories have the recommended amount of free disk space available. For the PVM install directory, the minimum recommended is 4GB. For the Oracle install directory, the minimum recommended is 4GB, and for the Oracle data directory, the minimum recommended is 70 GB.

Q. Is there a log file generated during installation? If so, where is it located?

- A.** Yes, the Cisco PVM installer provides status and progress messages during the installation. These messages are raised to the console and written to the log files located at `[installation directory]/logs`. The primary installation log, `pvmInstall_[timestamp].log`, contains all messages displayed to the console, environment variable settings, and the status of each installation step. It will include references to other detailed logs as needed, which are also located in the `[installation directory]/logs` directory.:
- `gui.log`: application log file
 - `oltp_install.log`: transactional database instance log file
 - `olap_install.log`: analytical database instance log file
 - `report_server.log`: report module log file
- Q.** What are the minimum hardware and software requirements to deploy and operate Cisco PVM?
- A.** See the Installation Requirements chapter of the *Cisco Performance Visibility Manager Installation Guide*.
- Q.** What are the minimum installation directory space and data directory storage requirements to deploy and operate Cisco PVM?
- A.** The installer will check to ensure that the specified installation directories have the recommended amount of free disk space available. For the PVM install directory, the minimum recommended is 4 GB. For the Oracle install directory, the minimum recommended is 4 GB, for the Oracle data directory, the minimum recommended is 70 GB, and 1 GB for temporary storage during installation.
- Q.** What are the ports and protocols used by Cisco PVM?
- A.** PVM is dependent on certain ports being open and available for proper functioning. The list of ports that need to be available are: 161 (SNMP), 162 (SNMP), 443 (https), 1521 (Oracle), 8000 (Actuate), 8100 (Actuate), 8443 (https), 8700 (Actuate admin.), and 8900 (Actuate). See Table 1-1.

Table 1-1 Cisco PVM Ports and Protocols

Port	Protocol
161	SNMP
162	SNMP
443	HTTPS
1521	Oracle
8000	Actuate
8100	Actuate
8443	HTTPS
8700	Actuate admin.
8900	Actuate

- Q.** How do I obtain a license file for Cisco PVM?
- A.** Cisco Systems support provides the Cisco PVM license file. The customer installs the license file on the host machine where Cisco PVM is installed. See the *Cisco Performance Visibility Manager Installation Guide* for details.

- Q.** Before contacting Cisco to obtain a license file, what information do I need?
- A.** Cisco PVM users must request a license file from Cisco. The following information is required during registration:
- Hostname—obtained by executing the command **hostname** on the host computer which Cisco PVM is installed.
 - Host ID—obtained by executing the command **lmhostid** on the host computer which Cisco PVM is installed.
 - Product—specific product for your host computer.

For additional details, see Installing the Cisco PVM License in the *Cisco Performance Visibility Manager Installation Guide*.

- Q.** What is the difference between Evaluation and Production modes of operation?
- A.** Without a valid license file installed, Cisco PVM will operate in Evaluation mode and will cease to operate once the 90-day evaluation period expires. In Production mode, the license has no expiration.
- Q.** Does Cisco PVM provide tracing capability?
- A.** The Cisco PVM collection framework provides tracing capabilities from the Cisco PVM server. The trace level can be configured which dictates the detail of the trace information. The trace information is logged into separate files for each collector. Some of the security and system logs that appear in the Cisco PVM GUI are also useful to debug certain problems. Filtering can be applied to Security Logs in the Admin GUI to view specific logs.



Note For more details, see Chapter 2, “Cisco PVM Tracing.”

Deploying Cisco PVM Troubleshooting

This section provides the following troubleshooting information for the following symptoms:

- **Symptom** During the Cisco PVM installation, I receive the error message “Not enough free disk space”.
- **Symptom** During the Cisco PVM installation, I receive the error message “Incorrect OS version”.
- **Symptom** During the Cisco PVM installation, I receive the error message “Invalid Installation Directory”.
- **Symptom** During the Cisco PVM installation, I receive the error message “Invalid Data Storage Directory”.
- **Symptom** During the Cisco PVM installation, I receive the error message “WARNING!!! - Some of Cisco PVM processes are still running ...”.
- **Symptom** I cannot write to the /tmp directory to install Cisco PVM.
- **Symptom** I am getting erratic and unexpected responses from my web browser.

Symptom During the Cisco PVM installation, I receive the error message “Not enough free disk space”.

Possible Cause The Cisco PVM installation directory has insufficient disk space.

Recommended Action Check the *Cisco Performance Visibility Manager Installation Guide* for disk space requirements, free up the required space in the installation directory, and repeat the installation process.

Symptom During the Cisco PVM installation, I receive the error message “Incorrect OS version”.

Possible Cause You attempted to install Cisco PVM on an unsupported OS or OS version.

Recommended Action Install Cisco PVM on a server that is running Red Hat Enterprise Linux Version 3 (Update 8 or higher) or Red Hat Enterprise Linux Version 4 (inclusive). The suggested Kernel version is 2.4.21-20 or higher. Red Hat Enterprise Linux Version 3 is available at: <http://ftp.redhat.com/pub/redhat/linux/enterprise/3/> and Red Hat Enterprise Linux Version 4 is available at: <http://ftp.redhat.com/pub/redhat/linux/enterprise/4/>

Symptom During the Cisco PVM installation, I receive the error message “Invalid Installation Directory”.

Possible Cause An invalid Cisco PVM installation directory (such as a directory on the DVD or on the network with no write permission) was specified.

Recommended Action Use the default `/opt/CSCOpvm/` directory or enter the correct directory path at the installation directory prompt. Verify that the directory path is valid. Directory names may include alphanumeric characters, underscores and dashes. Spaces, trailing slashes and other special characters are considered invalid. Only absolute paths are supported.

Symptom During the Cisco PVM installation, I receive the error message “Invalid Data Storage Directory”.

Possible Cause An invalid Cisco PVM data storage directory was specified.

Recommended Action Use the default `/opt/CSCOpvm/oradata` directory or enter the correct directory path at the data storage directory prompt.

Symptom During the Cisco PVM installation, I receive the error message “WARNING!!! - Some of Cisco PVM processes are still running ...”.

Possible Cause This symptom indicates that Cisco PVM is still running (from a previous installation).

Recommended Action Stop Cisco PVM and processes, uninstall the previous version, and repeat the installation. For more information, see Uninstalling Cisco PVM in the *Cisco Performance Visibility Manager Installation Guide*.

Symptom I cannot write to the `/tmp` directory to install Cisco PVM.

Possible Cause You do not have the correct permissions to write to the `/tmp` directory.

Recommended Action Logged in as `root`, change the permissions on the `/tmp` directory (`chmod 777 /tmp`).

Symptom I am getting erratic and unexpected responses from my web browser.

Possible Cause You are using Cisco PVM on an unsupported web browser. Another possible cause could be that the appropriate JRE version is not installed on the machine running the browser.

Recommended Action Use Internet Explorer 6.0 (6.0 SP2 is recommended). Ensure that IE is configured Enabling Java and JavaScript, has all current updates from Microsoft, and accepts all cookies. Also make sure that JRE version 1.4.2 is installed on the machine running the browser.

Setup FAQs and Troubleshooting

- Setting Up Cisco PVM FAQs, page 1-6.
- Setting Up Cisco PVM Troubleshooting, page 1-9.

Setting Up Cisco PVM FAQs

Question What login permissions are required to use Setup features in Cisco PVM?

Question Can I choose different collection cycles for different NAM devices added to the system?

Question When importing NAMs using a CSV file, does Cisco PVM overwrite the existing NAMs?

Question What are the supported CSV files formats to import NAMs into Cisco PVM?

Question Can I invoke a Cisco NAM GUI session from the Setup page?

Question I added a NAM device from the Cisco PVM GUI without adding the corresponding switch/router. Is it possible to edit the NAM device and add the switch/router?

Question What are Data Source Groups used for?

Question Does the system start computing and storing the aggregated statistics values needed for Monitor and Reports in the OLAP database before I can create DSGs?

Question I've installed PVM and all host names are listed as IP addresses rather than their DNS names. When will the DNS names appear?

Question Should collectiontime or rowstamp time be used in checking the data time within the time range criteria?

Question The Actuate installation and/or database installation failed or isn't working properly. What happened?

Q. What login permissions are required to use Setup features in Cisco PVM?

A. You must login as an Administrator in order to have access to the Setup screens.

Q. Can I choose different collection cycles for different NAM devices added to the system?

A. No. You must choose one system wide collection cycle that will be applicable to all NAM devices in the system. This can be done from the **Setup > Preferences** menu item on the left of the page.

Q. When importing NAMs using a CSV file, does Cisco PVM overwrite the existing NAMs?

A. No. Only devices that do not already exist in the system will be imported. PVM uses the IP address as a unique identifier for the device.

Q. What are the supported CSV files formats to import NAMs into Cisco PVM?

- A.** DCR v3 and User-Defined formats. For additional details, see Appendix A, “NAM Import File Formats”, of the *Cisco Performance Visibility Manager User Guide*.
- Q.** Can I invoke a Cisco NAM GUI session from the Setup page?
- A.** Yes. Choose **Setup > NAM**, select a NAM device in the list of NAMs, then click **Connect**.
- Q.** I added a NAM device from the Cisco PVM GUI without adding the corresponding switch/router. Is it possible to edit the NAM device and add the switch/router?
- A.** Yes. Go to **Setup > NAM**, select the desired NAM device in the list of NAMs, then click **Edit**. Click **Add Switch/Router** in the bottom left of the Edit NAM window.
- Q.** What are Data Source Groups used for?
- A.** DSGs are used by the Cisco PVM to set up the types of traffic statistics that are included in monitoring and reporting.
- Q.** Does the system start computing and storing the aggregated statistics values needed for Monitor and Reports in the OLAP database before I can create DSGs?
- A.** Yes. There is no dependency or relationship between when Cisco PVM begins computing and storing the aggregated statistics values in the OLAP database and the creation of the DSGs. Without creating the DSGs, however, you will not be able to display those statistics in the form of reports from the Monitor and Reports pages. However, the data values (aggregated ART statistics) will be in the OLAP database. The aggregation of the collected values is done every 24 hours.
- Q.** I've installed PVM and all host names are listed as IP addresses rather than their DNS names. When will the DNS names appear?
- A.** Cisco PVM resolves host names once daily using a background process. The DNS names will appear 24 hours after installation. The names will appear in reports that contain host name columns.
- Q.** Should **collectiontime** or **rowstamptime** be used in checking the data time within the time range criteria?
- A.** In checking the time range criteria, **collectiontime** should be used.

**Caution**

The client and the server times must be synchronized.

- Q.** The Actuate installation and/or database installation failed or isn't working properly. What happened?
- A.** In order to function properly, the machine hosting Cisco PVM must have a correct hostname and domain name. This should be completed prior to installation. PVM installations will abort if the hostname and domain name configurations are incorrect.

**Caution**

Changing the system hostname after the installation is not recommended. If you need to change the system host name, uninstall Cisco PVM, configure the hostname and domain name, then reinstall Cisco PVM.

Table 1-2 describes how to change and set the system hostname if the machine is configured with a fixed IP address.

Table 1-2 Changing System Hostnames

Location	Steps
System-config-network tool	The best way to set the hostname and the domain name is to use system-config-network : From the Launch menu: System Setting/Network or, from the Linux shell: setup and select Network configuration
DNS tab	On the DNS Tab enter full qualified hostname: hostname with domain hostname = pvml.mycompany.com
Host Tab	On the Host Tab add or edit the entry for associating the server IP address with the full (qualified) hostname and alias: address = 192.168.0.15 hostname = pvml.mycompany.com alias = pvml
Saving Your Settings	Click File > Save . The system displays a warning that network services must be restarted for the changes to take effect.
Restarting Network Services	<ol style="list-style-type: none"> 1. Click System Settings > Server Settings > Services 2. Select Network and click Restart or, from the Linux shell: service network restart
Devices Tab	<ol style="list-style-type: none"> 1. On the Devices Tab, select the network interface used to communicate with the PVM machine and click Edit. 2. Enter a hostname (either short - unqualified or full - qualified, depending on your DHCP configuration)
DNS Tab	On the DNS Tab , enter the full (qualified) hostname (hostname with domain): hostname = pvml.mycompany.com The additional parameters (primary DNS, secondary DNS, tertiary DNS, DNS search path) will be dynamically provided by DHCP.
Saving Your Settings	Click File/Save The additional parameters (primary DNS, secondary DNS, tertiary DNS, DNS search path) will be dynamically provided by DHCP. The system displays a warning stating that network services must be restarted for the changes to take effect.
Restarting Network Services	Click System Settings > Server Settings > Services .

Setting Up Cisco PVM Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** I added a new NAM through the GUI, but it does not seem to be collecting data.
- **Symptom** When editing a NAM device from the GUI, I am unable to modify the IP address of the NAM or of the associated switch/router.
- **Symptom** I received an error dialog box stating that “The file uploaded is not valid” when trying to import NAMs. What do I do to upload the CSV file?
- **Symptom** I made a GUI request to import NAMs from a CSV file. I did not get any error messages but I do not see the imported NAMs in the NAMs window.
- **Symptom** While attempting to delete a Data Source Group from the Cisco PVM GUI, I received the error message “Failed to delete Data Source Group”.
- **Symptom** While attempting to add a Data Source Group from the Cisco PVM GUI, I received the error message “Another Data Source Group exists with the same Data Source(s)”.
- **Symptom** I do not see a baseline value for a Threshold I have defined in the system.

Symptom I added a new NAM through the GUI, but it does not seem to be collecting data.

Possible Cause during the setup of the individual NAM, the Enabled checkbox might not have been checked.

Recommended Action Ensure that you can ping the NAM from the server, and then ensure that the Enable Collection checkbox is checked for the NAM using the Edit NAM function under the Setup tab. For more information, see Chapter 2, “Setup”, in the *Cisco Performance Visibility Manager User Guide*.

Symptom When editing a NAM device from the GUI, I am unable to modify the IP address of the NAM or of the associated switch/router.

Possible Cause The system does not allow modification of the IP addresses.

Recommended Action Delete the NAM and add a new one with the desired IP address.

Symptom I received an error dialog box stating that “The file uploaded is not valid” when trying to import NAMs. What do I do to upload the CSV file?

Possible Cause The file format might not be valid.

Recommended Action Use the following steps to import NAMs:

1. Click **Cancel** to abort the import process and close the Import NAM dialog box.
2. Recreate the file in CSV 2.0 or 3.0 format.
3. Save the file to your local file system.
4. Repeat the Cisco PVM import procedure.

For additional import file details, see Appendix A, “NAM Import File Formats”, of the *Cisco Performance Visibility Manager User Guide*.

Symptom I made a GUI request to import NAMs from a CSV file. I did not get any error messages but I do not see the imported NAMs in the NAMs window.

Possible Cause The discovery of the NAMs has not taken place yet and the CSV file has not been imported yet.

The discovery of the imported NAMs takes place as follows:

When the import request is made, the CSV file is placed on the Cisco PVM server under a specific directory. A server process polls this directory every 60 seconds to find any new import files. If a file is found, then the NAMs in that file are imported to the system (only NAMs that are not already in the system are imported). The fact that the imported NAMs do not show up in the list of NAMs in the GUI means that the CSV file has not been processed by the server process yet.

Recommended Action Wait for a period of time equal to the import polling interval, until the CSV file is processed by the server.

Symptom While attempting to delete a Data Source Group from the Cisco PVM GUI, I received the error message “Failed to delete Data Source Group”.

Possible Cause You were trying to delete a system-generated (predefined) DSG. The names of system-created data source groups start with the prefix “SYSTEM”.

Recommended Action None. System-generated DSGs cannot be deleted.

Symptom While attempting to add a Data Source Group from the Cisco PVM GUI, I received the error message “Another Data Source Group exists with the same Data Source(s)”.

Possible Cause There is another DSG with the same Data Sources.

Recommended Action Use the existing DSG. It is not possible to create two DSGs that have the same Data Sources.

Symptom I do not see a baseline value for a Threshold I have defined in the system.

Possible Cause The Aggregation Period is set too low for the amount of data collected for the assigned statistic. The system might have encountered a low-traffic situation where at least one time bucket during the last 24 hours contains no data.

Recommended Action Set the Aggregation Period to a higher value in the Edit Threshold window. The system will automatically recalculate the baseline using the new time interval for data collected over the last 24 hours.

Monitor and Reports FAQs and Troubleshooting

- Cisco PVM Monitoring and Reporting FAQs, page 1-11.
- Cisco PVM Monitoring and Reporting Troubleshooting, page 1-12.

Cisco PVM Monitoring and Reporting FAQs

Question I get the output of a report request (from the Monitor or Reports pages), and the top of the report page states “Page 1 of N+” where N is greater than or equal to 1. What does the “N+” mean?

Question Can I invoke a Cisco NAM GUI session from a report page obtained through a Monitor or Reports request?

Question After a report is displayed as a result of a Reports request, how can I view the Report Parameters window to new parameters for another report?

Question In the Monitor page in the header section (where we select the report parameters), what is the AutoRefresh check box used for?

Question Can we see real-time charts from the Monitor or Reports pages?

Question Can we see trend reports from the Monitor or Reports pages?

Question What is the difference between All NAM and Aggregated report views?

Question In checking the time of the data to be used in a certain datetime period, which of the following options should be used?

- Q.** I get the output of a report request (from the Monitor or Reports pages), and the top of the report page states “Page 1 of N+” where N is greater than or equal to 1. What does the “N+” mean?
- A.** The “N+” means that there are more than “N” pages in the report and that the pages are still being loaded. You need to wait for a few seconds until all pages are loaded and the total number of pages in the report is shown: Page 1 of N, where N is greater or equal to 1.
- Q.** Can I invoke a Cisco NAM GUI session from a report page obtained through a Monitor or Reports request?
- A.** Yes. Click on the NAM device hyperlink in the report page.
- Q.** After a report is displayed as a result of a Reports request, how can I view the Report Parameters window to new parameters for another report?
- A.** Expand the Generate Reports menu by clicking the Expand/Collapse icon in the upper left corner, then click on a report type under a report suite to get the Report Parameters section.
- Q.** In the Monitor page in the header section (where we select the report parameters), what is the AutoRefresh check box used for?
- A.** If this box is checked, the report that results from the Monitor request will be refreshed every 1 minute.
- Q.** Can we see real-time charts from the Monitor or Reports pages?
- A.** Yes. To see real-time charts, make a request for a tabular report then click on any “R” hyperlink to see a real-time graph.
- Q.** Can we see trend reports from the Monitor or Reports pages?
- A.** Yes. To see trend reports, make a request for a tabular report then click on any “T” hyperlink to see a trend report.
- Q.** What is the difference between All NAM and Aggregated report views?
- A.** When you choose the All NAM view, all data sources that are in the selected Data Source Group (from all NAMs considered in that data source group) are used as the source to generate the report. In this case, Cisco PVM displays the data for each NAM in the selected DSG separately. When you choose the

Aggregated report view, the system also considers all data sources that are in the selected DSG (from all NAMs considered in that data source group) to generate the report. However, it then aggregates the data gathered from all NAMs rather than show the data for each NAM individually.

- Q.** In checking the time of the data to be used in a certain `datetime` period, which of the following options should be used?

Table 1-3 Options For Checking Time of Data

Time Checking For Certain Datetime Period
A) <code>Data_time >= Time_1 AND Data_time <=Time_2</code>
B) <code>Data_time > Time_1 AND Data_time < Time_2</code>
C) <code>Data_time > Time_1 AND Data_time <=Time_2</code>
D) <code>Data_time >= Time_1 AND Data_time < Time_2</code>

- A.** If the criteria time for a report running over data from `Time1_1` to `Time_2`, the aggregated data between `Time1_1` to `Time_2` is the data that has `Data_time >= Time_1 AND Data_time < Time_2` (selection **D**).

Cisco PVM Monitoring and Reporting Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** When I invoke the Monitor page for the first time or when we get a report as a result of a Monitor request, I do not see the header section where we select the report parameters and the Generate Reports menu (that lists the report types) in the left margin of the page.
- **Symptom** When I get a report as a result of a Reports request, I do not see the Report Parameters pane (to enter new parameters) or the Generate Reports menu (that lists the report types).
- **Symptom** In the Monitor window, I do not see the section where we select the report parameters.
- **Symptom** In the Monitor or Reports windows, I do not see the Generate Reports menu (that lists the report types) in the left margin of the page.
- **Symptom** I get the message “There are no pages to display” after submitting a Monitor or Reports request.
- **Symptom** When I attempt to run a report from either the Monitor or Reports pages, I get the error message “Please select a valid Data Source Group from the list”.
- **Symptom** I added or imported several NAMs, then went to the Monitor or Reports page and there was no data. Why?
- **Symptom** The Monitor page takes a long time to display the default Overview report whenever I click the Monitor tab, and the Overview is not the report that I want to view.
- **Symptom** When I make a Monitor or Reports request, I get a report that has more than one page; however, when I click Next, Last, Goto, or Back, I do not get the expected result. Furthermore, TOC, Download and Print are dimmed.
- **Symptom** The Real-Time Chart window cannot be maximized (the maximize button is dimmed).

- **Symptom** The output of a Monitor or Reports request is a table that has more than one page. From any page other than the first one, I get a Trend Report (click on the 'T' hyperlink of one of the rows). When I click Back in the Trend Report header (not the browser Back button), the first page in the table is displayed instead of the page from which I requested the Trend Report.
- **Symptom** From the Reports page, I schedule a report but the report fails to be generated.
- **Symptom** I am trying to print a report and the system hangs.
- **Symptom** The Reports parameter page requires scrolling.
- **Symptom** I get a report as a result of a Monitor request, but I do not see it in the list of archived reports. Why?

Symptom When I invoke the Monitor page for the first time or when we get a report as a result of a Monitor request, I do not see the header section where we select the report parameters and the Generate Reports menu (that lists the report types) in the left margin of the page.

Possible Cause The header section and the Generate Reports menu are collapsed.

Recommended Action Expand the header section by clicking the Expand/Collapse icon in the upper right corner of the window. Expand the Generate Reports menu by clicking the Expand/Collapse in the upper left corner of the window.

Symptom When I get a report as a result of a Reports request, I do not see the Report Parameters pane (to enter new parameters) or the Generate Reports menu (that lists the report types).

Possible Cause The Report Parameters pane and the Generate Reports menu are collapsed.

Recommended Action Expand the Generate Reports menu by clicking on the Expand/Collapse icon in the upper left corner of the window, then click on a report type under a report suite in the Generate Reports menu to open the Report Parameters section. Another alternative is to simply click the Reports tab.

Symptom In the Monitor window, I do not see the section where we select the report parameters.

Possible Cause The header section is collapsed.

Recommended Action Expand the header section by clicking on the Expand/Collapse icon in the upper right corner of the Monitor page header.

Symptom In the Monitor or Reports windows, I do not see the Generate Reports menu (that lists the report types) in the left margin of the page.

Possible Cause The Generate Reports menu is minimized.

Recommended Action Expand the Generate Reports menu by clicking the Expand/Collapse icon in the upper left corner of the window.

Symptom I get the message “There are no pages to display” after submitting a Monitor or Reports request.

Possible Cause No data is available to display for the chosen reporting period.

Recommended Action Verify the parameters used for the report.

Symptom When I attempt to run a report from either the Monitor or Reports pages, I get the error message “Please select a valid Data Source Group from the list”.

Possible Cause There are no user-created DSGs.

Recommended Action Create one or more DSGs.

Symptom I added or imported several NAMs, then went to the Monitor or Reports page and there was no data. Why?

Possible Cause There are no user-defined Data Source Groups.

Recommended Action Create one or more DSGs.

Symptom The Monitor page takes a long time to display the default Overview report whenever I click the Monitor tab, and the Overview is not the report that I want to view.

Possible Cause There is a large amount of data to be displayed for the Overview report.

Recommended Action Click **Stop** in the Internet Explorer toolbar and the Expand/Collapse icon in the upper left corner of the window, then choose the desired report type to view under the Generate Reports menu. To change the parameters after the new report has run, click the Expand/Collapse icon in the upper right corner of the window.

Symptom When I make a Monitor or Reports request, I get a report that has more than one page; however, when I click Next, Last, Goto, or Back, I do not get the expected result. Furthermore, TOC, Download and Print are dimmed.

Possible Cause The report pages are still being loaded (in the top of the report page it should say “Page 1 of N+” where N is greater or equal to 1).

Recommended Action Wait until all report pages are loaded (the total number of pages in the report will be shown: Page 1 of N, where N is greater or equal to 1).

Symptom The Real-Time Chart window cannot be maximized (the maximize button is dimmed).

Possible Cause Real-Time Charts have been designed as small pop-up charts; they cannot be maximized.

Recommended Action None.

Symptom The output of a Monitor or Reports request is a table that has more than one page. From any page other than the first one, I get a Trend Report (click on the 'T' hyperlink of one of the rows). When I click Back in the Trend Report header (not the browser Back button), the first page in the table is displayed instead of the page from which I requested the Trend Report.

Possible Cause This functionality is a limitation of the engine used to generate, view, and print reports.

Recommended Action Use the Goto or Next buttons in the report header to go to the desired page.

Symptom From the Reports page, I schedule a report but the report fails to be generated.

Possible Cause The DSG used for the report was deleted before the report was generated.

Recommended Action Prior to deleting a DSG, ensure that the DSG is not used to generate any report, particularly scheduled reports.

Symptom I am trying to print a report and the system hangs.

Possible Cause You are using a version of Adobe Reader that is not supported.

Recommended Action Check the *Cisco Performance Visibility Manager Installation Guide* for Adobe Reader requirements and ensure that you are using a supported version.

Symptom The Reports parameter page requires scrolling.

Possible Cause You have one or more third-party toolbars installed, such as Yahoo or Google.

Recommended Action Make sure that no third-party toolbars are installed in the browser.

Symptom I get a report as a result of a Monitor request, but I do not see it in the list of archived reports. Why?

Possible Cause Reports generated through Monitor requests are not archived.

Recommended Action If you need the report to be archived, generate it using the Reports tab.

ART FAQs and Troubleshooting

- Cisco PVM ART FAQs, page 1-15.
- Cisco PVM ART Troubleshooting, page 1-16.

Cisco PVM ART FAQs

Question I created an ART Group, but when I go to the NFT ART report and enter the client IP, I do not see my ART Group in the drop down list. Why?

Question Does the system start computing and storing the aggregated ART statistics values in the OLAP database before I create ART Groups?

- Q.** I created an ART Group, but when I go to the NFT ART report and enter the client IP, I do not see my ART Group in the drop down list. Why?
- A.** When selecting an ART Group for the NFT report, the drop-down list only includes the ART Groups that have data for that client IP. In general, on any ART report, the ART Group drop-down list is filtered so that it only includes ART Groups that have data for the parameters already selected.
- Q.** Does the system start computing and storing the aggregated ART statistics values in the OLAP database before I create ART Groups?
- A.** No. Cisco PVM does not aggregate ART data until a user creates an ART Group. Creation of ART Groups is necessary for ART data aggregation and viewing in Cisco PVM reports.

Cisco PVM ART Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** In the ART screen under Reports, I do not see the report options (Network Flight Time Report Period, Report View, Schedule) where I can enter the data for the report request.
- **Symptom** In the ART screen, I do not see the Generate Reports menu (that lists the sub-menu items) in the left margin of the window.
- **Symptom** In the ART screen, I get the message “There are no pages to display” after submitting a report request.

Symptom In the ART screen under Reports, I do not see the report options (Network Flight Time Report Period, Report View, Schedule) where I can enter the data for the report request.

Possible Cause The ART report parameters pane is collapsed.

Recommended Action Expand the section by clicking the Expand/Collapse icon in the upper right corner of the window.

Symptom In the ART screen, I do not see the Generate Reports menu (that lists the sub-menu items) in the left margin of the window.

Possible Cause The Generate Reports menu is minimized.

Recommended Action Expand the Generate Reports menu by clicking the Expand/Collapse icon in the upper left corner of the window.

Symptom In the ART screen, I get the message “There are no pages to display” after submitting a report request.

Possible Cause No data is available to display for the chosen reporting period.

Recommended Action Verify the parameters used for the report.

General FAQs and Troubleshooting

- General Cisco PVM FAQs, page 1-17.
- General Cisco PVM Troubleshooting, page 1-21.

General Cisco PVM FAQs

Question When I try to access the NAM GUI using Connect on the NAMs page, I get the NAM Traffic Analyzer Login window. Is there any way to store the NAM credentials so that I do not need to enter them every time?

Question Can the data in the OLAP and OLTP databases be archived?

Question When I use a field to filter the information displayed in the GUI, how do I choose the wild card (to match any string)?

Question Is it possible for Cisco PVM Administrator to edit another user without modifying the password of that user?

Question Can an Administrator delete another Administrator?

Question Can I invoke the NAM device GUI from Cisco PVM?

Question Does Cisco PVM provide real-time charts?

Question Does Cisco PVM provide trend reports?

Question How can I recover the default pvmadm user password?

Question How can I change PVM to run in HTTP mode?

Question Can the adapter configuration files be accessed for use in troubleshooting?

Question The PVM shutdown has stalled or issued a permissions error.

Q. When I try to access the NAM GUI using Connect on the NAMs page, I get the NAM Traffic Analyzer Login window. Is there any way to store the NAM credentials so that I do not need to enter them every time?

A. Yes. Edit the NAM device from the PVM Setup GUI; enter the NAM GUI login and password information in the NAM User ID and NAM Password fields respectively.

Q. Can the data in the OLAP and OLTP databases be archived?

A. Yes. Some data can be archived. The archiving process is configurable (the Administrator has the option of enabling or disabling archiving). However purging of old data from the databases is always enabled.

- To tell the system to start purging and archiving, use the following command:

```
archive -p password [-f location] [-I] [-{H | T}]C {start | stop}
```

where the switches configure the archive process as described in Table 1-4.



Note Check the “Database Management” subsection under “Maintaining and Troubleshooting Cisco PVM” in the *Cisco Performance Visibility Manager Deployment Guide* for a listing of default Cisco PVM passwords.

Table 1-4 Archive Command Switches

Switch	Description	Required
p	Specify the password of the tadwop (operator) user.	Yes
f	Specify the location of the archived file.	Optional
I	Perform archive immediately instead of scheduling it as a cron job.	Optional
H or T	Consider historical (H) or transaction data (T).	Optional
C	Archive the configuration table only for OLAP or OLTP.	Optional
start or stop	Enable (start) or disable (stop) archiving.	Yes

To tell the system to stop purging and archiving, use the following command:

archive stop



Note For more information on database archiving, see Appendix C, “Database Archiving”, in the *Cisco Performance Visibility Manager User Guide*.

- Q.** When I use a field to filter the information displayed in the GUI, how do I choose the wild card (to match any string)?
- A.** The use of a wildcard character is not required in Cisco PVM, but you can use either the percent character (%) or the asterisk (*) as wildcards if desired. For example, to find the user “Virginia” in a list of users, you could enter any of the following strings as search criteria:
- virg
 - irg
 - virg%
 - i*g
- Leaving the field blank will return a list of all users.
- Q.** Is it possible for Cisco PVM Administrator to edit another user without modifying the password of that user?
- A.** Yes. In the Edit User window, leave the New Password and Confirm Password fields blank (these fields are optional). However, you cannot edit the Login ID of the user; to do this, you must delete the user and add that user back into the system.
- Q.** Can an Administrator delete another Administrator?
- A.** Yes. An Administrator user can delete any other user of any type (Administrator or General User). However, a General User cannot delete any other users.
- Q.** Can I invoke the NAM device GUI from Cisco PVM?
- A.** Yes. You can invoke a Cisco NAM Traffic Analyzer (NAM GUI) session from the NAMs page under **Setup > NAM**, or from hyperlinked NAM names available in reports generated in either Monitor or Reports.
- To invoke the NAM GUI from the Setup tab, choose **Setup > NAM**, select a NAM device in the list of NAMs, then click **Connect**.



- To invoke the NAM GUI from either the Monitor or Reports tabs, make a report request, then from the report page click the NAM device name hyperlink.
- Q.** Does Cisco PVM provide real-time charts?
- A.** Yes. You can view Real-Time Charts from either Monitor or Reports by clicking any “R” hyperlink in a tabular report.
- Q.** Does Cisco PVM provide trend reports?
- A.** Yes. You can view Trend reports from either Monitor or Reports by clicking any “T” hyperlink in a tabular report.
- Q.** How can I recover the default **pvmadm** user password?
- A.** You can recover the default password for the PVM application using the following steps:
1. Log in as Unix user **pvmadm**
 2. Source the PVM environment by entering the command `/opt/CSCO/pvm/bin/shellrc`
-  **Note** The PVM environment may already be set on your system.
3. Run the password reset script `sp_adminPwdReset`
-  **Note** It is not necessary to run this script from the home directory.
4. Log in to the PVM GUI using the credentials provided in the *Cisco Performance Visibility Manager Installation Guide*.
- Q.** How can I change PVM to run in HTTP mode?
- A.** Follow the steps shown in Table 1-5 to change PVM to run in HTTP mode (instead of the default HTTPS mode):

Table 1-5 Running PVM In HTTP Mode

Enabling non-secure access to PVM GUI	
1. <i>Configure JBoss HTTP-Invoker</i>	<p>Edit file \$JBOSS_HOME\server\default\deploy\http-invoker.sar\META-INF\jboss-service.xml and update each mbean <i>InvokerURLPrefix</i> and <i>InvokerURLSuffix</i> to use the proper protocol and port number (they occur four times). Following are examples using HTTP and port 8080:</p> <pre><attribute name="InvokerURLPrefix">http://</attribute> <attribute name="InvokerURLSuffix">:8080/...</attribute></pre>
2. <i>Configure JBoss Web server (Tomcat)</i>	<ol style="list-style-type: none"> 1. Stop PVM 2. Edit file \$JBOSS_HOME/server/default/deploy/jbossweb-to-mcat41.sar/META-INF/jboss-service.xml to enable non-secure access to PVM GUI via port 8080 3. Comment out (by enclosing between '<!--' and '-->' strings) the corresponding connector section. After commenting, the section should appear as follows: <pre><!-- SSL/TLS Connector configuration using the SSL domain keystore<ConnectorclassName="org.apache.coyote. tomcat4.CoyoteConnector"address="{jboss.bind.a ddress}"port = "8443"minProcessors="5"maxProcessors="50"enab leLookups="true"acceptCount="10"debug="0"conn ectionTimeout="50000"scheme="https"secure="tru e"><FactoryclassName="org.apache.coyote.tomcat 4.CoyoteServerSocketFactory"keystoreFile="{jbo ss.server.home.dir}/conf/ssl.keystore"keystorePass= "changeit"protocol="TLS"/></Connector--></pre> 4. Uncomment the corresponding connector section. After un-commenting, the section should appear as follows: <pre><!-- A HTTP/1.1 Connector on port 8080 --><Connector className="org.apache.coyote.tomcat4.CoyoteCon nector"address="{jboss.bind.address}" port="8080" minProcessors="5" maxProcessors="50" enableLookups="true" acceptCount="10" debug="0" connectionTimeout="5000" useURIVValidationHack="false"/></pre> 5. Start PVM

Q. Can the adapter configuration files be accessed for use in troubleshooting?

- A.** Yes. You can access the configuration files for use in troubleshooting. The configuration files are located at `/opt/CSCOpvm/server/etc/agentconfig` and are named according to their corresponding adapter names:

Table 1-6 Configuration Files

File Names
sp_CiscoART_agent.config
sp_CiscoNAM_826_agent.config
sp_CiscoNAM_827_agent.config
sp_CiscoNAM_828_agent.config
sp_CiscoSwitch_823_agent.config
sp_CiscoSwitch_824_agent.config
sp_CiscoSwitch_825_anget.config
sp_deviceImport.config
sp_hostSync.config
sp_thresholdMonitor.config



Note

To source the environment, execute the following command: `/[install directory]/bin/shellrc`

- Q.** The PVM shutdown has stalled or issued a permissions error.
- A.** If the Oracle database fails to shut down or takes an extended amount of time to shut down, you can use the abort mode to shut down all running queries and Oracle immediately.



Caution

Using the abort mode to shut down an Oracle instance might compromise the data integrity.

To shut down Oracle with the abort mode:

1. Log in as a dba group user.
2. Run sqlplus as a sysdba by issuing the following command:
`sqlplus '/ as sysdba'`
3. At the sqlplus prompt, shut down Oracle:
`SQL> shutdown abort`
`Exit sqlplus`
`SQL> exit`

General Cisco PVM Troubleshooting

This section provides instructions on the troubleshooting information gathering utility:

GetPvmInfo

PVM provides a utility to facilitate information gathering for troubleshooting purposes. The GetPVMInfo utility performs checking of the PVM installation and environment. These results, along with key PVM logs and trace files, are collected and consolidated into an archive.

The GetPVMInfo utility is located in the `/opt/CSCOpvm/server/bin` directory and may be executed only by the `pvmadm` user. The results archive is located in the same directory and will be named `GetPvmInfo_[timestamp].tgz`.

Alternately, the `pvmadm` user may execute the following command to launch the utility `pvm debug`.

Example 1-1

```
su - pvmadm
cd opt/CSCOpvm/server/bin
./GetPVMInfo
```

Example 1-2

```
su - pvmadm
pvm debug
```



Note

The PVM application and database functions require proper configuration of the Linux shell environment. After PVM installation, there will be a shell environment file created at `$PVM_BASE/bin/shellrc` and registered as part of the PVM RPM package (`ciscopvm1-mc_shared`). This file will be used by the PVM application and database processes automatically at PVM runtime. For PVM maintenance and troubleshooting with Linux command-line operations, it is highly recommended for the OS administrator or the `pvmadm` user to configure their system/user environment profile to source this shell environment file or its equivalent copy to set those required environment variables. It is not recommended to change the original copy of the PVM shell environment file at `$PVM_base/bin/shellrc` without consulting PVM product documentation or PVM technical support.

The following provides general troubleshooting information:

- **Symptom** The PVM GUI does not look right. For example, tabs appear cutoff, or the reporting Progress Indicator is not animated.
- **Symptom** I cannot sign on to the NAM from the PVM GUI. The page comes up blank and the browser status bar at the bottom says “Error on page” or there is another problem with the display.
- **Symptom** The PVM GUI suddenly displays the Login screen (while I was already logged in).
- **Symptom** Data in the OLAP and OLTP databases is not being archived.
- **Symptom** The Cisco PVM GUI does not allow an Administrator user to modify the login ID of another user.
- **Symptom** The file system goes into read-only mode during installation.

Symptom The PVM GUI does not look right. For example, tabs appear cutoff, or the reporting Progress Indicator is not animated.

Possible Cause You are using an unsupported version of Internet Explorer.

Recommended Action Use the version of Internet Explorer specified in the installation or user guides. If you are running Windows 2000, ensure that Internet Explorer has all available updates, then go to Advanced Internet Options under the browser menu and click **Restore Defaults**.

Symptom I cannot sign on to the NAM from the PVM GUI. The page comes up blank and the browser status bar at the bottom says “Error on page” or there is another problem with the display.

Possible Cause The correct version of Sun JRE has not been installed or is not enabled in your browser. PVM communicates with the NAM using a Java applet to complete single sign-on.

Recommended Action Ensure that Sun JRE version 1.4 or higher is installed on your machine. Ensure that Java (Sun) is enabled in your browser by following these steps:

-
- Step 1** From the IE browser menu, click **Tools > Internet Options**.
 - Step 2** Select the **Advanced** tab and scroll down to “Java (Sun).”
 - Step 3** Ensure that the box next to “Use JRE 2 for <applet>” is checked.
 - Step 4** Click **Apply**.
 - Step 5** Select the **Security** tab and click **Custom Level**.
 - Step 6** Scroll down to “Scripting of Java Applets.”
 - Step 7** Ensure that the **Enable** radio button is selected.
 - Step 8** Click **OK** in the Security Settings window.
 - Step 9** Click **OK** in the Internet Options window.



Note

IF JRE settings have been changed, you'll need to restart your browser.

Symptom The PVM GUI suddenly displays the Login screen (while I was already logged in).

Possible Cause The PVM GUI login session timed out because the GUI inactivity period exceeded the GUI inactivity time-out threshold period.

Recommended Action Log in to the PVM GUI again.

Symptom Data in the OLAP and OLTP databases is not being archived.

Possible Cause Archiving is disabled. The Administrator has the option of enabling or disabling archiving. By default the archiving is disabled after the installation of the Cisco PVM product.

Recommended Action Enable archiving:

To tell the system to start purging and archiving, use the following command:

```
archive -p password [-f location] [-I] [-{H | T}]C {start | stop}
```

where the switches configure the archive process as described in Table 1-7.



Note Check the "Database Management" subsection under the "Maintaining and Troubleshooting Cisco PVM" section of the *Cisco Performance Visibility Manager Deployment Guide* for a listing of default Cisco PVM passwords.

Table 1-7 Archive Command Switches

Switch	Description	Required
p	Specify the password of the tadwop (operator) user.	Yes
f	Specify the location of the archived file.	Optional
I	Perform archive immediately instead of scheduling it as a cron job.	Optional
H or T	Consider historical (H) or transaction data (T).	Optional
C	Archive the configuration table only for OLAP or OLTP.	Optional
start or stop	Enable (start) or disable (stop) archiving.	Yes

To tell the system to stop purging and archiving, use the following command:

```
archive stop
```



Note

Please refer to Appendix C, "Database Archiving", of the User Guide for further information on Cisco PVM database archiving. To source the environment, execute the following command: `/[install directory]/bin/shellrc`

Symptom The Cisco PVM GUI does not allow an Administrator user to modify the login ID of another user.

Possible Cause User login IDs cannot be modified in Cisco PVM.

Recommended Action Delete the user whose login ID must be modified and add the user back into the system with the desired login ID.

Symptom The file system goes into read-only mode during installation.

Possible Cause The Oracle database data is located on an external USB disk drive which spins down after a period of inactivity.

Recommended Action Download, compile, and deploy a Linux utility called `sdparm` (available at <http://www.novell.com/products/linuxpackages/suselinux/sdparm.html>). This will enable you to turn off the "STANDBY" feature on an external USB disk drive, enabling the drive to stay running during the duration of the PVM installation.

**Note**

The PVM application and database functions require proper configuration of the Linux shell environment. After PVM installation, there will be a shell environment file created at `$PVM_BASE/bin/shellrc` and registered as part of the PVM RPM package (`ciscopvm1-mc_shared`). This file will be used by the PVM application and database processes automatically at PVM runtime. For PVM maintenance and troubleshooting with Linux command-line operations, it is highly recommended for the OS administrator or the `pvmadm` user to configure their system/user environment profile to source this shell environment file or its equivalent copy to set those required environment variables. It is not recommended to change the original copy of the PVM shell environment file at `$PVM_base/bin/shellrc` without consulting PVM product documentation or PVM technical support.



CHAPTER 2

Cisco PVM Tracing

Cisco PVM provides tracing functions for its collection adapters and server components. These tracing log files may be used to troubleshoot application issues.

Trace File Overview

Cisco PVM trace files are located in the `/[CiscoPVM Installation directory]/server/tmp` directory. The default location is `/opt/CSCOpvm/server/tmp`. Each time an adapter or server component is started, a trace file is created. Cisco PVM offers configurable trace levels. The default trace level, 2, provides partial trace information. For troubleshooting purposes, the trace level may be set to any value 0-10 as noted below.

Table 2-1 Trace Files

Trace Level	Result
0	Tracing is off
1	Includes fatal system or application faults
2	Includes information on any error condition that has occurred. This is the default level.
3	Includes information on potential errors, exceptions, or abnormal conditions.
4	Includes major informative tracking messages.
5	Includes minor informative tracking messages.
6-10	Verbose mode. Provides detailed and informative tracking messages



Caution

Increasing the trace level beyond the default trace level may impact system performance.

Trace File Configuration

Cisco PVM tracing can be configured using the adapter configuration files located in the `[installation directory]/server/etc/agentconfig` directory.

Sample output:

```
-rw-r--r-- 1 pvmadm dba 2293 Dec 6 2005 AlarmOidMap
-rw-r--r-- 1 pvmadm dba 331 Jan 20 2006 sp_CiscoART_agent.config
```

```

-rw-r--r-- 1 pvmadm dba 792 Oct 27 2006 sp_CiscoNAM_826_agent.config
-rw-r--r-- 1 pvmadm dba 806 Oct 27 2006 sp_CiscoNAM_827_agent.config
-rw-r--r-- 1 pvmadm dba 796 Oct 27 2006 sp_CiscoNAM_828_agent.config
-rw-r--r-- 1 pvmadm dba 476 Dec 8 2005 sp_CiscoSwitch_823_agent.config
-rw-r--r-- 1 pvmadm dba 476 Dec 8 2005 sp_CiscoSwitch_824_agent.config
-rw-r--r-- 1 pvmadm dba 476 Dec 8 2005 sp_CiscoSwitch_825_agent.config
-rw-r--r-- 1 pvmadm dba 152 Feb 17 2006 sp_deviceImport.config
-rw-r--r-- 1 pvmadm dba 56 Sep 30 2005 sp_hostSync.config
-rw-r--r-- 1 pvmadm dba 264 Jan 18 2006 sp_thresholdMonitor.config
-rw-r--r-- 1 pvmadm dba 530 Jan 26 2006 SystemHealthMonitor.properties

```

To view or edit a components trace level, open the corresponding .config file. For example, to view the configuration for the CiscoNAM_826 adapter, execute the following command:

```
more sp_CiscoNAM_826_agent.config
```

Sample output:

```

LocalSnmpEngID =                ; Local Snmp Engine ID
interCollectionInterval=60      ; time between collections in seconds
ifErrorResendOneByOne = true    ; If resend get request one by one
numOfActorThread = 8           ; set number of threads in thread pool
numOfSNMPEngine = 24          ; num SNMP engine
traceLevel = 2                 ; trace level for the trace file
maxLoadPerAgent = 24          ; the maximum number of NAMs supported by an agent
alarmPollInterval = 60         ; Poll interval in seconds for detecting alarm entry changes
enableTimeMark = true          ; Enable data collection by timemark feature
hostBufferSize = 1000          ; Host ID and Address buffer size, range 1000-9000
maxBulkResponseSize = 70000    ; Maximum number of entries in a GETBULK response
Modify the traceLevel parameter and re-start PVM to have the changes take effect.

```

Trace File Naming and Size Limits

Each time an adapter or server component is started, a trace file is created. The trace files are named for each individual component and use a .trace extension. For example, the ART adapter trace would be named sp_snmp_ciscoART.trace. The following files may be found in the /[CiscoPVM Installation directory]/server/tmp directory. The default location is /opt/CSCOpvm/server/tmp.

Sample output:

```

-rw-r--r-- 1 pvmadm dba 1254 Sep 25 12:20 sp_deviceImport.out
-rw-r--r-- 1 pvmadm dba 12240 Sep 25 12:20 sp_deviceImport.trace
-rw-r--r-- 1 pvmadm dba 318 Sep 25 12:20 sp_hostSync.out
-rw-r--r-- 1 pvmadm dba 2693 Sep 25 12:20 sp_hostSync.trace
-rw-r--r-- 1 pvmadm dba 572 Sep 25 12:20 sp_snmp_ciscoART.out
-rw-r--r-- 1 pvmadm dba 756 Sep 25 12:20 sp_snmp_ciscoART.trace
-rw-r--r-- 1 pvmadm dba 1006 Sep 24 18:46 sp_snmp_ciscoNAM_826_0.trace
-rw-r--r-- 1 pvmadm dba 1520707 Sep 25 11:55 sp_snmp_ciscoNAM_826_1.trace
-rw-r--r-- 1 pvmadm dba 926 Sep 25 12:19 sp_snmp_ciscoNAM_826.out
-rw-r--r-- 1 pvmadm dba 1004 Sep 24 18:46 sp_snmp_ciscoNAM_827_0.trace
-rw-r--r-- 1 pvmadm dba 926 Sep 25 12:19 sp_snmp_ciscoNAM_827.out
-rw-r--r-- 1 pvmadm dba 1004 Sep 24 18:46 sp_snmp_ciscoNAM_828_0.trace
-rw-r--r-- 1 pvmadm dba 913 Sep 24 17:46 sp_snmp_ciscoNAM_828_1.trace
-rw-r--r-- 1 pvmadm dba 926 Sep 25 12:19 sp_snmp_ciscoNAM_828.out
-rw-r--r-- 1 pvmadm dba 850 Sep 24 17:46 sp_snmp_ciscoSwitch_823_0.trace
-rw-r--r-- 1 pvmadm dba 1036 Sep 25 12:20 sp_snmp_ciscoSwitch_823.out
-rw-r--r-- 1 pvmadm dba 0 Sep 20 12:54 sp_snmp_ciscoSwitch_824_0.trace
-rw-r--r-- 1 pvmadm dba 1014 Sep 25 12:20 sp_snmp_ciscoSwitch_824.out
-rw-r--r-- 1 pvmadm dba 680 Sep 24 17:46 sp_snmp_ciscoSwitch_825_0.trace
-rw-r--r-- 1 pvmadm dba 1014 Sep 25 12:20 sp_snmp_ciscoSwitch_825.out
-rw-r--r-- 1 pvmadm dba 504 Sep 25 12:20 sp_thresholdMonitor.out

```

```
-rw-r--r-- 1 pvmadm dba      1032 Sep 25 12:20 sp_thresholdMonitor.trace
-rw-r--r-- 1 pvmadm dba      5836 Sep 25 12:22 SystemHealthMonitor.out
```

Displaying Trace Files

Cisco PVM trace files can be viewed in a user-friendly format using the `sp_tracereader` tool. The tool provides information on its usage when executed with the `-h` (Help) option.

cd [install directory]/server/bin

./sp_tracereader -h

Sample output:

Usage:

```
sp_tracereader [-l <level>] [-c <category in hex>] [-o <objname>]
                [-m <options>] [-d <delimit string>]]
```

The following example prints only trace records of level fatal or error

```
sp_tracereader -l 2
```

```
sp_tracereader -m tpm -d " <--> "
```

Options can be any characters of `thplcfonm`

t - time, h - host, p - port, l - level, c - category, f - filename

o - source class, n - line number, m - message

-d prints the info separated by delimit string

This example prints only trace records with component (object) name **sp_eventlog**

```
sp_tracereader -o sp_eventlog
```

To view the static content of a trace file using the `tracereader` tool, execute the following command from the `/opt/CSCOpvm/server/tmp` directory:

cat <trace file name> | sp_tracereader | more

Sample output:

```
<----- < 1>Fri Sep 21 18:34:28 2007 ----->
```

```
hostname : safi.trendium.com
```

```
port      : 0
```

```
level     : 2
```

```
category  : 1
```

```
filename  : DeviceActor.cpp
```

```
line no   : 936
```

```
obj name  : sp_snmp_ciscoSwitch
```

```
trace msg: MaxPerPduVarSize is not set in configuration file, default value 5
is used
```

```
<----- < 2>Mon Sep 24 17:26:04 2007 ----->
```

```
hostname : safi.trendium.com
```

```
port      : 0
```

```
level     : 2
```

```
category  : 1
```

```
filename  : DeviceActor.cpp
```

```
line no   : 936
```

```
obj name  : sp_snmp_ciscoSwitch
```

```
trace msg: MaxPerPduVarSize is not set in configuration file, default value 5 is used
```

To view the changing contents of a trace file as PVM is processing, execute the following command from the `/opt/CSCOpvm/server/tmp` directory:

tail -f <trace file name> | sp_tracereader

Using PVM Tracing To Troubleshoot

To utilize the tracing functions to troubleshoot application issues, you must:

- a. Identify the appropriate trace file(s).
- b. Change the trace level to verbose.
- c. Restart the component.
- d. Review the trace content for information which will aid in troubleshooting.

Choosing the Correct Trace File

Using Table 2-2, select the component/area to monitor. All trace files are located in the [installation directory]/ server/tmp directory.

```
cd /opt/CSCOpvm/server/tmp
```

```
ls -l
```

e.

Table 2-2 Troubleshooting Using PVM Tracing

Component	Trace File Name	Used for Troubleshooting
NAM Adapters	<code>sp_snmp_ciscoNAM_826_0.trace</code> <code>sp_snmp_ciscoNAM_827_0.trace</code> <code>sp_snmp_ciscoNAM_828_0.trace</code> <code>sp_snmp_ciscoNAM_828_1.trace</code>	NAM adapter collection
ART Adapter	<code>sp_snmp_ciscoART.trace</code>	ART collection
Switch Adapter	<code>sp_snmp_ciscoSwitch_823_0.trace</code> <code>sp_snmp_ciscoSwitch_824_0.trace</code> <code>sp_snmp_ciscoSwitch_825_0.trace</code>	Switch adapter collection
Threshold Monitor	<code>sp_thresholdMonitor.trace</code>	Evaluation of thresholds, raising alerts

Sample output:

```
-rw-r--r-- 1 pvmadm dba      1254 Sep 25 12:20 sp_deviceImport.out
-rw-r--r-- 1 pvmadm dba    12240 Sep 25 12:20 sp_deviceImport.trace
-rw-r--r-- 1 pvmadm dba      318 Sep 25 12:20 sp_hostSync.out
-rw-r--r-- 1 pvmadm dba    2693 Sep 25 12:20 sp_hostSync.trace
-rw-r--r-- 1 pvmadm dba     572 Sep 25 12:20 sp_snmp_ciscoART.out
-rw-r--r-- 1 pvmadm dba     756 Sep 25 12:20 sp_snmp_ciscoART.trace
-rw-r--r-- 1 pvmadm dba    1006 Sep 24 18:46 sp_snmp_ciscoNAM_826_0.trace
-rw-r--r-- 1 pvmadm dba 1520707 Sep 25 11:55 sp_snmp_ciscoNAM_826_1.trace
-rw-r--r-- 1 pvmadm dba     926 Sep 25 12:19 sp_snmp_ciscoNAM_826.out
-rw-r--r-- 1 pvmadm dba    1004 Sep 24 18:46 sp_snmp_ciscoNAM_827_0.trace
-rw-r--r-- 1 pvmadm dba     926 Sep 25 12:19 sp_snmp_ciscoNAM_827.out
-rw-r--r-- 1 pvmadm dba    1004 Sep 24 18:46 sp_snmp_ciscoNAM_828_0.trace
-rw-r--r-- 1 pvmadm dba     913 Sep 24 17:46 sp_snmp_ciscoNAM_828_1.trace
-rw-r--r-- 1 pvmadm dba     926 Sep 25 12:19 sp_snmp_ciscoNAM_828.out
-rw-r--r-- 1 pvmadm dba     850 Sep 24 17:46 sp_snmp_ciscoSwitch_823_0.trace
-rw-r--r-- 1 pvmadm dba    1036 Sep 25 12:20 sp_snmp_ciscoSwitch_823.out
-rw-r--r-- 1 pvmadm dba        0 Sep 20 12:54 sp_snmp_ciscoSwitch_824_0.trace
```

```

-rw-r--r-- 1 pvmadm dba      1014 Sep 25 12:20 sp_snmp_ciscoSwitch_824.out
-rw-r--r-- 1 pvmadm dba       680 Sep 24 17:46 sp_snmp_ciscoSwitch_825_0.trace
-rw-r--r-- 1 pvmadm dba     1014 Sep 25 12:20 sp_snmp_ciscoSwitch_825.out
-rw-r--r-- 1 pvmadm dba       504 Sep 25 12:20 sp_thresholdMonitor.out
-rw-r--r-- 1 pvmadm dba     1032 Sep 25 12:20 sp_thresholdMonitor.trace
-rw-r--r-- 1 pvmadm dba     5836 Sep 25 12:22 SystemHealthMonitor.out

```

Setting the Trace Level To Include Maximum Information

Set the trace level to 10 to include maximum information.

```
cd [install directory]/server/etc/agentconfig
```

```
vi <trace file name>
```

Sample output:

```

LocalSnmpEngID =                ; Local Snmp Engine ID
interCollectionInterval=60      ; time between collections in seconds
ifErrorResendOneByOne = true    ; If resend get request one by one
numOfActorThread = 8           ; set number of threads in thread pool
numOfSNMPEngine = 24           ; num SNMP engine
traceLevel = 2                 ; trace level for the trace file
maxLoadPerAgent = 24           ; the maximum number of NAMs supported by an agent
alarmPollInterval = 60         ; Poll interval in seconds for detecting
alarm entry changes
enableTimeMark = true          ; Enable data collection by timemark feature
hostBufferSize = 1000          ; Host ID and Address buffer size, range 1000-9000
maxBulkResponseSize = 70000    ; Maximum number of entries in a GETBULK response

```

Set the traceLevel parameter to 10 and save the configuration file.

Viewing the Trace File Contents

Re-start the Cisco PVM application and allow the components to run for a few minutes in order to collect some messages in the trace file.

