PVLmon v3.0

for HP OpenView

Performance Insight

PVLmon

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Introduction

The purpose of this manual is to provide detailed information on the operation and administration of PerVigil's Application Fault Detection and Monitoring product, PVLmon. PVLmon is a software product that provides comprehensive analysis of the operational aspects of systems and applications for the purpose of identifying operational problems and notifying administrators of those problems. PVLmon is available for many Unix and Windows (NT and 2000) platforms.

By deploying PVLmon to each application server, you can dramatically improve the stability of your application environment and eliminate many unpleasant surprises that can simmer for hours or days before you become aware of them.

PVLmon rapidly identifies problems with the operation of the application and notifies you by pager and e-mail so that you can take quick corrective action before end-users are impacted. Data loss can be minimized and delays in report delivery eliminated because problems are identified and resolved quickly.

Configuring PVLmon for different applications, installing on Unix and Windows NT and 2000, and recent release notes are detailed in this manual.

Documentation Revision

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Jan 12, 2001	1.0	Craig Rees	Initial version
Mar 30, 2002	2.0	Craig Rees	Updated to use configuration files
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PVLmon -
Application Monitoring
For OV-Performance Insight (OVPI)

Are all of my OVPI servers operating as expected?

What about my OVPI collection and rollup processes?

Am I having any problems with my OVPI database?

If PVLmon is not running on all of your OV-Performance Insight (OVPI, formerly TREND) servers, these thoughts probably cross your mind several times as you make your way to the office each morning.

PVLmon performs comprehensive analysis of many operational aspects of OVPI and notifies administrators by e-mail and pager if exceptions occur. By deploying PVLmon to each OVPI server, you can dramatically improve the stability of your OVPI environment and eliminate many unpleasant surprises that can simmer for hours or days before you become aware of them.

PVLmon rapidly identifies problems with the operation of OVPI and notifies you by pager and e-mail so that you can take quick corrective action before end-users are impacted. Data loss can be minimized and delays in report delivery eliminated because problems are identified and resolved quickly.

Once per hour, PVLmon performs a comprehensive analysis of OVPI's operation. If exceptions are found, pages and e-mails are sent to the OVPI Administrator and all other recipients listed in the PVLmon Pager and E-Mail notification files. PVLmon notification can be easily defined to notify specific users or groups during certain time periods to match work shifts and on-call rotations.

In addition to hourly analysis, once per day, PVLmon e-mails a comprehensive summary of critical functions to recipients. This log file contains status information about each step of the rollup process as well as the size of each data table and the latest timestamp in the data collection tables. This information provides a complete operational health report for the OVPI server and enables the OVPI administrator to quickly review the operation of OVPI and identify any issue that may need attention.

PVLmon can launch an API call to various Trouble Ticket systems and other related applications. This feature launches an API call to generate a trouble ticket within the user's trouble ticket system when errors are detected. The resulting trouble ticket is populated with the corresponding error from the application being monitored by PVLmon.

PVLmon should be run on all systems that are running any OVPI modules. OVPI servers typically perform different roles in a distributed deployment. PVLmon can easily be configured on each server to monitor the appropriate OVPI modules for that server.

Many aspects of PVLmon can be configured for your specific needs including which operational checks to perform and threshold values for user notification for each operational check.

PVLmon Monitors:

OVPI Rollup Processes

PVLmon analyzes rollup results searching for errors related to the startup and successful completion of rollup processes:

trend_sum
trendcopy
db_delete_data

OVPI Processes Verification

PVLmon verifies that vital OVPI processes are running and provides a list of all OVPI related processes that are running at that time.

Application Port Status

PVLmon verifies that ports (network sockets) are available and accepting connections:

Sybase
TRENDweb Gateway
TRENDweb Server
TREND Database Connector

File System Capacity

PVLmon monitors filesystem space on all UFS, VXFS (Veritas), and TMPFS filesystems to confirm that the percent of space used on each filesystem is not greater than 80% of its capacity. Other filesystems like mounted CD/ROM's and remote mounted directories are not checked.

OVPI License Failures (OVPI v4.5 and earlier)

PVLmon verifies the operation of OVPI License Manager and identifies OVPI license startup problems that are caused by connectivity problems with the License Manager.

OVPI Database Errors & Warnings

PVLmon monitors Oracle/Sybase database operation by searching for database related errors and warnings that occurred during the current day and hour.

OVPI Database Functions

PVLmon analyzes the operation of the database, provides status information to the administrator, and notifies the administrator of exceptions. The following database checks are performed:

Database is operational.
Pollers are operating as expected.
Collected data is rolled to Rate level.
Data is summarized to higher levels.
Size of all OVPI database tables and segments.
Database size within a reasonable level.
Transaction log and Temp space used.

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1. Introduction

The purpose of this user guide is to provide detailed information on the operation and administration of PerVigil's Application Monitoring product, PVLmon. PVLmon is a software product that provides comprehensive analysis of the operational aspects of systems and applications for the purpose of identifying operational problems and notifying administrators of those problems. PVLmon is available for many Unix platforms and Windows (NT and 2000).

PVLmon is a stand-alone application that notifies application and system administrators when problems develop with the applications being monitored. The current version of PVLmon sends alerts via pager, e-mail, and by generating trouble tickets within supported systems. PVLmon is not an SNMP agent and does not generate SNMP traps, at this time. A future release will provide trap generation capabilities. PVLmon can be easily customized to launch API (Application Program Interface) calls to additional Trouble Ticket systems and other related applications.

Applications and systems administrators can use PVLmon to augment existing applications and systems management tools that may be in place. For the administrators who are responsible for the operation and availability of applications, there are many advantages to using PVLmon. With PVLmon, they are able to control how applications are monitored as well as how and when alerts should be sent and who should by notified.

PVLmon can also launch API (Application Program Interface) calls to various Trouble Ticket systems and other related applications. If activated and upon discovery of an error, a customized API will be launched and the user's trouble ticket system will be populated with the corresponding error from the application being monitored by PVLmon.

PVLmon can be used to monitor virtually any application running on a supported platform. The examples used in this document demonstrate how PVLmon is used to monitor the HP's OV Performance Insight (OVPI formerly TREND) product from Hewlett-Packard (HP). A configuration file is used to configure PVLmon to monitor specific aspects of applications. Configuration files are provided for several versions of HP's OVPI product. These configuration files can be modified as needed to monitor specific deployments of those applications or to create new configuration files to enable monitoring of other applications.

Many aspects of systems and applications can be monitored, including:

- Confirm that required daemons and processes are up and running.
- Confirm that network ports are accepting connections.
- Confirm that applications and databases are operational and accepting connections.
- Identify filesystems that have crossed a capacity threshold.
- Analyze database operation for the following:
  - The database is online and available.
  - Specific tables contain data with the appropriate timestamps.
  - Track the size and growth of specific database tables.
  - Identify databases that have crossed a capacity threshold.
- Examine log files to confirm successful process completion.
- Search log files for errors, warnings, return codes, and other conditions.

By using the default PVLmon configuration files for OVPI, the following analysis is performed on that application:

1. Checks the OVPI modules used in rollup and data management to confirm that they have run to successful completion and identifies errors if any (TRENDsum, TRENDcopy, db_delete_data …).
2. Examines the OVPI Database (Oracle/Sybase) log file to identify errors/warnings associated with the operation of the database. Oracle log checking is divided into e-mailing on just warnings, but paging on major error codes and critical error codes.
3. Confirms that the necessary OVPI processes are running such as OVPItimer and other critical OVPI processes.
4. Checks Port Status to verify that network socket ports are open and available for Sybase, OVPIweb, and other listening applications.
5. Verifies File System Capacity and confirms that OVPI related partitions are not above 80% capacity.
6. Examines OVPI Database Statistics to verify:
   - OVPI database is on-line and running.
   - OVPI pollers are operating as expected.
   - Raw data is collected and converted to Rate data as expected.
   - Specific Summary tables have been updated with recent rolled up data.
   - Tracks the size and growth of all the OVPI database tables.
   - Overall Database size and Segment size does not exceed 80% capacity.

PVLmon performs this analysis once per hour. If exceptions are found, PVLmon pages the application administrator and all other recipients listed in the PVLmon Pager notification file.

Once per day, normally at the conclusion of the nightly rollup process, PVLmon is initiated with options for generating a report summarizing the condition of critical functions. This report is then sent via e-mail to the recipients listed in the PVLmon E-Mail_Pager notification file. This report contains status information about each step of the rollup process as well as the size of each data table and the latest timestamp in the data collection tables. This report provides comprehensive insight into the operational health of the OVPI server and enables the administrator to quickly assess the condition of OVPI and identify issues that may need to be addressed.

2. Monitoring Applications with PVLmon

PVLmon should be run on all systems that are running any part of the application to be monitored. Throughout this document examples are used that refer to monitoring HP's OVPI and OVPIweb modules. Like many applications, OVPI servers typically play different roles in a distributed deployment. PVLmon can be easily configured on each server to monitor only the modules residing on that server.

PVLmon uses a Configuration file which is separated into logical sections so that it can be easily tuned and tweaked as needed. Each section can be removed or disabled by commenting out the section with "**#**" (pound signs). A section should be disabled if the system where PVLmon is located does not provide the functionality monitored by that section. Sections can also be temporarily disabled if enhancements or testing are being performed. For example, when installing PVLmon to monitor an OVPIweb Reporting Server that does NOT have the OVPI application installed on it, only sections that monitor OVPIweb processes, ports, and file system capacity should be enabled. All other sections can be removed or disabled (commented out).

2.1. Process Verification

PVLmon verifies that vital OVPI processes are running and provides a list of all OVPI related processes using the PerVigil *pstrend* command.

- trendtimer
- Database Application processes for Oracle and Sybase (i.e. 1 Sybase Dataserver per CPU allocation).
- jrun, jre, and java processes for OVPIweb and Application Reporting
- any other desired process to monitor (optional)

If the "-p" option is used and errors are found, a pager message of "Check OVPI Processes on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/ PVLmon/etc/PVLmon_Email_Pager.List*.

2.2. Check Port Status

PVLmon verifies that network ports (sockets) are accessible to OVPI and Oracle or Sybase:

- 1521 – for Oracle on Unix and Windows and also 2030 for Oracle on Windows
- 2052 – for Sybase on Unix and 5000 for Windows
- 4200 – optional Sybase Backup Server
- 80 – HTTP access to Application Server
- 443 – optional SSL to Application Server

If the "-p" option is used and PVLmon fails to open the port, a pager message of "Check Port NNNN on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*.

2.3. File System Capacity

PVLmon monitors filesystem space using the Unix "*df –k*" command (*bdf* for HP-UX) on all UFS, VXFS (Veritas), and TMPFS filesystems. The output of this command is checked to confirm that the percent of space used on each filesystem is not greater than 80%. Other filesystems like mounted CD-ROM's and remote mounted directories do not need to be checked.

After a filesystem exception is identified and processed, PVLmon will NOT send additional alerts on the same problem as long as the percentage of filesystem used does not increase any further, even though it is still above the threshold value. Additional errors will only be generated if PVLmon detects that the percentage of the filesystem used has increased since the exception was initially identified. This prevents excessive notification of the recipients in the Pager list. However, the daily e-mail log will contain WARNING messages indicating that the filesystems usage still exceeds the threshold value.

If the "-p" option is used and errors are found, a pager message of "Check Filesystem Size on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*.

2.4. Database Statistics

PVLmon returns the following database related information for the default OVPI database of "dpipe_db":

- Latest timestamp of collected data in the Rate polling tables and Summary tables.
- The current date for visual comparison with the timestamps mentioned above and detection if the threshold value between the timestamps has been exceeded.
- Size and row count of all OVPI database tables.
- Percentage full of the OVPI database (dpipe_db) and the Transaction Log.

For other databases like "temp", the "percentage full" maybe the only statistic returned.

If the "-p" option is used and the database is larger than 80%, a pager message of "Check OVPI Database Size of nn% on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*.

If the "-p" option is used and latest timestamp (max(*ta_period)*) for collected or summarized data on the OVPI Server is older than NN minutes from the current date, a pager message of "Check Pollers on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*.

Typically the threshold is 60 minutes for R2D Rate tables, 300 minutes for Hourly (if rolled hourly and 3500 minutes for Daily tables. The threshold for Rate data on Central Servers are typically set to 300 minutes because data collected by Satellite Servers is forwarded to the Central Server periodically in a batch mode.

2.5. Database Application Errors/Warnings in the Database Log File

If the "-p" option is used and errors are found, a pager message of "Check Database error of NNNN on <hostname>" is sent to all the recipients in the *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*.

2.5.1. Oracle Errors/Warnings in the Alert Log File

PVLmon monitors the Oracle database operation by examining the alert log file for "ORA-" errors and warnings. Oracle log checking for "ORA-" message are divided into e-mailing on just warnings, but paging (which also includes and e-mail) on major error codes and critical error codes.

Please review the Oracle Config file (*AMON_Default.Config_[Unix|Win32]_v5.0_Oracle*) in the *{PERVIGIL_HOME/PVLmon/etc* directory for all monitored "ORA-" messages.

2.5.2. Sybase Errors/Warnings in the Error Log File

PVLmon monitors Sybase database operation by examining the error log file for "error" and "warn" messages for the current day.

The following common warnings are excluded:

- 1608 - common TRENDweb exit warning
- 1132 - common polling database warning with PVLmon
- 1142 - common polling database warning with PVLmon

2.6. License Access Failures (Only OVPI v4.5 and earlier)

PVLmon monitors the OVPI License Manager by examining the *$TREND_LOG/trend.log* file looking for "license failure", "license down", and "license expired" messages.

If the "-p" option is used and errors are found, a pager message of "Check OVPI License Failure on <hostname>" is sent to all the recipients in the *$DPIPE_HOME/ PerVigil/ PVLmon/etc/PVLmon_Email_Pager.List*.

2.7. Process Completion Status

A typical example of monitoring process completion status would be confirming that OVPI rollup processes have completed successfully.

Using the default PVLmon configuration file for OVPI, PVLmon monitors rollup processing by examining the *$TREND_LOG/trend.log* file looking for the following:

- db_delete_data
- trendit (Only OVPI v4.5 and earlier)
- trendstep (Only OVPI v4.5 and earlier)
- trend_sum
- trendrank (Only OVPI v4.5 and earlier)
- trendcopy

If the PerVigil utility of "*timeit*" is being used, the *$TREND_LOG/Time.log* file is also examined looking for Return Code statuses that are NOT "0". A Return Code value of "0" is expected for normal operation and completion of processes initiated by the "*timeit*" program. This step identifies processes that terminated with return codes other than 0.

By default, if a rollup error is encountered (normally in the middle of the night), the error will be flagged in the log output, but no pager notification will be sent. The OVPI administrator should carefully review the morning e-mail log output for potential errors and take corrective action if necessary.

3. Using PVLmon

PVLmon is a low-overhead "command line" application for Unix and Windows (2000 and NT v4.0). By design, PVLmon uses minimal system resources. For example, a command line interface is used instead of a more resource intensive graphical user interface (GUI). As a result, PVLmon has little or no performance impact on the server when monitoring an application. PVLmon can be installed on Production Servers without concern of the impact on other applications.

PerVigil uses Cygwin by Red Hat, Inc. for Windows to provide a Unix shell environment on Windows servers. Like PVLmon, Cygwin requires very minimal system resources. Please refer to the Release Notes for more detailed information on Cygwin.

3.1. PVLmon Usage and Command Line Options

The options for PVLmon at the command line are:

pvlmon [-i] [-e | -ef] [-p | -pf] [-h | -?] [-V] [-d | -dd]

-i **<Input_Configuration_Filename>**
Full pathname to an alternate configuration file. Default Config file is *$PERVIGIL_HOME/PVLmon/etc/AMON_Default.Config*

-e Send E-mail of the Log and print to stdout (standard output) regardless if an error is found. Default E-mail file is *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*

-ef **<Email_Pager_List_Filename>**
Send E-mail and/or Pages using Filename of alternate list of recipients. Use this option if the work environment has multiple shifts of Administrators responsible for the maintenance of OVPI. (I.e. 24-hours/day operation with 3 working shifts.)

-p Send Pages and E-mail upon finding an error, and print to stdout. Default Pager file is *$PERVIGIL_HOME/PVLmon/etc/PVLmon_Email_Pager.List*

-pf **<Email_Pager_List_Filename>**
Same as the "**-ef**" option. Previous to PVLmon v2.1, there were separate files for E-mails and Paging. Now it is the same file.

-h / **-?** Prints out this help page

-V / **-v** Prints out the Version and Build of PVLmon

-d / **-dd** Prints out debug or detailed debug information to stdout

PVLmon is designed to run on a scheduled basis as often as necessary. However, it should be run when database access activity is relatively low. For example, a good time to run PVLmon is after a polling cycle has completed (i.e. 59 minutes after the hour).

Using **pvlmon** with no options displays output on the user's screen. The user can then scroll through the output looking for errors, which are clearly marked.

The option **pvlmon -e** displays output on the user's screen and also e-mails all recipients in the PVLmon E-mail_Pager notification file. The user can then scroll through the e-mail looking for clearly marked errors.

The option **pvlmon -p** displays output on the user's screen and if any exceptions are found, pages all recipients in the PVLmon E-mail_Pager notification file with a notice to research the exception. E-mail is also sent to all recipients in the PVLmon notification file. The e-mail includes the complete PVLmon log output and a subject field that states that an error has occurred.

3.2. Automating PVLmon

The default installation schedules PVLmon to run at 59 minutes after every hour (**pvlmon -p**) and once daily just before 8am (**pvlmon -e**). PVLmon uses CRON to perform the scheduling which is a standard process scheduling tool for Unix and Cygwin. PerVigil chose CRON to automatically schedule PVLmon verses OVPI's trendtimer process for Unix and Windows or the default Windows scheduler. CRON has the ability to schedule processes anytime of minute, hour, day, week, month, ... PVLmon should not be launched by a process that it in itself is monitoring. Launching PVLmon from trendtimer would violate that guideline.

The CRON schedule (called Crontab) for PVLmon can be edited by typing in the following at a Unix or Cygwin command prompt:

setenv EDITOR vi	(if necessary on some Unix logins)
crontab -e	(**crontab -l** just lists the schedule)

The default Crontab entries for PVLmon are listed below. Notice that all entries are commented out. When PVLmon is fully configured and ready for production, uncomment the entries in the Crontab file so PVLmon will be initiated every hour (forth line) and once per day (third line). A little knowledge of the "**vi**" editor is required so please refer to the PVLmon Install Guides for instructions.

```
# Run PVLmon every hour (page) and every day (email) after rollups (7:54am)
# or at the end of the day (11:54pm) looking for potential OV issues.
#59 * * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -p > /dev/null 2>&1
# Creates a daily PVLmon report after the morning rollups
#54 7 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Creates a daily PVLmon report for the entire day
#54 23 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Archive and compress the PVLmon daily log file
0 0 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlarchivelog.sh {PERVIGIL_HOME}/Log/
PVLmon_Archive.log
```

NOTE: If the file of "*cron.allow*" exists in either */etc/cron.d*, */var/adm/cron*, or */usr/lib/cron*, login as 'root' and edit the file and add a line at the bottom containing '**trendadm**'. This is required to allow the *trendadm* user to use the CRON utility.

3.3. Output Distribution

PVLmon output is displayed via stdout and recorded to a default log file when run from the command line. The default log file location and name is:

$TREND_LOG/PVLmon.log

PVLmon is normally executed via Cron by entries in the *trendadm* user's crontab file. If the "-p" option is used and an error is discovered, a short e-mail message is sent to a text pager or cell phone pager (i.e.: <phone_number>@<service_provider>.com). One or more of the following strings are included in the message:

From:	<Company Name/Initials>_PVLmon
Subject:	OVPI Error on <hostname>
Message:	Found 1 trend_sum.*Error.* in trend.log
	Found 1 No Licenses in trend.log
	Found 1 License server is down in trend.log
	Found 1 find "Error" not [1131| 1142| 1608| Continue processing] …
	Check Process <process_name>, not running
	Check Filesystem of <fs>, has grown to <NN%>, the threshold value is <YY%>
	No service running on port <hostname>:<port_num>
	The database table <table_name> is not found
	The database table <table_name> exists but contains no data
	Data in <table_name> is NN minutes old, MAX ta_period is <time_stamp>
	Check Database of dpipe_db, has grown to NN% above the threshold value of YY%

3.4. Archive Logging

The *PVLmon.log* is overwritten each time PVLmon executes. When **pvlmon** execution has completed, the newly created *PVLmon.log* file is concatenated to the end of the *PVLmon_Archive.log* file for historical tracking. The archive log file can be maintained daily by adding the following syntax to the *trendtimer.sched* file. The **pvlarchivelog.sh** process will make a daily backup and compress the archive file with a naming convention of *PVLmon_Archive.log.<day_of_week>.gz*. Each day, **pvlarchivelog.sh** replaces the archived log file for the same day of the previous week, with the new log file. **pvlarchivelog.sh** is called from CRON on both Unix and Windows servers.

If desired, the pvlarchivelog.sh program can be modified with the vi editor to turn on a compression utility of either "compress" or "gzip".

3.5. PVLmon Support Files

Below is a list of files required by PVLmon. These files are located in the *{PERVIGIL_HOME}/PVLmon/...* directories.

1. **bin/pvlmon.sh** Startup program for PVLmon. During installation, this file might need to be edited to correctly set environment variables if non-default directory paths were using during the install process. This file is linked to *$DPIPE_HOME/bin/pvlmon*. See Installation Instructions below in Chapter 5.
2. **bin/ps.exe** Windows NT only. PS command to display the running processes.
3. **bin/show_OracleLog.sh** Displays any messages in the Oracle alert log file with today's date.
4. **bin/show_SybaseLog.sh** Displays any messages in the Sybase error log file with today's date.
5. **bin/pvlarchivelog.sh** Archives and compresses (if compression is enabled after install) the PVLmon_Archive.log file daily at midnight by changing the log file to include the day of week at the end of the filename. Daily archived log files are overwritten every seven days. **pvlarchivelog.sh** is called by a crontab process.
6. **etc/AMON_Default.Config** PVLmon's default Configuration file. During installation, this file must be edited to the implementation and configuration of OVPI. See PVLmon Configuration File below in Chapter 4. The *etc* directory is also the home of other default Config files for TREND v3.6, v4.0, and OVPI v4.5, v4.6, v5.0 for Unix and Win32. Any one can be copied into place as *AMON_Default.Config* or used as is with the **pvlmon -i** option.
5. **etc/AMON_SingleUserMode.Config** A copy of the production version of PVLmon's default Configuration file for Sybase, but with the CHECK_TABLE and CHECK_DB sections modified. PVLmon will check the OVPI database to see if it is in Single-User mode and if so, runs "*pvlmon -i AMON_SingleUserMode.Config*" instead. This Configuration file will not connect to the OVPI database. See the Installation Instructions below on how to set this up.
6. **etc/PVLmon_Email_Pager.List** PVLmon's "-e" and "-p" options sends the output log file to be e-mailed and a short text page to be sent to all addresses (recipients) listed in this file. The e-mail addresses and pager numbers of the OVPI Administrator(s) and any other persons responsible for maintaining OVPI should be included in this file.
7. **lib/*** PVLmon internal binary JAR files. (Do NOT touch or modify)
8. **tmp/*** PVLmon temporary files used to track filesystem and database usage. (Do NOT touch or modify)
9. **../Docs/*** PVLmon documentation (User's Guide, Release Notes, PVLmon Install Guides (READMEs), and Cygwin Install Guide (Windows Only).

4. Configuring PVLmon

Configuring PVLmon to monitor any application consists of:

- Configuring the PVLmon default Config file.
- Configuring the PVLmon E-mail_Pager file.
- If required, configuring the PVLmon API to access a trouble ticket system.

4.1. PVLmon Configuration File

The PVLmon Configuration file is divided into sections that monitor and process different aspects of the application being monitored. Each section can be removed or commented out as the user sees fit. Each section can also be modified as necessary to include/exclude any part of the application monitoring.

The configuration file has 3 columns for easy reading and modification.

```
#=============================================================================#
# Variable Name  =  Value of Variable         # Comment                      #
#=============================================================================#
```

The Variable Name column defines the section that PVLmon will process. The possible options are:

Variable Name	Definition
AMON_*	Defines the various PVLmon startup variables (i.e. log path, location of default config file, E-mail_Pager file, …).
HEADER	Prints a header using the supplied text in a banner as shown above. (#=====…)
EXEC	Executes an O/S command from outside of PVLmon and displays the results to stdout and the log file.
CHECK_LOG	Checks a log file (any log file) using the supplied “search_string”, time stamp, and logging option (see below).
CHECK_PROCESS	Checks the O/S to see if the supplied process is running.
CHECK_PORT	Checks the O/S to see if the supplied ports (network sockets) are available and open.
CHECK_FS	Checks the O/S to see if the supplied filesystem is available and if the utilization is below the supplied threshold value.
CHECK_TABLE	Checks the database to see if the supplied table is available and the max time the data was added is below the supplied threshold value.
CHECK_DB	Checks the database to see if it is available, the sizes and row counts of the tables, and if the utilization is below the supplied threshold value.

The order of the sections in the config file determines the order of the output in the PVLmon log file.

The default config file is $*PERVIGIL_HOME/PVLmon/etc/AMON_Default.Config* and will vary in content between Unix and Windows and between OVPI (TREND) v3.6, v4.0, v4.5, v4.6, and v5.0 (for Oracle and Sybase).

Explanation of Logging Options:

All "CHECK_XXXXXX" and "EXEC" commands have logging options as the last configurable option. This logging option tells PVLmon where to direct the output for the user. By default, the output always goes to stdout (Standard Output, the screen) and the log file.

Available logging options:

P = Send a page and an e-mail containing the full log file if PVLmon detects a condition has been found from the search string. I.e.:

```
,trend_sum.*Error,MMM dd HH:,P
,No licenses,MMM dd HH:,P
,License server is down,MMM dd HH:,P
```

Normally pages should only be sent when searching at the hourly level and not the daily level. Otherwise everyone in the pager list will receive a page when the error occurs and every hour after that until midnight.

If paging is done at the daily level, a process should be put in place to either modify or truncate the log file when the issue has been resolved.

E = Send an e-mail of the full log file upon completion of PVLmon. Great for reviewing a Server's status after rollups and at the end of the day.

B = Send an E-mail regardless of errors and a page upon finding an error.

L = Log only the output to the log file and ignore any potential errors.

T = Send a Trap. *To be implemented in the next release*.

4.1.1. PVLmon Startup Variables

Sample section:

```
#=============================================================================#
# Define PVLmon Startup Variables
#
AMON_COMPANY   = <Company_Name>             # Unique/short company name/initials
AMON_DIR       = {PERVIGIL_HOME}/PVLmon     # Path of PVLmon install dir
AMON_CONTACTFILE = {PERVIGIL_HOME}/PVLmon/etc/PVLmon_Email_Pager.List # Contact list
AMON_MAIL_SERVER = mail.<Mail_Server>.com   # Name of the email server
#AMON_DATABASE_INFO = {HOSTNAME},5000,dsi_dpipe,<password>,{ORACLE_SID} # Alternate DB
```

Definition of Variables:

AMON_COMPANY = <Company_Name/Initials>
Unique and short Company Name or Initials for the E-mail “FROM” Address.

AMON_DIR = <full_PVLmon_install_pathname>
Full pathname of PVLmon install directory. Also $PERVIGIL_HOME (i.e. /opt/PerVigil or C:\PerVigil).

AMON_CONTACTFILE = <full_PVLmon_Email_Pager_pathname>
Full pathname to the PVLmon_Email_Pager.List file that contains all e-mail address and pager numbers of the OVPI Administrators.

AMON_MAIL_SERVER = <default_mail_server>
Default company POP3 mail server, i.e. mail.<Company_Name>.com

AMON_DATABASE_INFO = [<hostname>|<ip address>],<port_number>,
<db_username>,<db_password>,[{ORACLE_SID}]
(Optional) Alternate database to use. Without this line, the default database is:

For Oracle: {ORACLE_SID}, Port 1521 (Unix) and also 2030 (Windows),User dsi_dpipe, and password.

For Sybase: {DSQUERY}, Port 2052 (Unix) or 5000 (Windows),User dsi_dpipe, and password.

4.1.2. Checking Processes

Sample section:

```
#=============================================================================#
# Check if the following processes are running
#
HEADER = Executing PSOVPI . . . . . . . . . . . . . . . . . . . . . . . . . .
EXEC   = tcsh -f {DPIPE_HOME}/bin/psovpi,L    # Run pstrend command
HEADER = Checking for necessary OVPI & Sybase processes . . . . . . . . . . .
EXEC   = {PERVIGIL_HOME}/PVLmon/bin/ps -Ypt,L # Run ps to get system uptime
CHECK_PROCESS = trendtimer,B                  # OVPI Timer process
CHECK_PROCESS = jrun,B                        # OVPI v4.X process
CHECK_PROCESS = piweb,B                       # OVPI v4.6 process

CHECK_PROCESS = ora_smon_{HOSTNAME},B         # Oracle process(es)
CHECK_PROCESS = ora_pmon_{HOSTNAME},B         # Oracle process(es)
CHECK_PROCESS = ora_dbw0_{HOSTNAME},B         # Oracle process(es)
CHECK_PROCESS = ora_lgwr_{HOSTNAME},B         # Oracle process(es)
CHECK_PROCESS = ora_ckpt_{HOSTNAME},B         # Oracle process(es)
CHECK_PROCESS = tnslsnr,B                     # Oracle process(es)
or
CHECK_PROCESS = dataserver,B                  # Sybase process(es)
CHECK_PROCESS = RUN_{DSQUERY},B               # Sybase process
#CHECK_PROCESS = RUN_SYB_BACKUP,B             # Optional Sybase Backup Server
```

Definition of Variables:

EXEC = <command>,<logging_option>

Execute O/S command as if typed from command line. See CHECK_LOG above for logging options.

CHECK_PROCESS = <OS_process_name>,<logging_option>

Check if required processes are running.

4.1.3. Checking Ports

Sample section:

```
#=============================================================================#
# Check if the following ports (network sockets) are available
#
HEADER = Checking for available network sockets (ports). . . . . .

CHECK_PORT = {HOSTNAME}:1521,B              # Unix and Windows Oracle Server
CHECK_PORT = {HOSTNAME}:2030,B              # Also Windows Oracle Server
or
CHECK_PORT = {HOSTNAME}:2052,B              # Unix Sybase Server
#CHECK_PORT = {HOSTNAME}:4200,B             # Optional Sybase SYB_BACKUP Server

CHECK_PORT = {HOSTNAME}:80,B                # HTTP access to Application Server
#CHECK_PORT = {HOSTNAME}:443,B              # Optional SSL to Application Server
```

Definition of Variables:

CHECK_PORT = <hostname>:<port_number>,<logging_option>

Check if necessary ports are open and available. In Unix and Cygwin, these ports can also be verified by typing:

netstat -af inet -n | grep <*port_number*>-for Unix
netstat -a -n | grep <*port_number*> -for Cygwin

4.1.4. Checking Filesystems

Sample section:

```
#=============================================================================#
# Check filesystems for available space
#
HEADER = Checking OVPI related File Systems for available space . . . . . .
EXEC   = df -k,L                            # Run df -k to list disk free space
#EXEC   = bdf,L                             # HPUX df version to list free space
CHECK_FS = /,80,B                           # Check if filesystem > NN%
CHECK_FS = /opt,80,B                        # Check if filesystem > NN%
CHECK_FS = /tmp,80,B                        # Check if filesystem > NN%
CHECK_FS = {COLLECT_HOME},80,B              # Check if filesystem > NN%
```

Definition of Variables:

CHECK_FS = <drive:|mount_point>,<%_threshold>,<logging_option>

Check if OVPI disk space is exceeding threshold value

NOTE: On HP-UX systems, if the lengthy “df –k” output is not desired, comment out the EXEC command and uncomment the next EXEC command.

4.1.5. Checking Database Tables

Sample section:

```
#================================================================================#
# Check the following data tables that ta_period is not older than <NN> minutes
#
HEADER = Checking OVPI Data Tables and max ta_periods . . . . . .
CHECK_TABLE = x_IRifEntry_keys,60,ta_period,B          # Interface Reporting DP
CHECK_TABLE = SRIRDevPorts,60,ta_period,B              # Interface Reporting RP
CHECK_TABLE = SHIRDevPorts,300,ta_period,B             # Interface Reporting RP
CHECK_TABLE = SDIRDevPorts,3500,ta_period,B            # Interface Reporting RP
...
```

Definition of Variables:

CHECK_TABLE = <data_tablename>,<minute_threshold>,<ta_period_column>,
<logging_option>

Check OVPI data table to verify if max timestamp (ta_period) is older than the allowed threshold value. Typically the threshold is 60 minutes for R2D Rate tables, 300 minutes for Hourly (if rolled hourly), and 3500 minutes for Daily tables.

4.1.6. Checking Database Size

Sample section:

```
#================================================================================#
# Check the DataBase for available space
#
HEADER = Checking OVPI Database and Transaction Log space . . . . . .
CHECK_DB = dpipe_db,80,B                    # Check if OVPI database/log > NN%
CHECK_DB = tempdb,80,B                      # Check if TempDB database > NN%
```

Definition of Variables:

CHECK_DB = <db_name>,<%_threshold>,<logging_option>

Check database and transaction log for available space and page if it exceeds the threshold value.

In addition, all OVPI data tables, including Raw-to-Delta, will be listed along with the Number of Rows and Kbytes per table.

4.1.7. Checking Log Files

Sample section:

```
#==============================================================================#
# Check Oracle log file for the following strings
#
HEADER = Checking Oracle log for errors & warnings . . . . . .
EXEC   = sh {PERVIGIL_HOME}/PVLmon/bin/show_OracleLog.sh {ORACLE_BASE}/admin/
{HOSTNAME}/bdump/alert_{HOSTNAME}.log,L  # Show anything in the file with today's
date
CHECK_LOG = {ORACLE_BASE}/admin/{HOSTNAME}/bdump/alert_HOSTNAME}.log,warning,,E #
Show Warnings
CHECK_LOG = {ORACLE_BASE}/admin/{HOSTNAME}/bdump/alert_{HOSTNAME}.log, error,,P #
Show Errors
CHECK_LOG = {ORACLE_BASE}/admin/{HOSTNAME}/bdump/alert_{HOSTNAME}.log,ORA-,,P #
Act upon Oracle Warnings/Errors, see config file for full listing.
or
#==============================================================================#
# Check Sybase log file for the following strings
#
HEADER = Checking Sybase log for errors & warnings . . . . . .
EXEC   = sh {PERVIGIL_HOME}/PVLmon/bin/show_SybaseLog.sh
{SYBASE}/install/errorlog,L  # Show anything in the file with today's date
CHECK_LOG = {SYBASE}/install/errorlog,WARNING,yyyy/MM/dd,L # Show WARNINGs
CHECK_LOG = {SYBASE}/install/errorlog,find "Error" not [ 1131| 1142| 1608|
Continue processing],yyyy/MM/dd HH:,P # Show Errors, but ignore errors caused by
PVLmon & OVPIweb



#==============================================================================#
# Check Time log file for the following strings
#
HEADER = Checking Time.log for Return Codes that are not zero (0). . . . . .
CHECK_LOG = {DPIPE_HOME}/log/Time.log,Status:[^0],MMM dd,L  # Check RCs



#==============================================================================#
# Check OVPI log file for the following strings and errors
#
HEADER = Checking trend.log file . . . . . .
CHECK_LOG = {DPIPE_HOME}/log/trend.log,No licenses,MMM dd HH:,P # Hourly check
  OVPI license
CHECK_LOG = {DPIPE_HOME}/log/trend.log,License server is down,MMM dd HH:,P #
  Hourly check OVPI license
CHECK_LOG = {DPIPE_HOME}/log/trend.log,delete_data,MMM dd,L # Check db_delete's
CHECK_LOG = {DPIPE_HOME}/log/trend.log,trendit,MMM dd,L     # Check TRENDit's
CHECK_LOG = {DPIPE_HOME}/log/trend.log,trendstep,MMM dd,L   # Check TRENDstep's
#CHECK_LOG = {DPIPE_HOME}/log/trend.log,trendstep.*Error,MMM dd HH:,P # Check
  TRENDstep's
CHECK_LOG = {DPIPE_HOME}/log/trend.log,trend_sum,MMM dd,L   # Check TRENDsum's
#CHECK_LOG = {DPIPE_HOME}/log/trend.log,trend_sum.*Error,MMM dd HH:,P # Check
  TRENDsum's
CHECK_LOG = {DPIPE_HOME}/log/trend.log,trendcopy,MMM dd,L   # Check TRENDcopy's
```

Definition of Variables:

HEADER = <header_text_of_new_section>
Print header line with following text

CHECK_LOG = <logfile_full_path>,<search string>,<time_format>,<logging_option>
Check a log file for a given search string.
i.e. <Pathname_of_Log_File> - Full pathname of the log file to check
<String_for_Search> - RegEx string used for search, case sensitive
<Timestamp_Num> - Timestamp for log search, see formats below
<Logging_Option> - P=page, E=email, B=both, L=log only

Explanation of Search Strings:

PVLmon uses standard RegEx (Regular Expression patterns) syntax to search log files. Case in point, when searching for the string of "trendcopy, MMM dd", PVLmon parses through the log file looking for any occurrences that match the supplied time stamp, then search the extracted output looking for the string of "trendcopy".

Search strings like "trendcopy" actually use the RegEx syntax of ".*trendcopy.*". So the search string of "trendsum.*Error" will parse for case sensitive text looking for ".*trendsum.*Error.*", which means any lines in the log file containing the keyword "trendsum", one or more characters, then "Error" will be processed according to the logging options.

The only deviation to this standard is searching for keywords that also do NOT contain extra values. Such as:

```
…,find "Error" not [ 1131| 1142| 1608| Continue processing],yyyy/MM/dd HH:,…
```

will search the log file, first looking for any lines containing the time stamp down to the hourly level, then any lines containing the keyword "Error", but NOT containing keywords of " 1131", " 1142", " 1606", and the string " Continue processing". Any keyword(s) within the syntax of "not [keyword1|keyword2| keyword3]" including leading or trailing spaces, separated by " | " (pipe signs) will be filtered out of the search.

4.1.8. PVLmon Time Format Syntax

To specify the time format, use a time pattern string. In this pattern, all ASCII letters are reserved as pattern letters, which are defined as the following:

Symbol	Meaning	Presentation	Example
G	era designator	(Text)	AD
y	year	(Number)	1996
M	month in year	(Text & Number)	July & 07
d	day in month	(Number)	10
h	hour in am/pm (1~12)	(Number)	12
H	hour in day (0~23)	(Number)	0
m	minute in hour	(Number)	30
s	second in minute	(Number)	55
S	millisecond	(Number)	978
E	day in week	(Text)	Tuesday
D	day in year	(Number)	189
F	day of week in month	(Number)	2 (2nd Wed in July)
w	week in year	(Number)	27
W	week in month	(Number)	2
a	am/pm marker	(Text)	PM
k	hour in day (1~24)	(Number)	24
K	hour in am/pm (0~11)	(Number)	0
z	time zone	(Text)	Pacific Standard Time
'	escape for text	(Delimiter)	
''	single quote	(Literal)	'

The count of pattern letters determines the format.

(Text): 4 or more pattern letters--use full form, less than 4--use short or abbreviated form if one exists.

(Number): the minimum number of digits. Shorter numbers are zero-padded to this amount. Year is handled special; that is, if the count of 'y' is 2, the Year will be truncated to 2 digits.

(Text & Number): 3 or over, use text, otherwise use number.

Any characters in the pattern that are not in the ranges of ['a'..'z'] and ['A'..'Z'] will be treated as quoted text. For instance, characters like ':', '.', ' ', '#' and '@' will appear in the resulting time text even they are not embraced within single quotes.

A pattern containing any invalid pattern letter will result in a thrown exception during formatting or parsing.

Examples Using the US Locale:

```
Format Pattern                          Result
--------------                          -------
MMM dd                            ->>   Jan 22
MMM dd HH:                        ->>   Jan 22 23:
yyyy/MM/dd HH:                    ->>   2004/01/22 23:
"yyyy.MM.dd G 'at' hh:mm:ss z"    ->>   2004.03.09 AD at 15:08:56 PDT
"EEE, MMM d, ''yy"                ->>   Wed, March 9, '04
"h:mm a"                          ->>   12:08 PM
"hh 'o''clock' a, zzzz"           ->>   12 o'clock PM, PDT
"K:mm a, z"                       ->>   0:00 PM, PST
"yyyyy.MMMMM.dd GGG hh:mm aaa"    ->>   2004.March.09 AD 12:08 PM
```

4.2. PVLmon E-Mail and Pager File

The PVLmon E-mail and Pager file is used for listing all necessary e-mail addresses and pager numbers/addresses for the contacts that are responsible for the administration of the monitored application. The default location for the E-mail and Pager file is *$PERVIGIL_HOME/PVLmon/etc /PVLmon_Email_Pager.List*.

Multiple E-mail_Pager files can be used if there are multiple shifts (2 or 3 shifts) throughout the day or if there is an after-hours shift responsible for issues that might arise during the night. Enable this by modifying the crontab entries for "*trendadm*" and adding the required PVLmon executions using the "**-ef**" option and appropriate Email_Pager file for each shift.

Pages are sent as small emails to pagers and other wireless devices capable of receiving e-mail based text pages. PVLmon does not dictate the use of any particular wireless service provider. However, the service used must enable the user to receive short text email messages (less than 100 characters) on a text pager or mobile phone.

A typical pager address would look like:

987654XXXX@<service_provider>.net

The configuration file has 3 columns for easy reading and modification. All entries can be commented out by adding a "#" sign at the beginning of the line when the contact goes on holiday or is not available during a period of time.

The Variable Name column defines the section that PVLmon will process. The possible options are:

Variable Name	Definition
AMON_EMAIL	E-Mail Address of the recipient to receive the PVLmon log file via e-mail
AMON_PAGER	Pager Number/Address of the recipient to receive a PVLmon text page. I.e.: 972XXXXXXX@<provider>.com

Sample section:

```
#=============================================================================#
# Variable Name  =  Value of Variable         # Comment                      #
#=============================================================================#
#
AMON_EMAIL = support@pervigil.com             # PerVigil Support E-mail
AMON_PAGER = 987654XXXX@<provider.com>        # Test pager entry
```

4.3. Configuring an API Launch

PVLmon can launch API (Application Program Interface) calls to various Trouble Ticket systems and other applications. If this feature is enabled, an API call will be launched to generate a trouble ticket within the user's trouble ticket system when errors are detected. The resulting trouble ticket will be populated with the corresponding error from the application being monitored by PVLmon.

The API is customizable and specific usage of this feature will depend on the specific trouble ticketing system in use and how it is implemented. Using this feature may require modification (editing) of the PVLmon startup script of **pvlmon.sh** in the directory of *$PERVIGIL_HOME/PVLmon/bin*.

With the modifications in place, it will require using the "**pvlmon –p**" option to launch the API. Running PVLmon without the "**-p**" option will only display the results to the screen.

Below is an example of populating a Remedy trouble ticket system. This is the section of **pvlmon.sh** that will require editing.

1. Modify **`AMON_APION=0`** and change it to: **`AMON_APION=1`**

2. Modify the **`"Launching PVLmon API"`** section below and insert the appropriate commands from the API application that will call the trouble ticket system and open a ticket with the supplied error message.

```
#=============================================================================#
# Look for "*****ERROR"s in the PVLmon.log and launch API to create a ticket
#
# Turn this section On (1) or Off (0). Default is Off and only works w/ Paging
AMON_APION=0

if [ $AMON_PAGERMODE -eq "1" ] && [ $AMON_APION -eq "1" ] ; then
   AMON_APICNT=0
   AMON_APIIN=`grep "\*\*\*\*\* ERROR" ${AMON_OUTFILE}`
   AMON_APIOUT=`echo ${AMON_APIIN}`
   AMON_APICNT=`grep "\*\*\*\*\* ERROR" ${AMON_OUTFILE} | wc -l`

   if [ ${AMON_DEBUGMODE} = "1" ] ; then
      echo "PVLmon API: ${AMON_APIIN} has ${AMON_APICNT} lines to act upon"
   fi

   if [ ${AMON_APICNT} -gt 0 ] ; then
      echo "Launching PVLmon API"
      # Launch Remedy ARS trouble ticket
      #cp ${PERVIGIL_HOME}/PVLmon/etc/input_file.ars ${PERVIGIL_HOME}/tmp/...
      #echo "9       4       ${AMON_APIOUT}" >> ${PERVIGIL_HOME}/PVLmon/tmp/...
      #/opt/<ARS_Dir>/bin/createARSentry -s <mail_server> -A /opt/<ARS_Dir>/...
   fi
fi
```

5. PVLmon Installation Process

5.1. Prerequisites required before Installation

1. The OpenView (OV) application like Performance Insight (OVPI) and Oracle/Sybase should be installed first. OVPI ReportPacks and/or PerVigil Reporting Modules (PRMs) that are integrated with OVPI should be installed prior to the installation of the PVLmon.

2. For Win2000 and WinNT users, Cygwin (Unix for Windows) must be installed on the OV Server in a directory such as (C:\PerVigil). See the README_Cygwin_Install_Guide to install Cygwin.

3. If required, Java v1.4.2 will be installed only into the PerVigil home directory and will not affect any other Java installed applications. This section can be skipped if OVPI v4.6 or 5.0 is already installed. The Java that is installed along with OVPI v4.6 or v5.0 (Java v1.4.1) can be used instead. At the Command prompt, type "**java -version**" or "**jre**" to determine the version number or if installed at all.

4. Contact PerVigil and obtain a temporary or permanent license file. The license can be e-mailed to you, but you must have a license ready to install before completing this process.

5. If PVLmon was downloaded from PerVigil's Web/FTP site, unTAR the install file into "/tmp/pvlmon_install" and use this directory name in place of <cdrom_drive:>.

5.2. Installing PVLmon

1. Login as the OVPI Admin user of "*trendadm*" on a Unix OVPI Server or as "*Administrator*" on a Windows OVPI Server.

2. Change directory to the mounted PerVigil CD-ROM directory. Mount the CD first if your O/S does not automatically do this.

   i.e. **cd /cdrom/cdrom0** or **cd /cdrom**

   or **cd D:** or **cd E:**

3. For Win32, installing PVLmon is a two step process. First install Cygwin for Windows (please refer to the README_Cygwin_Install_Guide) while logged in as "*Administrator*", then install PVLmon (please refer to the README_PVLmon_Win32_Install_Guide).

4. Follow the installation steps detailed in the Unix or Win32 install text file of: README_PVLmon_<platform>_Install_Guide. To view the install guides, use "**more**" for Unix and "**WordPad**" for Win32.

5. For Sybase, a check has added to PVLmon to see if the database is in single-user mode and if so, will automatically run "**pvlmon -i AMON_SingleUserMode.Config**" instead. This Configuration file will not connect to the OVPI database and is simply a copy of the primary PVLmon config file of: “AMON_ Default.Config” but has the CHECK_TABLE and CHECK_DB sections removed or commented out as follows:

```
#=============================================================================#
# Check the following data tables that ta_period is not older than <NN> minutes
#
HEADER = The OVPI database of dpipe_db is in Single-User Mode. . . . . .


#=============================================================================#
# Check the DataBase for available space
#
HEADER = The OVPI database of dpipe_db is in Single-User Mode. . . . . .
```

To create the “AMON_SingleUserMode.Config” file on Unix and Win32, perform the following steps once PVLmon is ready to be put into production:

- Login as “trendadm” for Unix or “Administrator” for Win32
- cd ${PERVIGIL_HOME}/PVLmon/etc
- cp AMON_Default.Config AMON_SingleUserMode.Config
- vi AMON_SingleUserMode.Config -and modified the CHECK_TABLE and CHECK_DB sections as shown above.

5.3. Uninstalling PVLmon

1. Login as the user of "*trendadm*" for Unix or "Administrator" for Win32 on the OVPI Server.

2. Change directory to the OVPI application home directory or type the alias of "pd".

   cd $PERVIGIL_HOME

3. Remove the directory of the PVLmon application.

   rm –r PVLmon

   rm –r $DPIPE_HOME/bin/pvlmon

4. If PVL_Utilities are installed, modify the ***$DPIPE_HOME/lib/trendtimer.sched*** file and remove or comment out the following line in the file that automatically performs the log file archive (backup) process.

   24:00+24:00 - - {DPIPE_HOME}/bin/log_backup -f {DPIPE_HOME}/log/Time.log

5. Use crontab to remove the Hourly and Daily PVLmon schedules. Remove the following like entries in *trendadm's* crontab file using **crontab –e**

   59 7 * * * {DPIPE_HOME}/bin/pvlmon -e > /dev/null 2>&1
   59 * * * * {DPIPE_HOME}/bin/pvlmon -p > /dev/null 2>&1

NOTE: To uninstall Cygwin for Windows, please refer to the last section in the README_Cygwin_Install_Guide.rtf document.

NOTE: It is not necessary to uninstall the PerVigil Utilities and Aliases that were installed with PVLmon. They are standalone and not dependant on PVLmon, only OVPI.

A. Sample PVLmon Report

```
#===========================================================================#
#                              PVLmon  v3.0                                  #
#                         Powered By PerVigil, Inc.                         #
# Copyright: 2000-2004 PerVigil Inc. (www.pervigil.com) All rights reserved. #
#===========================================================================#
PVLmon Started on: Thu Mar 25 23:59:01 CST 2004


#===========================================================================#
# Executing PSTREND . . . . . . . . . . . . . . . . . . . . . . . . . . . . #
#===========================================================================#

     UID   PID  PPID  C    STIME TTY      TIME COMMAND

OVPI Admin Processes ====================================================
trendadm  1346     1  0   Feb 17 ?        0:02 {DPIPE_HOME}/bin/trendtimer -s
{DPIPE_HOME}/lib/trendtimer.sched
trendadm 22477 22376  0 23:59:00 ?        0:00 sh -c
/opt/OVPI/PerVigil/PVLmon/bin/pvlmon.sh -p

Database Application Processes ==========================================
  sybase  1547     1  0   Feb 17 ?        0:00 {SYBASE}/install/RUN_OVPISRV1
  sybase  1548  1547 24   Feb 17 ?      945:22 {SYBASE}/bin/dataserver -s OVPISRV1 -e
{SYBASE}/app/master/master.dat
  sybase  1554     1  0   Feb 17 ?        0:00 {SYBASE}/install/RUN_SYS_BACKUP
  sybase  1555  1554  0   Feb 17 ?        3:02 {SYBASE}/bin/backupserver -S SYS_BACKUP
-e {SYBASE}/install/SYS_BACKUP
  sybase  1567  1548 25   Feb 17 ?      715:11 {SYBASE}/bin/dataserver -ONLINE

OVPIweb Processes ========================================================
    root  2184     1  0  Mar  3  ?        380:15 /opt/OVPI/jrun/bin/jrun -nohup -start
piweb
trendadm  3048  3039  0 18:55:00 ?         0:06 /opt/OVPI/jre/bin/PA_RISC2.0/java icmp
-i 5 -c icmp
trendadm  3086  3068 36 18:59:00 ?         0:00 /opt/OVPI/jre/bin/PA_RISC2.0/java -
classpath /opt/OVPI/PerVigil

OVPI Data Collection Processes ==========================================
trendadm 12308 12307  0 22:45:06 ?        0:00 {DPIPE_HOME}/bin/trend_discover -t

OVPI Rollup and Reporting Processes =====================================

OVPI Database/Data Processes ============================================
trendadm 11442  1346  0 21:00:05 ?        0:00 /bin/ksh {DPIPE_HOME}/bin/timeit
{PERVIGIL_HOME}/PVLbackup/PVLbackup.csh
trendadm 11460 11442  0 21:00:05 ?        0:00 /bin/csh -f {PERVIGIL_HOME}/PVLbackup
/PVLbackup.csh

Done on:  Thu Mar 25 23:59:02 CST 2004
```

```
#=========================================================================#
# Checking for necessary OVPI & Database Application processes. . . . . #
#=========================================================================#

Process: trendtimer is running on OVPISRV1
Process: jrun is running on OVPISRV1
Process: piweb is running on OVPISRV1

Process: ora_smon is running on OVPISRV1
Process: ora_pmon is running on OVPISRV1
Process: ora_dbw0 is running on OVPISRV1
Process: ora_lgwr is running on OVPISRV1
Process: ora_ckpt is running on OVPISRV1
Process: tnslsnr  is running on OVPISRV1
```

or

```
Process: dataserver is running on OVPISRV1
Process: RUN_OVPISRV1 is running on OVPISRV1
Process: RUN_SYB_BACKUP is running on OVPISRV1


#=========================================================================#
# Checking for available Network Sockets (Ports). . . . . . . . . . . . . #
#=========================================================================#

Service is running on port {HOSTNAME}:1521
Service is running on port {HOSTNAME}:2030
```

or

```
Service is running on port {HOSTNAME}:2052
Service is running on port {HOSTNAME}:4200

Service is running on port {HOSTNAME}:80
Service is running on port {HOSTNAME}:443


#=========================================================================#
# Checking OVPI related File Systems for available space. . . . . . . . . #
#=========================================================================#

Filesystem            kbytes    used   avail capacity  Mounted on
/proc                      0       0       0     0%    /proc
/dev/md/dsk/d2       2056211   86521 1908004     5%    /
/dev/md/dsk/d8       4131866  788077 3302471    20%    /usr
fd                         0       0       0     0%    /dev/fd
/dev/md/dsk/d11      2056211   67705 1926820     4%    /var
swap                 2535824    5496 2530328     1%    /tmp
/dev/vx/dsk/dg/local 4194304  452200 3712896    11%    /usr/local
/dev/vx/dsk/trend    4194304 1547056 2626608    38%    /opt/OVPI
/dev/vx/dsk/sybase   4194304  778824 3388808    19%    /opt/Sybase
/dev/vx/dsk/sybdb   50331648 40967824 9290672   82%    /opt/Sybase/DB
/dev/vx/dsk/sybtl   13209600 8194672 4975760    63%    /opt/Sybase/TransLog
/dev/vx/dsk/sybtdb  13209600 12300400  902104   94%    /opt/Sybase/tempDB
/dev/vx/dsk/dump   106685440 96729736 9877968   91%    /opt/Sybase/dump


Available space for filesystem: /opt/OVPI is OK at 38.0%

Available space for filesystem: /opt/Sybase is OK at 19.0%

***** WARNING: Available space for filesystem: /opt/Sybase/DB is OK at 82.0%

Available space for filesystem: /opt/Sybase/TransLog is OK at 63.0%

***** WARNING: Available space for filesystem: /opt/Sybase/tempDB is OK at 94.0%

***** WARNING: Available space for filesystem: /opt/Sybase/dump is OK at 91.0%
```

```
#=========================================================================#
# Checking OVPI Data Tables and max ta_periods. . . . . . . . . . . . . . #
#=========================================================================#

Latest collected data for r_IRifEntry_keys
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:45PM

Latest collected data for SRIRDevPorts
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:30PM

Latest collected data for SHIRDevPorts
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 10:00PM

Latest collected data for SDIRDevPorts
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for SR_DRCR_Device
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:15PM

Latest collected data for SRDevRes_Device
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:15PM

Latest collected data for SRDevRes_Card
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:15PM

Latest collected data for SHDevRes_Device
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 10:00PM

Latest collected data for SHDevRes_Card
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 10:00PM

Latest collected data for SDDevRes_Device
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for SDDevRes_Card
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for r_FRSifEntry_keys
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:45PM

Latest collected data for Rfrswitch_port
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:30PM

Latest collected data for SHfrswitch_port
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 11:00PM

Latest collected data for SDfrswitch_port
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for RSR_OVPA_global
          Current Time  = Mar 25 2004 11:59PM
```

Look carefully. Collected data appears to be nearly 30 minutes old. If data is collected every 15 minutes, why isn't the timestamp 11:45PM?

Answer: This is Rate data, which has to be created from Raw collected data. A delay of 1 or 2 collection cycles is not unusual.

```
          MAX ta_period = Mar 25 2004 11:00PM

Latest collected data for RSR_OVPA_filesystem
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 10:00PM

Latest collected data for RSR_OVPA_config
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 12:00AM

Latest collected data for SR_SR_FileSystem
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004  8:00PM

Latest collected data for SR_SR_Kernel
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004  9:00PM

Latest collected data for SR_SR_SysVol
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004  9:00PM

Latest collected data for SH_SR_SysXcep
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004  9:00PM

Latest collected data for SH_SR_SysVolXcep
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004  9:00PM

Latest collected data for SD_SR_SysXcep
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for SD_SR_SysVolXcep
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM

Latest collected data for Rpvl_sla_mon
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 26 2004 12:42AM

Latest collected data for SHpvl_sla_mon
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 25 2004 10:00PM

Latest collected data for SDpvl_sla_mon
          Current Time  = Mar 25 2004 11:59PM
          MAX ta_period = Mar 24 2004 12:00AM
```

```
#=============================================================================#
# Checking OVPI Database and Transaction Log space. . . . . . . . . . . . . . #
#=============================================================================#

table_name                     Rows                 Kbytes
------------------------------ -------------------- ----------------
r_IRifEntry_upld1                                 0              null
r_IRifEntry_upld2                                 0              null
rDRCR_Buffer_upld1                                0              null
rDRCR_Buffer_upld2                                0              null
r_FRSifEntry_upld2                                0              null
r_ifentry_disc_keys                               0              null
xDRCS_ifentry_upld1                               0              null
xDRCS_ifentry_upld2                               0              null
rDRCR_CPUTotal_upld1                              0              null
rDRCR_CPUTotal_upld2                              0              null
xSR_OVPA_config_keys                              0              null
xSR_OVPA_global_keys                              0              null
xDRCS_portEntry_upld1                             0              null
xDRCS_portEntry_upld2                             0              null
xIRRouterSystem_upld1                             0              null
xSR_OVPA_config_upld1                             0              null
xSR_OVPA_config_upld2                             0              null
xSR_OVPA_global_upld1                             0              null
xSR_OVPA_global_upld2                             0              null
rDRCR_MemoryPool_upld1                            0              null
rDRCR_MemoryPool_upld2                            0              null
xDRCS_chassisGrp_upld1                            0              null
xDRCS_chassisGrp_upld2                            0              null
xDRCS_sysTraffic_upld1                            0              null
xDRCS_sysTraffic_upld2                            0              null
rDRNBR_wfResTotal_upld1                           0              null
rDRNBR_wfResTotal_upld2                           0              null
xATMMIB2IF_ifentry_keys                           0              null
rDRCR_DeviceSystem_upld1                          0              null
rDRCR_DeviceSystem_upld2                          0              null
xATMMIB2IF_ifentry_upld1                          0              null
xATMMIB2IF_ifentry_upld2                          0              null
xFRSCPE_WAN780_pvc_upld1                          0              null
xSR_OVPA_filesystem_keys                          0              null
rDRNBR_DeviceSystem_upld1                         0              null
rDRNBR_DeviceSystem_upld2                         0              null
xFRSCPE_RFC1315_pvc_upld1                         0              null
xSR_OVPA_filesystem_upld1                         0              null
xSR_OVPA_filesystem_upld2                         0              null
xDRCS_sysTrafficMeter_keys                        0              null
xDRCS_sysTrafficMeter_upld1                       0              null
xDRCS_sysTrafficMeter_upld2                       0              null
xFRSCPE_RFC1315_pvc_upld2                       942              null
xFRSCPE_WAN780_pvc_upld2                       8432              null
xIRRouterSystem_upld2                         86506              null
Ratm_pvc                                          0                48
Ratm_svc                                          0                48
Ratm_port                                         0                48
SDatm_pvc                                         0                48
SDatm_svc                                         0                46
SHatm_pvc                                         0                46
SHatm_svc                                         0                48
SMatm_pvc                                         0                48
SMatm_svc                                         0                48
Rf_ifentry                                        0                96
Rpvl_event                                        0                46
SDatm_port                                        0                46
SHatm_port                                        0                48
SMatm_port                                        0                48
...
```

Ksla_challenger	1	32
Rsla_challenger	1	80
RTHthDef_DR_Fore	1	96
SDIRConfig	3	76
SDFRSCPEConfig	3	80
RTHthDef_DRBP_NRT	9	78
RTHthDef_DRBP_Hourly	9	78
SMDevRes_Switch	13	80
RReportPackProcLog	18	80
SMfrswitch_pvc_exec	45	80
SMfrswitch_port_exec	45	78
SDIRCust	72	96
R_IFEntry_Reindex_Log	79	96
rDRCR_CPUTotal_keys	202	144
rDRCR_DeviceSystem_keys	206	128
rDRCR_Buffer_keys	208	160
xcfrCircuit_keys	283	144
xDRCS_portEntry_keys	292	144
SMIRCustProtocol	299	128
xDRCS_ifentry_keys	327	144
SDDevRes_Switch	402	124
RDRCS_chassisGrp	414	190
rDRCR_MemoryPool_keys	422	160
rDRNBR_DeviceSystem_keys	452	144
RTHthDef_DR_Hourly	471	108
SD90SDfrswitch_pvc_exec_dow	540	188
R_FRSifEntry	558	302
rDRNBR_wfResTotal_keys	567	176
SD90SDfrswitch_port_exec_dow	573	192
xIRRouterSystem_keys	634	144
RTHthresholdSRKernelDef	756	172
RIRVendorModel	802	160
SDfrswitch_port_exec	1324	284
SHIRPerformance	1325	190
RSR_OVPA_config	1490	352
RFRSCPE_ProcedureLog	1535	886
r_FRSifEntry_keys	1548	448
RDRCS_sysTraffic	1682	282
RTHthDef_FRS_NRT	1981	286
SRDevRes_Switch	2531	334
SRDevRes_Backplane	2531	378
xFRSCPE_WAN780_pvc_keys	2645	576
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SDIRCustDevice	166654	39654
SRDevRes_DeviceMem	178774	32496
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SDfrswitch_pvc	203754	145648
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```
SDpvl_sla_mon_exec                    213285          122300
SD42SD_SR_SysFSXcep_fore              223998           45766
SD_threshSum                          224673           30890
SR_SR_FileSystem                      281240           50502
SM_threshSum                          297983           32150
Rfrswitch_pvc                         298936          100408
SDIRDevPorts                          314329          321170
RFRSCPE_WAN780_pvc                    329233          164510
SHIRCustDevice                        367390          100296
SD_SR_SysFSXcep                       391366           44264
E_threshExcept                        535863          311760
SRIRDevPorts                          880228           90044
SH_SR_SysExec                         974530          341610
SHIRDevPorts                         1041549          731308
SH_threshSum                         1298710          189590
SH_SR_SysXcep                        1471915          561372
SH_SR_SysVolXcep                     1471915          205332
Rpvl_sla_mon                         1667848          620914
SHpvl_sla_mon                        2642726         1012824
SHpvl_sla_mon_exec                   3469378         1859944
Rpvl_sla_history_mon                13786394         3856366
```

Look for tables with excessively high row counts. 13 million is excessive but expected for this history table.

Tables with excessively high row counts, but NULL Kbytes need the indexes recreated with "indexmaint".

```
Available space for database: dpipe_db is OK at 19%
     Data MB  = 50000 MB
     Used MB  = 10916 MB
     Percent  = 21.8 %
     Log MB   = 25000 MB
     Log Used = 14 MB
     Log Pct  = 0.1 %

_____________________________________________


Available space for database: tempdb is OK at 0%
     Data MB  = 25000 MB
     Used MB  = 0 MB
     Percent  = 0.0 %
_____________________________________________________
```

Keep the database at or below 70% used if possible for optimal performance. A spike in this value could indicate:

1. db_delete_data failure.
2. incorrect data retention setting for 1 or more data tables.
3. unexpected changes in data collection policies.

```
#=====================================================================#
# Checking Time.log for Return Codes that are not zero (0). . . . . . #
#=====================================================================#

Found 0 "Status:[^0]" in {DPIPE_HOME}/log/Time.log


#=====================================================================#
# Checking Sybase log for errors & warnings on OVPISRV1 . . . . . . . #
#=====================================================================#

Found 0 "WARNING" in {SYBASE}/install/errlog_OVPISRV1

Found 0 "Error" in {SYBASE}/install/errlog_OVPISRV1


#=====================================================================#
# Checking trend.log file on OVPISRV1 . . . . . . . . . . . . . . . . #
#=====================================================================#

Found 0 "No licenses" in {DPIPE_HOME}/log/trend.log
Found 0 "License server is down" in {DPIPE_HOME}/log/trend.log
```

No Errors or Warnings! Good!

```
Found 1 "delete_data" in {DPIPE_HOME}/log/trend.log
trendtimer(1345): Thu Mar 25 00:05:01 2004 - [Pid=22243] /opt/OVPI/bin/timeit
/opt/OVPI/bin/db_delete_data -c 5

Found 1 "trendit" in {DPIPE_HOME}/log/trend.log
trendtimer(1345): Thu Mar 25 02:00:05 2004 - [Pid=890] /opt/OVPI/bin/trendit -s

Found 11 "trend_sum" in {DPIPE_HOME}/log/trend.log
trend_sum(11385): Thu Mar 25 04:00:32 2004 - /opt/OVPI/bin/trendpm returned 98
trend_sum(11520): Thu Mar 25 04:00:38 2004 - /opt/OVPI/bin/trendpm returned 98
trend_sum(11537): Thu Mar 25 04:00:45 2004 - No data found to load for table
SWdsi_database_util
trend_sum(11569): Thu Mar 25 04:00:56 2004 - /opt/OVPI/bin/trendpm returned 98
trend_sum(11537): Thu Mar 25 04:00:56 2004 - No data found to load fo
SMdsi_database_util
trend_sum(11648): Thu Mar 25 04:01:58 2004 - /opt/OVPI/bin/trendpm re
trend_sum(11670): Thu Mar 25 04:02:12 2004 - /opt/OVPI/bin/trendpm re
trend_sum(11713): Thu Mar 25 04:02:13 2004 - No data found to load fo
SWserver_load_avg
trend_sum(11713): Thu Mar 25 04:02:20 2004 - /opt/OVPI/bin/trendpm re
trend_sum(11713): Thu Mar 25 04:02:21 2004 - No data found to load fo
SMserver_load_avg
trend_sum(11757): Thu Mar 25 04:02:22 2004 - /opt/OVPI/bin/trendpm re

Found 92 "trendcopy" in {DPIPE_HOME}/log/trend.log
trendcopy(21706): Thu Mar 25 00:15:12 2004 - INFO: copying Rpvl_sla_mon into
Rpvl_sla_history_mon
trendcopy(21706): Thu Mar 25 00:21:07 2004 - 2068 rows copied from OVPISRV1
Rpvl_sla_mon to OVPISRV1 Rpvl_sla_history_mon
trendcopy(21706): Thu Mar 25 00:21:07 2004 - 0 keys copied from OVPISRV1 Kpvl_sla_mon
to OVPISRV1 Kpvl_sla_mon


PVLmon Finished on: Thu Mar 25 22:59:59 CST 2004
```

Look for "No data found" messages for hourly & daily tables. This message occurs 6 days out of 7 for weekly data.

Thank you for using PVLmon!

PVLmon v3.0
Release Notes
for HP OpenView
Performance Insight

Table of Contents:

Documentation Revision

Date	Revision	Author	Comments
May 14, 2002	2.1	Craig Rees	Initial v2.1 version
May 28, 2002	2.1	CraigR & GeraldM	Final review
May 12, 2003	2.1b	Craig Rees	Update to v2.1b
April 4, 2004	3.0	Craig Rees	Update to v3.0

Introduction

The purpose of this document is to provide detailed information about the new functionality and enhancements included with PVLmon v3.0.

Using PVLmon, many system and application aspects can be monitored, including:

- Confirm that required daemons/processes are up and running.
- Confirm that network ports are accepting connections.
- Confirm that applications and databases are operational and accepting connections.
- Identify filesystems that have crossed a capacity threshold.
- Analyze database operation for the following:
    - The database is online and available.
    - Specific tables contain data with the appropriate timestamps.
    - Track the size and growth of specific database tables.
    - Identify databases that have crossed a capacity threshold.
- Examine log files to confirm successful process completion.
- Search log files for errors, warnings, return codes, and other conditions.

By using the default PVLmon configuration file for OVPI (TREND), the following analysis is performed on that application:

1. Checks the OVPI modules used in rollup and data management to confirm that they have run to successful completion and identify errors if any (TRENDsum, TRENDcopy, db_delete_data …).
2. Verifies operation of OVPI License Manager (OVPI v4.5 and earlier).
3. Identifies OVPI module startup problems caused by the License Manager not responding to or honoring requests for license tokens (OVPI v4.5 and earlier).
4. Examines the database (Oracle or Sybase) log file to identify errors/warnings associated with the operation of the database.
5. Confirms that the necessary OVPI processes are running such as TRENDtimer, Trend_License (OVPI v4.5 and earlier), and other critical OVPI processes.
6. Checks Port Status to verify that network socket ports are open and available for the database (Oracle or Sybase), TRENDweb, and other listening applications.
7. Verifies File System Capacity and confirms that OVPI related partitions are not above 80% capacity.
8. Examines OVPI Database Statistics to verify:
    - OVPI database is on-line and running.
    - OVPI pollers are operating as expected.
    - Raw data is collected and converted to Rate data as expected.
    - Specific Summary tables have been updated with recent rolled up data.
    - Tracks the size and growth of all the OVPI database tables.
    - Database size (segments) does not exceed 80% capacity.

PVLmon performs this analysis once per hour. If exceptions are found, PVLmon pages the application administrator and all other recipients listed in the PVLmon E-mail and Pager notification file.

PVLmon (since v2.1) has been enhanced to allow API (Application Program Interface) calls to various Trouble Ticket systems and other related applications. If this feature is enabled, an API call will be launched to generate a trouble ticket within the user's trouble ticket system when errors are detected. The resulting trouble ticket will be populated with the corresponding error from the application being monitored by PVLmon.

Once per day, normally at the conclusion of the morning rollup process, PVLmon is initiated with options that enable it to generate a report summarizing the condition of critical functions. This report is then sent via e-mail to the recipients listed in the PVLmon E-Mail and Pager notification file. This report contains status information about each step of the rollup process as well as the size of each data table and the latest timestamp in the data collection tables. This report provides comprehensive insight into the operational health of the OVPI server and enables the administrator to quickly assess the condition of OVPI and identify issues that may need to be addressed.

1. New PVLmon Features and Functionality

1.1. New Features for PVLmon v3.0

1. Tested to operate with OVPI v5.0, Oracle v9i (v9.2.0.4), and Java v1.4.2.
2. Updated PVLmon to use either Oracle or Sybase. The proper PVLmon Configuration file is copied into place depending whether Oracle or Sybase is installed.
3. PVLmon now monitors the Oracle database operation by examining the alert log file for "ORA-" errors and warnings. Oracle log checking for “ORA-“ message are divided into e-mailing on just warnings, but paging (which also includes and e-mail) on major error codes and critical error codes.

   Please review the Oracle Config file (*AMON_Default.Config_[Unix|Win32]_v5.0_Oracle*) in the *{PERVIGIL_HOME/PVLmon/etc* directory for all monitored “ORA-“ messages.

1.2. New Features for PVLmon v2.1b

1. Tested to operate with OVPI v4.6 and Java v1.4.
2. Modified PVLmon Configuration files that put the log file checking last so all the other most used statistics are up top.
3. Added the capability to create HTML reports in the PVLmon calling program of “pvlmon.sh”. By default, PVLmon HTML reports are created in: {DPIPE_HOME}/reports/ PVLreports_Admin/PVLmon and are purged when older than 31 days.
4. Added a check to see if the database is in single-user mode and if so, run "pvlmon -i AMON_SingleUserMode.Config" instead. This Configuration file will not connect to the OVPI database and is simply a copy of the primary PVLmon config file of: “AMON_ Default.Config” but has the CHECK_TABLE and CHECK_DB sections modified and removed as follows:

```
#=============================================================================#
# Check the following data tables that ta_period is not older than <NN> minutes
#
HEADER = The OVPI database of dpipe_db is in Single-User Mode. . . . . .


#=============================================================================#
# Check the DataBase for available space
#
HEADER = The OVPI database of dpipe_db is in Single-User Mode. . . . . .
```

   To implement on Unix and Win32, perform the following steps:

   - Login as “trendadm” for Unix or “Administrator” for Windows
   - cd ${PERVIGIL_HOME}/PVLmon/etc
   - cp AMON_Default.Config AMON_SingleUserMode.Config
   - vi AMON_SingleUserMode.Config -and modified the CHECK_TABLE and CHECK_DB sections as shown above.

1.3. New Features for PVLmon v2.1

1. Allow the use of {Env_Variables} within the PVLmon Configuration files. PVLmon Config files may now contain "Global Environment Variables" from either Unix and Windows 2000 or NT v4.0. This allows the default Config files to be much easier to modify after the installation.

2. Migrated PVLmon from Java 1.1.8 to Java 1.3.1, which is the same version that OVPI v4.5 uses. This allows {Env_Variables} to be used and the install/upgrade process to skip the Java install section if OVPI v4.5 is loaded. PVLmon will first attempt to use Java in the PerVigil home directory, then JRE in the OVPI install directory.

3. Consolidated the E-mail and Pager lists into one file. Uses the standard Config file layout to model the new *PVLmon_Email_Pager.List* file. The Upgrade process from v2.0 to v2.1 asks the user review the E-mail and Paging lists so that e-mail addresses and pager numbers can be included in one file. i.e.

```
# Comments as needed
AMON_PAGER  =  987654XXXX@<service_provider>  # <user_name>
AMON_EMAIL  =  support@pervigil.com           # <user_name>
...
```

4. Created new OVPI (TREND) v3.6, v4.0, and v4.5 AMON_Default.Config files for Unix and Win32 because of the date format changes within the trend.log file and default ReportPack table names.

5. Added an option in the *pvlmon.sh* startup script that will launch an external API, such as a trouble ticketing system with the ability to pass the error message(s) to the API.

6. Added a Config entry to look for expired licenses within the *trend.log* for v3.6, v4.0, and v4.5 Unix and Windows based servers.

7. New install and upgrade programs are provided which programmatically perform all operations found in the install guide for Unix and Win32? Note that the default PVLmon Config file will still require minimal editing.

8. Enhanced PVLmon to handle log files of 1+ GB, up from 100+ MB log files.

9. CHECK_DB - Modified to track utilization in other databases (i.e. TempDB) in the same manner as Dpipe_DB is tracked.

10. CHECK_PROCESS - Changed the output display to match format of CHECK_PORTS. Instead of displaying the lengthy "*ps –ef*" output, display:
    Process: <process_name> is running on <hostname>

11. Removed the word "Notifier" from the pager messages.

1.4. New Features for PVLmon v2.0

5. One of the primary enhancements in PVLmon 2.0 is the use of a new configuration file format that enables much greater control and flexibility. Most operational capabilities of PVLmon can now be easily configured, which enables PVLmon to monitor a wide variety of applications.

6. For Windows, PVLmon requires Cygwin (www.cygwin.com) Unix on Windows software to be installed. PerVigil has taken full advantage of Cygwin to greatly simplify the administration and remote administration of applications running on the Windows platform. There are many benefits of Cygwin, see below. Cygwin is provided for your convenience on the PVLmon CD.

7. Modifying the Config file during installation has been simplified by adding lines, removing lines, or commenting lines out.

8. PVLmon now requires a temporary or permanent license key to operate.

9. Enhanced PVLmon debug modes simplify problem resolution when unexpected conditions are encountered.

10. PVLmon's log file analysis has been enhanced to perform better filtering of records based on time stamps. Now PVLmon can be configured to send an alert for an error entry only once. Previous versions would generate alerts for the same error entry in a log file every time PVLmon was run that day and not just the first time that error entry occurred.

11. PVLmon now uses standard RegEx search patterns when parsing log files.

12. PVLmon can monitor remote databases with the use of the new Variable Name of: AMON_DATABASE_INFO.

13. Executable commands can now be easily launched within PVLmon and its output added to the PVLmon log file.

14. Headers in the log file are now customizable.

15. New logging options enable the user to now execute PVLmon in "log only" mode so pages and e-mails are not sent but output is provided to the user via the command line.

1.5. Benefits of using Cygwin on any Windows Server with OVPI

Cygwin provides many benefits to administrators who are operating applications in the Windows environment:

1. Aliases for ease of use at the command prompt. Complex commands that are used frequently can be reduced to a few key strokes.
2. Ability to use the Unix *tail* command to continually view log file contents and see new information as it is added to the log file.
3. Cron utility to schedule processes anytime of minute, hour, day, week, month, … The existing scheduling program that is available for WinNT is very limited.
4. Cygwin enables Administrators and Technical Support personnel to remotely access a Windows Server via a secure connection (i.e. SSH) just like Unix without the need for high-priced GUI software.
5. Cygwin enables the use of simple or complex Unix shell-like scripts in order to automate processes without requiring the efforts of a programmer.
6. Cygwin is painless to install, even easier to use, and Cygwin is absolutely FREE.

1.6. PVLmon Released Platforms

Platform	OVPI (TREND) Release	Availability	Size in MB
WinNT	TREND v3.6 and v4.0X	Now	100 MB w/ Cygwin
Win2000	OVPI v5.0, v4.6 & v4.5, TREND v4.0x, v3.6	Now	100 MB w/ Cygwin
Solaris	OVPI v5.0, v4.6 & v4.5, TREND v4.0x, v3.6	Now	10 MB
HP-UX	OVPI v5.0, v4.6 & v4.5, TREND v4.0x, v3.6	Now	10 MB
AIX	OVPI v4.5, TREND v4.0x, v3.6	Now	10 MB

1.7. Upgrading from PVLmon v2.1 to v3.0

There is no upgrade procedure for upgrading to PVLmon v3.0. This release is only for new installations of OVPI v5.0. PVLmon v3.1 (coming soon) will contain an upgrade procedure from v2.1 and v3.0 to v3.1 as well as the enhancements as listed later in this document.

1.8. Upgrading from PVLmon v2.0 to v2.1

There is a formal procedure for upgrading from PVLmon v2.0. Please refer to the PerVigil README_PVLmon_Upgrade_v2.1_Guide in the PVLmon manual or on the PVLmon 2.1 CD. This upgrade process is the same for both Unix and Win32.

1.9. Upgrading from PVLmon v1.0 to v2.1

There is no formal procedure for upgrading from PVLmon v1.X. To upgrade, uninstall the previous version of PVLmon and install PVLmon v2.1. This is a simple process and does not affect the OVPI application. The time required to complete this process is the about same as performing a fresh installation and testing PVLmon, less than 15 minutes.

2. Issues with PVLmon

If you encounter any issues not mentioned below, please contact PerVigil Technical Support for assistance.

2.1. PVLmon v2.0 Resolved Issues

1. PVLmon Issue 2.0-01 - Dates produced in the *$DPIPE_HOME/[tmp|log]/trend.log* for TREND v3.6 and v4.0 were not found with CHECK_LOG when the day was the 1st to the 9th of the month. Extra CHECK_LOG events were added to the Unix Config files for v3.6 and v4.0 to look for single digit "days" of the month. This is not an issue with OVPI for Windows and OVPI v4.5 because the date format is different.

2. PVLmon Issue 2.0-02 - Occasionally on heavily loaded OVPI Servers, a required process being monitored with CHECK_PROCESS was not observed to be running when if fact it was. This was a timing issue that has been resolved.

2.2. PVLmon v2.1 Known Issues

1. For Win32, when installing PVLmon into an OVPI directory that is more 2 or more levels deep, the PVLmon startup script will need to be modified by hand. In other words, if OVPI is not installed in "C:\TREND", but something more like "*C:\TREND\TREND_v4.5*", then modify the PVLmon startup file of: *$PERVIGIL_HOME/PVLmon/bin/pvlmon.sh* and change the line of: "`DPIPE_HOME=C:/TRENDTREND_4.5`" to "`DPIPE_HOME=C:/TREND/TREND_4.5`" by adding the missing "forward" slash to the path.

2. PVLmon for Solaris returns the following database disconnect message to the console and to */var/adm/messages*. These are console level messages only and are not normally seen or effect system or PVLmon operations.

   May … <hostname> slsyb11[pid]: SENH_ERR_ABORTED: Session Aborted; PABR_TDISCON: Transport Disconnect Received
   May … <hostname> slsyb11[pid]: Connection from 10.10.13.105 SESSION ERROR

3. Occasionally when the OVPI Server and Database are very busy, PVLmon can produce errors of 1131 and 1142 in the Sybase log file. The presence of these errors in other situations could indicate a serious problem, but NOT when produced by PVLmon. When checking the database tables and database size, a Sybase stored procedure is used to review "Reserved Pages". If a page changes while being reviewed (which is very possible with OVPI), an error is generated. This issue will be resolved in a future release.

4. Known e-mail anomalies. The following is a list of recommended settings to e-mail clients.

Outlook:

1. When viewing PVLmon e-mail, output of certain sections like the Sybase log output and **ps** (process status) output are wrapped and hard to read.

   Workaround: Turn off the auto-wrap feature in the Menu Bar / Tools / Options / Preferences / E-Mail Options / and unselect "Remove extra line breaks in plain text messages". Also check out the Knowledge Database on www.microsoft.com. Or select the following link: http://support.microsoft.com/default.aspx?scid=%2fsearch%2fviewDoc.aspx%3fdocID%3dKC.Q287816%26dialogID%3d7514274%26iterationID%3d1%26sessionID%3danonymous%7c6925544

2. When forwarding an e-mail from PVLmon, long lines are broken into two lines.

   Workaround: Change the default character size of plain-text messages from 76 characters to 80. From the Menu Bar / Tools / Options / Mail Format tab / <Internet Format> / change "Plain text options" to "80" characters.

Outlook Express:

1. The PVLmon e-mail output is using a proportional font instead of a default fixed font for plain-text messages.

   Workaround: Still being investigated, but change the default font used for HTML to be fixed. I.e. From the Menu Bar, select Tools / Options / Read tab / <Fonts…> button / and change "Proportional Font" to "Courier New".

2.3. PVLmon Caveats

The following caveats are caused by software other than PVLmon. While there may be workarounds, there are no plans by PerVigil to fix or enhance these issues other than upgrading to the next release of any 3rd party software when available.

1. Cygwin's Cron utility for WinNT does not work across network mapped (mounted) drives. From the command line, checking a remote filesystem or specifying a Config file on a mapped drive, you should see no problems. However, processes initiated by Cron can not access remote drives. Cron works better with Win2K, but not with accessing Config files remotely with the "**pvlmon -i**" option.

   Workaround: Create a symbolic link from the local disk to the remote disk and use the symbolic link as the full pathname to a Config file.

2. Cygwin for Windows uses a standard Unix "/" (forward slash) for its directories delimiter, while DOS uses a "\" (back slash). All scripts and config files should use the forward slash.

3. Cygwin for Windows is semi case sensitive with names because it uses standard Unix UPPER and lower file naming conventions. Unlike DOS which is case insensitive, Cygwin recognizes both conventions. I.e., you can "cd" to any directory using all lower/UPPER case, but file/directory parsing with <Tab> requires the correct case.

4. TREND v3.X places log files in the $DPIPE_HOME/tmp, while TREND v4.X uses $DPIPE_HOME/log. PVLmon uses $DPIPE_HOME/log for its log files.

5. When using **vi** within Cygwin, text files may have a **^M** (Carriage Return) at the end of each line because of the difference between Unix and DOS. This is normal and does not cause a problem. These extra characters do not need to be removed. However, if you wish to remove these characters, use the Cygwin command of: **d2u** or **dos2unix** (i.e. *d2u <filename>*)

6. The PVLmon output created by Cron has two (2) **^M**'s at the end of each line when editing with **vi**. This does not affect the output viewing or printing in any way.

3. PVLmon Future Enhancements

This section lists potential enhancements that are scheduled or are under consideration for future PVLmon releases.

1. Add the ability for PVLmon to generate a trap (SNMP Alert) upon finding an error. Possibly with a logging option.

2. CHECK_LOG - Add enhancement to print out only one copy of a unique message with a count of how many duplicates messages occurred in total. Case in point, trendcopy can produce thousands of messages when trying to copy duplicate records.

3. CHECK_TABLE and/or CHECK_DB - Check what the I/O Exceptions when connecting to the database and see if exceptions can be mapped to useful error messages like:
   ***** WARNING: Database is in single-user mode, skipping this check.
   ***** WARNING: Wrong port number used to connect to the database.
   ***** WARNING: Network access to the database is not available.
   ***** WARNING: Database is down.

4. Determine if an OVPI process is just taking too long to process and alert if it is.

5. Add another argument to the CHECK_TABLE command that would also include a MIN(ta_period) value. This would help with problem determination of data aging issues with db_delete_data.

6. Provide an enhanced FAQ as to better problem solve reported issues.

7. Develop a GUI install program which programmatically performs all operations found in the install guide for each supported OS.

8. Allow PVLmon to specify an alternate output file.
   USAGE: pvlmon [-o] …
   -o <Output_Log_FileName>
   Alternate file to record log. Default output file is $DPIPE_HOME/log/PVLmon.log

9. Modify PVLmon to create (overwrite if necessary) its output log file instead of having to "tee" it from the pvlmon.sh startup script.

4. Copyright Notice

PerVigil PVLmon User Guide	Publication No. PMUG-2004APR
PerVigil PVLmon Release Notes	Publication No. PMRN-2004APR
PerVigil PVLmon Install Guide	Publication No. PMIG-2004APR
PerVigil PVLmon Datasheet	Publication No. PMDS-2004APR

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5. About PerVigil

PerVigil delivers integrated and automated IT Service Management (ITSM) solutions that give our clients the insight and control they need to maximize service levels experienced by their end users. With a clear focus on ITSM solutions and client-focused excellence, PerVigil has established a reputation for delivering cost-effective solutions that provide immediate value and long-term sustainability.

Using an approach encompassing people, process, and technology, PerVigil guides clients through the specification and deployment of best-of-breed IT Service Management Solutions that address the client's specific objectives. By converting labor-intensive standalone tools into a fully integrated solution, blind spots can be eliminated and the benefits of effective IT Service Management can be realized.

By delivering solutions based on commercially available software products, PerVigil minimizes deployment costs and enables the client to focus on core business activities. Most importantly, Return on Investment, the long-term supportability of the solution, and the client's operational effectiveness are all maximized.

PVLmon v3.0
Install Guide for Unix
for HP OpenView
Performance Insight

PREREQUISITES BEFORE INSTALLING PVLmon:

1. OVPI (TREND) and Oracle or Sybase should be installed first, but is not absolutely necessary.

2. If using Oracle as the OVPI database, make sure the environment variable of {ORACLE_BASE} is properly setup. PVLmon uses this environment variable to determine where the Oracle "alert_{HOSTNAME}.log" file is located in order to parse the file looking for errors and warnings. If OVPI is installed, add this environment variable setup to the "{DPIPE_HOME}/data/env/env.properties" file.

3. If necessary, Java v1.4.2 will be installed only into the PerVigil home directory and will not affect any other Java installed applications. This section can be skipped if OVPI v5.0 or v4.6 is already installed. The Java from OVPI can be used instead. At the Command prompt, type "java -version" or "jre" to determine the version number or if installed at all.

4. Contact PerVigil and obtain a temporary or permanent license file. The license can be e-mailed to you, but you must have a license ready to install to complete this process.

5. If PVLmon was downloaded from PerVigil's Web/FTP site, then unTAR the install file into "/tmp/pvlmon_install" and use this directory name in place of *<cdrom_drive:>*.

6. Check if the Cron file for "*cron.allow*" already exists in *"/var/adm/cron"*, or *"/usr/lib/cron"*, or *"/etc/cron.d"*, if it does then edit the file and add the line of "*trendadm*" to the bottom.

INSTALL PVLmon ON THE OVPI SERVER:

NOTE: Substitute the path of ***{PERVIGIL_HOME}*** with the full path of the PerVigil directory. Also substitute *<cdrom_drive:>* for the CD-ROM directory.

1. Login as "*trendadm*", insert the PVLmon CD, and for Unix users, **mount** the CD if the CD does not auto-mount while logged in as "*root*".

   NOTE: For HP-UX, use:
   1a. /usr/sbin/pfs_mountd &
   1b. /usr/sbin/pfsd &
   1c. pfs_mount -t rrip -x unix /dev/dsk/<device> /cdrom

   If the <device> is not known, then either: "cat /etc/fstab" or type: "ioscan -fnC disk" to get the <device>.

   For remote mounted CD-ROM drives, use the following mount command:
   1c. pfs_mount -t rrip -x unix {HOSTNAME}:/cdrom /cdrom
   (hostname:/cdrom or other mount point)

To unmount the PVLmon CD on HP-UX, use:
4a. pfs_umount -c /cdrom
4b. umount /cdrom
4c. Repeat steps 4a and 4b until the messages of: "/cdrom not mounted" and "cannot unmount /cdrom" appear.

2. **cd *<cdrom_drive:>***
csh -f install_Unix_PVLmon_v3.0.csh
or
Use the "*File Manager*" Admin GUI tool, change the current directory to the *<cdrom_drive:>* and **double-click** on: "*install_Unix_PVLmon_v3.0.csh*".

3. Follow the prompts as listed below:

```
#==============================================================================#
# Copyright  : 2000-2004 PerVigil Inc. (www.pervigil.com) All rights reserved. #
#                                                                              #
# Description: Unix Install procedure for PVLmon for OVPI 5.X, 4.X & TREND 3.X #
#                                                                              #
# Version Num: v3.0                                                            #
#==============================================================================#
```

Do you wish to install PVLmon v3.0 for Unix: ([y]/n/q) **y**

```
Installing PVLmon v3.0 for Unix

You will be asked to install the following sections:

   1. PerVigil Home Environment
   2. PerVigil Utilities for OVPI (TREND)
   3. PerVigil Aliases for OVPI (TREND)
   4. Java v1.4.2 for HP-UX
   5. PerVigil PVLmon v3.0
   6. finally, schedule Crontab entries for PVLmon

Each section can be skipped and repeated if necessary.

Setting up OVPI Environment with: {DPIPE_HOME}/data/Cshrc

Finding the PVLmon Install Directory...
Using the PVLmon Install Directory of: /cdrom

Is this correct?  If not, enter the pathname to the PVLmon install programs
(i.e. '/cdrom/cdrom0' or '/cdrom' or '/tmp' or '/tmp/pvlmon_install' or ...)
([y]/q/pathname): y

Using the PVLmon Install Directory of: /cdrom

Detected that PVLmon will be used for OV version: OVPI5x on Oracle
```

INSTALL NOTE: *This initial startup section determines where the PVLmon install directory is located. Either on the PVLmon CD-ROM or in a temp directory.*

```
#=============================================================================#
Setting up the PerVigil Home Environment

Checking if the PERVIGIL_HOME Env variable already exists...
The PerVigil home directory environment is not setup yet.

Do you wish to install the PerVigil Environment: ([y]/n/q) y

Where do you wish to create the PerVigil Directory:
(/opt/PerVigil):


Creating the PerVigil home directory as: {PERVIGIL_HOME}
Making the PerVigil home directory
Making the PerVigil Docs directory
Making the PerVigil Log directory
Making the PerVigil Java directory

~/.cshrc already has write access
~/.profile already has write access
Appending PerVigil Home Env Variable to: .cshrc and .profile

Completed section for installing the PerVigil Home environment
```

INSTALL NOTE: *This section creates the PerVigil home install directory as specified by the installer, creates the PerVigil home sub-directories, then adds the PERVIGIL_HOME environment variable into the user's .cshrc and .profile Environment setup files, which includes adding {PERVIGIL_HOME}/bin into the existing path.*

```
#=============================================================================#
Do you wish to install PerVigil Utilities (highly recommended): ([y]/n/q) y


Copying PVL Utilities into {PERVIGIL_HOME}/bin
        pvlarchivelog.sh,  timeit,  psovpi,  psovpiio,  psovpidb

Running timeit to create the Time.log file

Appending PerVigil Log Archiving entries into /opt/OVPI/lib/trendtimer.sched

Completed section for installing the PerVigil Utilities
```

INSTALL NOTE: *This section adds the PerVigil utilities (listed above) that are used by PVLmon. These utilities are standalone (not dependant on PVLmon) and can be modified as desired.*

If any of the above utilities already exists (like timeit), this install process will skip over that utility.

There are other utilities on the PVLmon CD which are NOT installed, but available if required.

```
#=============================================================================#
Do you wish to install PerVigil aliases: ([y]/n/q) y
~trendadm/.cshrc already has write access
~trendadm/.profile already has write access

Copying Alias setup files into {PERVIGIL_HOME}
Installing PerVigil alias setup in ~/.cshrc and ~/.profile

Completed section for installing the PerVigil Aliases
```

INSTALL NOTE: *This section installs very useful Unix aliases for OVPI. These aliases allow the user to change directories to various OVPI and database related directories and view (tail) log files for problem determination. Just type "alias" at the command prompt to familiarize yourself with the aliases.*

```
#=============================================================================#
Do you wish to install Java for {OS}
NOTE:  If OVPI v4.6 or v5.0 is installed, this step is
not necessary.  The Java for OVPI can be used instead: ([y]/n/q) y

Installing Java v1.4.2 for {OS} into {PERVIGIL_HOME}/Java
     NOTE: Files are listed as installed ...

Running Java to verify install process and version number.
Please verify the output from Java:

java version "1.4.2"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2-011206-02:17)
Java HotSpot(TM) Server VM (build 1.4.2 1.4.2.02-JPSE_1.4.2.02_20030706 PA2.0,
 mixed mode)

Completed section for installing Java
```

INSTALL NOTE: *This section will install Java v1.4.2 for the Operating System of the OVPI Server. If OVPI v4.6 or v5.0 is installed, the Java that is installed with OVPI can be used instead. PVLmon will look for Java installed in the PerVigil directory, then in the OVPI directory.*

Also, when the Java install process is finished, the installed Java version number will be displayed. It will mention "Java v1.4.X", but the rest of the syntax may be a little different than what's shown above.

```
#=============================================================================#
Finally, Now do you wish to install PVLmon: ([y]/n/q) y

Copying PVLmon into {PERVIGIL_HOME}/PVLmon
Copying PVLmon Docs into {PERVIGIL_HOME}/Docs

Linking {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh to {PERVIGIL_HOME}/bin/pvlmon

Copying in the default PVLmon Config file of:
AMON_Default.Config_Unix_v5.0_Oracle in as AMON_Default.Config


Completed section for installing PVLmon
```

INSTALL NOTE: *This section installs PVLmon into the {PERVIGIL_HOME} directory, then links the startup calling script into OVPI's bin directory. Lastly the appropriate PVLmon configuration file is copied into place.*

```
#=============================================================================#
Do you wish to install PVLmon hourly & daily schedule into Crontab: ([y]/n/q) y

WARNING!  /var/adm/cron/cron.allow exists!
The user of 'trendadm' is already in /var/adm/cron/cron.allow, continuing...

Adding the Cron tab entries into the crontabs file for the user 'trendadm'
warning: commands will be executed using /usr/bin/sh
#
# Run PVLmon every hour (page) and every day (email) after rollups (7:54am)
# or at the end of the day (11:54pm) looking for potential OV issues.
#59 * * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -p > /dev/null 2>&1
# Creates a daily PVLmon report after the morning rollups
#54 7 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Creates a daily PVLmon report for the entire day
#54 23 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Archive and compress the PVLmon daily log file
0 0 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlarchivelog.sh {PERVIGIL_HOME}/Log/
PVLmon_Archive.log


NOTE - For Unix users only: If PVLmon entries are not displayed above,
login as 'root' and edit the file of: cron.allow in either /etc/cron.d
or /var/adm/cron or /usr/lib/cron and add a line at the bottom containing
'trendadm', then re-run this section.

Completed section for installing Crontab
```

INSTALL NOTE: *This section installs the required PVLmon entries into CRON's "trendadm" crontab file, provided either the "cron.allow" file does not exist or already has the user of "trendadm" appended to the end.*

Note that the Cron entries are commented out and will need to be uncommented when PVLmon is ready for production.

```
#=============================================================================#
#=============================================================================#
# PVLmon INSTALLATION IS ALMOST COMPLETE, Please follow the instructions below #
#=============================================================================#
#=============================================================================#
```

Press <**Enter**> to continue:

Now that the install is complete, there is still configuration editing
that needs to be performed:

NOTE: (for TREND v3.X users) Update $TRENDWEB_HOME if {DPIPE_HOME}/TRENDweb
is NOT the correct" location of TRENDweb.

vi ${DPIPE_HOME}/lib/Cshrc ${DPIPE_HOME}/lib/Profile

1. Either bring up a new window to activate the PerVigil environment or source the appropriate environment files depending upon your shell:

   source ~/.cshrc -for the CSH/TSH env
   or
   . ~/.profile -for the SH/KSH env

2. Copy in the license file you received from PerVigil into *${PERVIGIL_HOME}/PVLmon/lib*

3. Modify the default config file of *AMON_Default.Config* and make the following changes:
   a. Modify **"mail.<Company_Name>.com"** to the company mail server name,
   b. Modify **"<Company_Name>"** to a short company name/initials,
   c. Uncomment/comment out processes to check in the CHECK_PROCESS section,
   d. Modify ports in use in the OVPI Server in the CHECK_PORTS section,
   e. Update the disk partitions to check in the CHECK_FS section,
   f. Add new lines in the CHECK_TABLE section to monitor all important tables:

   vi ${PERVIGIL_HOME}/PVLmon/etc/AMON_Default.Config

4. Modify the E-mail and Pager file of *PVLmon_Email_Pager.List* and make the following changes:
   a. Add e-mail address entries to the variable name of "AMON_EMAIL" along with a comment of who this e-mail belongs to. One e-mail address per AMON_EMAIL variable and create as many entries as necessary.
   b. Add pager number/address entries to the variable name of "AMON_PAGER" along with a comment of who this pager belongs to. One pager number/address per AMON_PAGER variable and create as many entries as necessary.

   vi ${PERVIGIL_HOME}/PVLmon/etc/PVLmon_Email_Pager.List

5. OPTIONAL: If necessary, modify any User definable variables including the full pathname to the "java" command in the PVLmon calling script.

   vi ${PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh

6. OPTIONAL: Move the "log_backup" lines that were added during this install process at the bottom of the trendtimer.sched file to the appropriate section which deals with backing up the log files:

   vi ${DPIPE_HOME}/lib/trendtimer.sched

7. Test PVLmon by typing "**pvlmon**" in a NEW window and editing the *AMON_Default.Config* file until the PVLmon results are what is to be expected. NOTE: The first run through PVLmon will complain that it is updating various "history" files for comparison when PVLmon is run again.

8. When ready for production, log back in as "*trendadm*" and uncomment the entries in the Crontab file so PVLmon will begin checking the OVPI Server every hour looking for potential issues and supplying you with a daily log file that shows the status of OVPI and the results of the morning rollups.

   setenv EDITOR vi (if necessary)
   crontab -e

Please refer to the installation instructions in the 'PVLmon User Guide' to obtain a printable version of the above post-install configuration steps.

For a helpful cheat sheet to the VI editor, please refer to these quick and easy web sites: http://www.kcomputing.com/vi.html
http://cac.uvi.edu/miscfaq/vi-cheat.html

For support, questions, and comments, please contact PerVigil at:
support@pervigil.com
(+1) 972-759-0228

Thank you for using PVLmon!

Cygwin Install Guide for PerVigil Products

Prerequisites before installing Cygwin:

1. Cygwin needs to be installed on the PVLmon Server in the directory structure where the rest of the PerVigil products (i.e. PVLmon) will be installed, such as: C:\PerVigil, C:\OVPI\PerVigil, or ...

2. If Cygwin and/or PVLmon were downloaded from PerVigil's Web/FTP site, then unzip the install file into *C:\Temp\pvlmon_install* and use this directory name in place of <*cdrom_drive:*>.

3. Turn off any Antivirus and/or Firewall software during installation.

Installing Cygwin on the PVLmon Server:

NOTE: Substitute the path of (**C:\PerVigil**) with the full path of the PerVigil home directory. Also substitute (**<cdrom_drive:>**) for the CD-ROM name (i.e. D: or E: or …).

1. While logged in as "*Administrator*" or user with equivalent privileges, insert the PVLmon Install CD by PerVigil.

2. From Windows Explorer (or My Computer), change directory to

   <cdrom_drive:>\Cygwin_v1.5.9-1_Install

3. Double-click on **setup.exe** to initiate the Cygwin Install Wizard.

4. Click **<Next>** past the Cygwin Setup banner page.

5. Screen Install from

   Check: Install from Local Directory

   <Next>

6. Screen Select install root directory

   In the "Select install root directory" field, enter: **C:\ PerVigil**

   Click: **All Users** Install For:

   Click: **Unix** Default Text File Type:

   <Next>

7. Screen Local Package Directory

   In the "Local Package Directory" field, enter:

   <cdrom_drive:>\Cygwin_v1.5.9-1_Install

   <Next>

   NOTE**:** The default value for "Local Package Directory" is normally okay.

   NOTE**:** If installing from a temp directory, the temp directory name will be listed above instead of the **<cdrom_drive:>**

8. Screen Progress

   NOTE**:** This analyzes the available packages that may be installed. This will take a minute.

9. Screen: Select Packages to install

   By default, all packages necessary for PVLmon are already pre-selected. No other packages are required unless installing with an OV application that does not include Perl. In this case, select the Perl packages as shown below. OV applications like OVPI already include Perl.

   If any other applications are desired, then they may also be installed by following these instructions:

   - Make sure the "**Curr**" radio button is checked.
   - Click on every Package (Category) listed in the install screen to view the individual components. Using the list below, click on the word "**Skip**" to change “Skip” to the current version number.
   - All components in all packages can be installed if desired. Click on the **[View]** button to display ALL components and then click on any component listed as "**Skip**".

Necessary Packages (Select below items; Version # displayed, not "Skip".

Admin	- All items are required
Archive	- All items are required
Base	- All items are required (already selected by default)
Database	- Leave as default
Devel	- Leave as default
Doc	- Leave as default
Editors	- ed
	- vim
Games	- Leave as default
Graphics	- Leave as default
Interpreters	- perl and perl-libwin32 (ONLY if installed on a system without OVPI)
	- Leave rest as default
Libs	- crypt
	- perl-libwin32 (ONLY if installed on a system without OVPI)
	- regex
	- Leave rest as default
Mail	- Leave as default
Math	- Leave as default
Mingw	- Leave as default
Net	- inetutils
	- ncftp
	- openssh
	- openssl
	- rsync
Publishing	- Leave as default
Shells	- All items are required (select remaining items)
System	- Leave as default
Text	- Leave as default
Utils	- clear
	- cpio
	- cygutils
	- d
	- file
	- time
	- Leave rest as default
Web	- Leave as default
XFree86	- Leave as default
ZZZRemovedPkgs	- Leave as default
_PostInstallLast	- Leave as default

Select **<Next>**

NOTE**:** The Cygwin install will now start. This will take a few minutes.

10. Final Screen: Cygwin Setup

Check: Create Icon on Desktop (already selected)

Check: Add icon to StartMenu (not already selected)

<Finish>

<OK> When the “Installation Complete” message appears.

Configuring Cygwin as required for PVLmon:

From a **Cygwin** window while logged in as "*Administrator*", configure Cygwin as required by PerVigil:

1. While logged in as "*Administrator*" or user with equivalent privileges, insert the PVLmon Install CD by PerVigil and follow the instructions below.

2. Add Cygwin "bin" directories to the PATH environment variable and add a new PERVIGIL_HOME environment variable. You can reduce the risk of a typo by copy/paste the values below.

   Click on: **Start** / **Settings** / **Control Panel** -> **System**
   For WinNT users: select **Environment** tab
   For Win2K users: select **Advanced** tab, then **<Environment Variables…>**

   Modify "Path" within *System variables* and add the following to the end of the line.
   <Edit> (for Win2K users)
   ;C:\PerVigil\bin;C:\PerVigil\usr\sbin;.
   <OK> (or **<Set>** for WinNT users)

   Add a new variable within *System variables*
   <New> (For Win2K users only)
   Variable: **PERVIGIL_HOME**
   Variable Value: **C:\PerVigil**
   <OK> (or **<Set>** for WinNT users)
   Exit from System Properties:
   <OK> and **<OK>** or **<Apply>** and **<OK>** (for WinNT)

3. From Windows Explorer (or My Computer), change directory to **<cdrom_drive:>**

4. Double-click on: **setup_Cygwin.bat** and follow the prompts:

   NOTE**:** The CRON Service is now started. This can be verified with either:
   For Win2K - **Start** / **Settings** / **Control Panel** / **Administrator Tools** / **Component Services**
   For WinNT - **Start** / **Settings** / **Control Panel** / **Services**

5. OPTIONAL**:** Complete the next section **Configuring Cygwin and Windows**.

Configuring Cygwin and Windows:

This section is ***optional***, but highly recommended. The below changes to the Command windows enables copy/paste functionality. Simply highlight the text to be copied, right-click to Mark (copy) the text, in the same or different window right-click again to paste the text.

1. **Right-click** on the Cygwin Icon on the Desktop and go to "**Properties**":

   Options tab:

   Check: Quick Edit Mode

   Check: Insert mode

   Layout tab:

   Screen Buffer Size: Height = **1000**

   <Apply> and **<OK>**

2. **Start** / **Programs** / **Cygwin** / **Cygwin Bash Shell**, then **right-click** on title bar and go to "**Properties**":

   Options tab:

   Check: Quick Edit Mode

   Check: Insert mode

   Layout tab:

   Screen Buffer Size: Height = **1000**

   Click **<OK>**, then **Check**: "Modify shortcut that started this window" and **<OK>**

3. **Start** / **Run**, then enter "**cmd**" and **<Enter>**, then **right-click** on the title bar and go to "**Properties**":

   Options tab:

   Check: Quick Edit Mode

   Check: Insert mode

   Layout tab:

   Screen Buffer Size: Height = **1000**

   Colors tab:

   Change "Screen Background" to "**Dark Blue**", this allows the user to easily distinguish between a *Command* Window and a *Cygwin* Window.

   Click **<OK>**, then **Check**: "Save properties for future windows with same title" and **<OK>**

Uninstall Cygwin on the PVLmon Server:

This section is ***optional***, because it is not necessary to remove Cygwin from the OV server. There would be a lot of functionality lost by doing so.

NOTE**:** Substitute the path of (**C:\PerVigil**) with the full path of the PerVigil directory.

1. Log in as "*Administrator*"

2. In a Cygwin window, enter the following commands to stop CRON:

   cygrunsrv -R cron

   NOTE**:** This command stops the CRON Service and removes it from starting again.

3. ***WARNING*****:** Performing this step means that all other PerVigil modules have already been removed or will be removed as well. Please verify before continuing.

   Either, in Windows Explorer (or My Computer), change the directory (folder) to: **C:\ right-click** on the "*PerVigil*" directory and select "**Delete**"

   Or if you wish to retain some PerVigil modules, then:

   In Windows Explorer (or My Computer), change the directory (folder) to: **C:\PerVigil** and **right-click** on the *bin, etc, home, lib, sbin, tmp, usr, var, cygwin.*, setup.** directories/files and select "**Delete**"

PVLmon v3.0
Install Guide for Win32
for HP OpenView
Performance Insight

Prerequisites before installing PVLmon:

1. OVPI (TREND) and Oracle or Sybase should be installed first on Windows 2000 or NT v4.0, but is not absolutely necessary.

2. Cygwin needs to be installed on the OVPI Server in the OVPI application directory as "PerVigil" (i.e. C:\PerVigil).

3. If using Oracle as the OVPI database, make sure the environment variable of {ORACLE_BASE} is properly setup. PVLmon uses this environment variable to determine where the Oracle "alert_{HOSTNAME}.log" file is located in order to parse the file looking for errors and warnings.

4. Java v1.4.2 will be installed only into the PerVigil home directory and will not affect any other Java installed applications. **This section can be skipped if OVPI v4.6 or v5.0 is already installed**. The Java from OVPI can be used instead. At the Command prompt, type "java -version" or "jre" to determine the version number or if installed at all.

   NOTE: **Do NOT install Java 1.4.2 in the default directory of "C:\Program Files\...". Install it only in "$PERVIGIL_HOME\Java".**

5. Contact PerVigil and obtain a temporary or permanent license file. The license can be e-mailed to you, but you must have a license ready to install to complete this process.

6. If PVLmon was downloaded from PerVigil's Web/FTP site, then unzip the install file into *C:\Temp\pvlmon_install* and use this directory name in place of <*cdrom_drive*>.

Install PVLmon on the OVPI Server:

NOTE: Substitute the path of (**C:/OVPI/PerVigil** or **C:/TREND/PerVigil**) with the full path of the PerVigil directory within the OVPI application directory wherever "OVPI" is installed.
Also substitute (**<cdrom_drive:>**) for the CD-ROM name (i.e. D: or E: or ...)

1. While logged in as "*trendadm*" or *"Administrator"*, insert the PVLmon install CD by PerVigil and follow the instructions below.

2. From Windows Explorer (or My Computer), change the directory to **<cdrom_drive:>**

3. Double-click on: **setup_PVLmon.bat** and follow the prompts:

```
#=============================================================================#
# Copyright  : 2000-2004 PerVigil Inc. (www.pervigil.com) All rights reserved.#
#                                                                             #
# Description: Windows Install for PVLmon for OVPI 5.X, 4.X & TREND 3.X       #
#                                                                             #
# Version Num: v3.0                                                           #
#=============================================================================#
```

Do you wish to install PVLmon v3.0 for Windows: ([y]/n/q) **y**

Installing PVLmon v3.0 for Windows

You will be asked to install the following sections:

1. PerVigil Home Directory
2. PerVigil Utilities for OVPI (TREND)
3. PerVigil Aliases for OVPI (TREND)
4. Java v1.4.2 for CYGWIN_NT-?.0
5. PerVigil PVLmon v3.0
6. finally, schedule Crontab entries for PVLmon

Each section can be skipped and repeated if necessary.

Finding the PVLmon Install Image location...
Using the PVLmon Install Image location of: /cygdrive/c (a.k.a. C:)

Is this correct? If not, enter the pathname to the PVLmon install programs
(i.e. 'D:' or 'E:' or 'C:/temp' or 'C:/temp/pvlmon_install' or ...)
([y]/q/pathname): **y**

Using the PVLmon Install Image location of: /cygdrive/c

Detected that PVLmon will be used for OV version: OVPI5x on Oracle

INSTALL NOTE: This initial startup section determines where the PVLmon install directory is located. Either on the PVLmon CD-ROM or in a temp directory.

```
#=============================================================================#
Setting up the PerVigil Home Environment

Checking if the PERVIGIL_HOME Env variable already exists...
The PerVigil Home environment variable exists.

Do you wish to create the PerVigil Home directory: ([y]/n/q) y

Creating the PerVigil home directory as: {PERVIGIL_HOME}
The PerVigil Home directory of {PERVIGIL_HOME} already exists
The PerVigil bin directory of {PERVIGIL_HOME}/bin already exists
Making the PerVigil Docs directory
Making the PerVigil Java directory
Making the PerVigil Log directory


Completed section for creating the PerVigil Home directory
```

INSTALL NOTE: This section creates the PerVigil home directory (i.e. "C:\PerVigil"), then creates PVLmon sub-directories.

```
#=============================================================================#
Do you wish to install PerVigil Utilities (highly recommended): ([y]/n/q) y

Copying PVL Utilities into {PERVIGIL_HOME}/bin
        pvlarchivelog.sh,  timeit,  psovpi,  psovpidb

Running timeit to create the Time.log file

Appending PerVigil Log Archiving entries into C:\OVPI\lib\trendtimer.sched

Completed section for installing the PerVigil Utilities
```

INSTALL NOTE: This section adds the PerVigil utilities (listed above) that are used by PVLmon. These utilities are standalone (not dependant on PVLmon) and can be modified as desired.

If any of the above utilities already exists (like timeit), this install process will skip over that utility.

There are other utilities on the PVLmon CD which are NOT installed, but available if required.

```
#=============================================================================#
Do you wish to install PerVigil aliases for OVPI: ([y]/n/q) y

Copying Alias setup files into /home/Administrator
Copying Login setup files into /home/Administrator

/home/Administrator/.profile exists, moving to .profile_PVLmon_v3.0_orig
/home/Administrator/.cshrc exists, moving to .cshrc_PVLmon_v3.0_orig
/home/Administrator/.bashrc exists, moving to .bashrc_PVLmon_v3.0_orig

Completed section for installing the PerVigil Aliases
```

INSTALL NOTE: This section installs very useful Unix aliases for OVPI. These aliases allow the user to change directories to various OVPI and database related directories and view (tail) log files for problem determination. Just type "alias" at the command prompt to familiarize yourself with the aliases.

```
#=============================================================================#
Do you wish to install Java for CYGWIN_NT-?.0
NOTE:  If OVPI v4.6 or v5.0 is installed, this step is
not necessary.  The Java for OVPI can be used instead: ([y]/n/q) y

Launching a GUI Install Wizard to install Java v1.4.2

WARNING: Do NOT install Java 1.4.2 in the default directory
         of 'C:\Program Files\...'.  Install it ONLY in
         ${PERVIGIL_HOME}\Java

Press <Enter> to continue:

Installing Java v1.4.2 for Win32 into {PERVIGIL_HOME}/Java
Starting JRE_Win32_1.4.2.exe in /cygdrive/c

Running Java to verify install process and version number.
Please verify the output from Java:

java version "1.4.2_03"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_03-b03)
Java HotSpot(TM) Client VM (build 1.4.2_03-b03, mixed mode)

Completed section for installing Java
```

INSTALL NOTE: This section will startup a GUI Install program and install Java v1.4.2 for the Operating System of the OVPI Server. If OVPI v4.6 or v5.0 is installed, the Java that is installed with OVPI can be used instead. PVLmon will look for Java installed in the PerVigil directory, then in the OVPI directory.

Also, when the Java install process is finished, the installed Java version number will be displayed. It will mention "Java v1.4.X", but the rest of the syntax may be a little different than what's shown above.

```
#=========================================================================#
Finally, Now do you wish to install PVLmon: ([y]/n/q) y

Copying PVLmon into {PERVIGIL_HOME}/PVLmon
Copying PVLmon Docs into {PERVIGIL_HOME}/Docs

Linking {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh to {PERVIGIL_HOME}/bin/pvlmon

Copying in the default PVLmon Config file of:
AMON_Default.Config_Win32_v5.0_Oracle in as AMON_Default.Config


Completed section for installing PVLmon
```

INSTALL NOTE: This section installs PVLmon into the {PERVIGIL_HOME} directory, then links the startup calling script into the {PERVIGIL_HOME}/bin directory. Lastly the appropriate PVLmon configuration file is copied into place.

```
#=========================================================================#
Do you wish to install PVLmon hourly & daily schedule into Crontab: ([y]/n/q) y

Adding the Cron tab entries into the crontab file for the user 'trendadm'
# DO NOT EDIT THIS FILE - edit the master and reinstall.
# (/tmp/install_Pvlmon_crontab.txt installed on Thu May  9 19:44:35 2004)
# (Cron version -- $Id: crontab.c,v 1.5 2001/07/09 09:46:25 corinna Exp $)
#
# Run PVLmon every hour (page) and every day (email) after rollups (7:54am)
# or at the end of the day (11:54pm) looking for potential OV issues.
#59 * * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -p > /dev/null 2>&1
# Creates a daily PVLmon report after the morning rollups
#54 7 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Creates a daily PVLmon report for the entire day
#54 23 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh -e > /dev/null 2>&1
# Archive and compress the PVLmon daily log file
0 0 * * * {PERVIGIL_HOME}/PVLmon/bin/pvlarchivelog.sh {PERVIGIL_HOME}/Log/
PVLmon_Archive.log


Completed section for installing Crontab
```

INSTALL NOTE: This section installs the required PVLmon entries into CRON's trendadm" crontab file.

Note that the Cron entries are commented out and will need to be uncommented when PVLmon is ready for production.

```
#=============================================================================#
#=============================================================================#
# PVLmon INSTALL IS ALMOST COMPLETE, Please follow the instructions below   #
#=============================================================================#
#=============================================================================#

Press <Enter> to continue:

Now that the install is complete, there is still configuration editing
that needs to be performed:


NOTE: (for TREND v3.X users) Add $TRENDWEB_HOME for the TRENDweb related aliases.

      Click on:  Start / Settings / Control Panel -> System
         For WinNT users:  select Environment tab
         For Win2K users:  select Advanced tab, then <Environment Variables>

      Add a new variable within System variables
         <New>  (For Win2K users only)
         Variable:        TRENDWEB_HOME
         Variable Value:  C:\TREND\TRENDweb (or whatever the correct path is)
         <OK>   (or <Set> for WinNT users)
      Exit from System Properties:
      <OK>  and  <OK>


1. Bring up a new Cygwin window to activate the PerVigil environment.


2. Copy in the license file you received from PerVigil into
      ${PERVIGIL_HOME}/PerVigil/PVLmon/lib


3. Modify the default config file of AMON_Default.Config and make the following
   changes:
   a. Modify "mail.<Company_Name>.com" to the company mail server name,
   b. Modify "<Company_Name>" to a short company name/initials,
   c. Uncomment/comment out processes to check in the CHECK_PROCESS section,
   d. Modify ports in use in the OVPI Server in the CHECK_PORTS section,
   e. Update the disk partitions to check in the CHECK_FS section,
   f. Add new lines in the CHECK_TABLE section to monitor all important tables:

      vi ${PERVIGIL_HOME}/PVLmon/etc/AMON_Default.Config


4. Modify the E-mail and Pager file of PVLmon_Email_Pager.List and make the
   following changes:
   a. Add e-mail address entries to the variable name of "AMON_EMAIL" along with a
      comment of who this e-mail belongs to.  One e-mail address per AMON_EMAIL
      variable and create as many entries as necessary.
   b. Add pager number/address entries to the variable name of "AMON_PAGER" along
      with a comment of who this pager belongs to.  One pager number per AMON_PAGER
      variable and create as many entries as necessary.

      vi ${PERVIGIL_HOME}/PVLmon/etc/PVLmon_Email_Pager.List
```

5. OPTIONAL: If necessary (such as Java is not installed into the directory of *c:/{PERVIGIL_HOME}/Java*, modify any User definable variables including the full pathname to the **"java"** command in the PVLmon calling script.

   vi ${PERVIGIL_HOME}/PVLmon/bin/pvlmon.sh

6. OPTIONAL: Move the "log_backup" lines that were added during this install process at the bottom of the trendtimer.sched file to the appropriate section which deals with backing up the log files:

   vi ${DPIPE_HOME}/lib/trendtimer.sched

7. Test PVLmon by typing **"pvlmon"** in a NEW Cygwin window and editing the *AMON_Default.Config* file until the PVLmon results are what is to be expected.

   NOTE: The first run through PVLmon will complain that it is updating various "history" files for comparison when PVLmon is run again.

8. When ready for production, log back in as "*trendadm*" and within a Cygwin window, uncomment the entries in the Crontab file so PVLmon will begin checking the OVPI Server every hour looking for potential issues and supplying you with a daily log file that shows the status of OVPI and the results of the morning rollups.

   crontab -e

   NOTE: Use the cursor keys to move around the file and the **"x"** key to delete a single character. Uncomment the crontab entries by removing the "#" character at the beginning of the two bottom lines. Use **"ZZ"** to save and quit the file.

Please refer to the installation instructions in the 'PVLmon Users Guide' to obtain a printable version of the above post-install configuration steps.

For a helpful cheat sheet to the VI editor, please refer to these quick and easy web sites: <http://www.kcomputing.com/vi.html>
<http://cac.uvi.edu/miscfaq/vi-cheat.html>

For support, questions, and comments, please contact PerVigil at:
support@pervigil.com
(+1) 972-759-0228

Thank you for using PVLmon!