HP Performance Agent

For the Linux Operating System

Software Version: 4.70

Installation and Configuration Guide

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1 Installing or Upgrading HP Performance Agent

Introducing HP Performance Agent

HP Performance Agent captures performance, resource, and transaction data from your Linux system. Using minimal system resources, the software continuously collects, summarizes, time stamps, and detects alarm conditions in current and historical resource data across your system.

Performance Agent is now supported on VMware ESX Server. For more information, refer to the section titled Performance Agent on a Virtualized Environment on page 15.

You can analyze the data using local export capabilities, or complementary HP Software products such as HP Reporter and HP Performance Manager 4.0 and later. Also, Performance Agent provides data access and sends alarm notifications to HP Network Node Manager (NNM) and HP Operations Manager.



Performance Manager in this document refers only to version 4.0 and later for UNIX and Windows platforms. Performance Manager 3.x (PerfView) does not connect to Performance Agent for Linux.

Performance Agent uses Data Source Integration (DSI) technology to receive, alarm on, and log data from external data sources such as applications, databases, networks, and other operating systems.

The comprehensive system performance data recorded and stored by Performance Agent from your system allows you to perform the following tasks:

- Characterize the workloads in the environment.
- Analyze resource usage and load balance.
- Perform trend analyses on historical data to isolate and identify bottlenecks.

- Respond to error conditions.
- Perform service-level management based on transaction response time.
- Perform capacity planning.
- Solve system management problems before they arise.

For a comprehensive description of HP Performance Agent, see the *HP Performance Agent for UNIX User's Manual*.



If you are installing Performance Agent 4.70 on a system which has HP Software products such as HP Operations Agent, HP Operations Manager Unix Management Server, HP Performance Manager, HP Performance Insight, and OV Internet Service, it is recommended to restart them after Performance Agent 4.70 installation is completed.

Installation Requirements

Before installing HP Performance Agent, make sure that your system meets the requirements described in this section.

Supported Architecture and Operating System Versions

The table below lists the supported architecture and operating system versions.

Architecture	Operating System		
On 32-bit Intel Pentium (x86)	• RedHat Enterprise Linux (ES/AS/WS) 3, 4, and 5		
	• SuSE Enterprise Server 9.x and 10.x		
	• Debian 3.0 r2/r3/r4, 3.1		
	• Asianux 2.0 and 3.0		
	 TurboLinux Server 8 and 10 		
	• VMware ESX server 2.5.x and 3.0.x		
On 64-bit systems (x86_64)	• RedHat Enterprise Linux (ES/AS/WS) 3, 4, and 5		
	• SuSE Enterprise Server 9.x and 10.x		
	• Asianux 2.0 and 3.0		
	• VMware ESX server 2.5.x and 3.0.x		
On 64-bit systems (IA64)	• RedHat Enterprise Linux (ES/AS/ WS) 4 Update 4		
	• RedHat Enterprise Linux (ES/AS/WS) 5		
	• SuSE Enterprise Server 10.x		

Disk Space

Performance Agent installs in the /opt/perf/ and /opt/OV/ directories and creates its log and status files in the /var/opt/perf/ and /var/opt/OV/ directories.

- For first time installation of Performance Agent, approximately 50 MB of disk space is required in the /opt/perf/ and /opt/OV/ directories.
- For Performance Agent databases and status files, allow for 125 MB of disk space in the /var/opt/perf/ and /var/opt/OV/ directories.

When Performance Agent is first installed, the default parm file is set up to collect a maximum of approximately 60 MB of log file data.

You can modify the parm file and restart scopeux to change the size of the log files. For information about modifying the parm file and how it is used to limit and configure log file data storage, see Chapter 2 of the *HP Performance Agent for UNIX User's Manual*.



If you are adding new hardware or making any configuration changes, it is recommended to stop scopeux and restart it to make the changes to take effect.

Install or Upgrade Procedures

Performance Agent is on DVD-ROM installation media. The size of the product is approximately 60 MB, including the product documentation.

Upgrade

If you have previously installed Performance Agent or GlancePlus on the system, you must perform the following tasks:

- Stop any performance tools or processes that may be running. For instructions, refer to the section Stopping Active Performance Tool Processes.
- Install Performance Agent. For instructions to install Performance Agent, refer to the section, Installing Performance Agent.

First time Installation

If you are installing Performance Agent for the first time, for instructions, refer to the section, Installing Performance Agent.

Stopping Active Performance Tool Processes

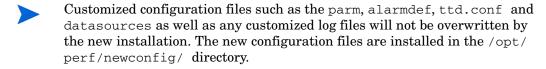
- 1 Log in as root.
- 2 Run perfstat to check for active performance tools by typing:

/opt/perf/bin/perfstat

If perfstat reports any active performance tool processes, stop them. (Make sure that you have exited these tools before doing so.)

3 If a previously installed version of Performance Agent is running, stop it by typing:

/opt/perf/bin/ovpa stop



4 Make sure the midaemon (measurement interface daemon) is not active by typing:

```
ps -ef | grep midaemon
```

If the midaemon is still active, type:

```
/opt/perf/bin/midaemon -T
```

5 Make sure the ttd (transaction daemon) is not active by typing:

```
ps -ef | grep ttd
```

If the ttd is still active, type:

/opt/perf/bin/ttd -k

- If you stop ttd, you must stop all ARM-instrumented applications that are running before you restart ttd and Performance Agent processes.
 - 6 Run perfstat again to ensure that no performance tools or processes are active. When all tools or processes have been stopped and your customized configuration files are backed up, proceed with the installation.

Installing Performance Agent

- If you are installing on Debian, please see Installing Performance Agent on Debian on page 14.
 - 1 Make sure you are logged in as **root**.
 - 2 Insert your installation DVD-ROM into the drive.

Typically, Linux systems are configured to automatically mount the DVD-ROM. If your system is not configured to automount the DVD-ROM, then you must manually mount it in the File Manager, or enter the command:

mount -t <type> <device> <dir>

where $\langle type \rangle$ is the file system type, $\langle device \rangle$ is the DVD-ROM device and $\langle dir \rangle$ is where the DVD-ROM directory will be mounted. For example:

```
mount -t iso9660 /dev/dvdrom /mnt/dvdrom
```

- 3 Open a terminal window. Run the ovpa.install script from the command line.
- 4 In the terminal window, change your present working directory by typing:

```
cd /<directory>
```

where *<directory>* is your DVD-ROM directory.

- 5 Type **1s** to verify that you are in the correct directory. You will see the README file, the ovpa.install and glance.install scripts, and the paperdocs, packages, and ReleaseNotes subdirectories.
- 6 Run the installation script by typing:

./ovpa.install

The ovpa.install script includes command line options for more advanced installations. The syntax of the command is:

The command line options have the following meaning:

- -n Do not prompt for ovpa start at the end of installation
- -f Force installation (--force, --nodeps)
- -v Verbose installation

Performance Agent installation is now complete.

By default, the Performance Agent processes are configured to start automatically upon reboot. See Starting and Stopping Performance Agent on page 20.

Chapter 2, "Starting Up and Running Performance Agent", describes tasks you may wish to perform to configure Performance Agent to support your environment.



For more information and details about new features and changes in Performance Agent, see the Release Notes, in /opt/perf/ReleaseNotes/OVPA.

Installing Performance Agent on Debian

On Debian, you must first install /usr/bin/rpm (RedHat Package Manager) if it is not already installed on your system. Performance Agent requires rpm for the installation.

If rpm has not been used previously, follow these steps:

- 1 Make sure you are logged in as **root**.
- 2 Create the rpm database by typing:

```
# mkdir /var/lib/rpm
# rpm --initdb --dbpath /var/lib/rpm
```

Follow Steps 2 through 6 in the section Installing Performance Agent on page 12.

Installing Performance Agent Using Operations Manager

If you are using Operations Manager for UNIX 8.x or later, you can install Performance Agent from the management server to a Linux managed node.

For installation instructions on Operations Manager for UNIX versions 8.x, please see Chapter 4, "HP Performance Agent," in the *HP Operations Manager Administrator's Reference*.

Performance Agent on a Virtualized Environment

This version of Performance Agent is supported on VMware ESX Server. Performance Agent should be installed on service console of VMWare ESX Server. For more information, refer to the section Performance Agent on the Service Console.

This version of Performance Agent also supports monitoring of Virtual Machines (VMs) hosted on VMWare ESX Server 2.5.2 and later. For more information, refer to the section Performance Agent on a Virtual Machine.



Performance Agent on the Service Console

Performance Agent can be installed on the service console and the systems hosted on VMWare ESX Server. For installation procedures, refer to the section Install or Upgrade Procedures. Performance Agent captures the following:

- System wide performance and physical system resource usage data.
- Individual Guest's performance and physical system resource usage data.
 A new class of metrics, BYLS, is introduced to record performance and resource data for individual guest operating systems.
- For complete list of metrics and descriptions, refer to the *Dictionary of Performance Metrics*.

Performance Agent on a Virtual Machine

This version of Performance Agent supports monitoring of Virtual Machines (VMs) hosted on VMWare ESX Server 2.5.2 and later. For installation procedures refer to the section, Install or Upgrade Procedures.

Install **VMWare Tools** on the VM. Performance Agent installed on a VM, hosted on VMWare ESX Server 2.5.2 and later, requires VMWare tools to recognize the virtual machine as a Guest operating system.

On VMs hosted on VMWare ESX Server 3.0.1, enable the VMware Guest API on the VMs. To capture the Virtual Machine's utilization of physical resources of a system, Performance Agent uses the VMWare Guest API. For more information about VMware Guest API, refer to latest documentation available on VMware Guest SDK from VMWare.



For complete list of metrics and descriptions, refer to the *Release Notes* and *Dictionary of Performance Metrics*.

The following table lists all the features which are supported and not supported in a virtualized environment:

Features/ Functionalities	Linux	VMware ESX Server
Alarming	Available	Available
Data Source Integration capabilities	Available	Available
Application metric class	Available	Not available
BYLS metric	Not available	Available
proc metric	Available	Not available
Transaction metric class	Available	Not available
Table class	Available	Not available
ARM	Available	Not available

Removing Performance Agent

If you want to remove Performance Agent from a system, run the ovpa.remove script available in the <code>/opt/perf/bin/</code> directory. Before removing Performance Agent, this script will check to see if you want to remove log and data files that were created.

The script supports the following command line options for a more flexible product removal. The syntax of the command is as follows:

ovpa.remove [-f][-h][-r]

- -f Force removal. Do not prompt for confirmation before removing the product (non-interactive mode).
 - **NOTE:** This option will also remove GlancePlus, if it is installed.
- -h Help: Displays this usage message.
- -r Remove the Performance Agent configuration, data, and product files.

NOTE: Combining the f and r options does not prompt for confirmation and removes all product, configuration, and data files including GlancePlus, if it is installed.

Some product packages may remain installed on the system, if those packages are shared across other HP Software products and are required by other tools. Such packages will be removed only when the last tool requiring them is also removed.

2 Starting and Running HP Performance Agent

This chapter describes the tasks involved in starting up and running Performance Agent after it has been installed on your system. The chapter covers the following:

- Starting and Stopping Performance Agent
- Communicating Across a Firewall
- Configure Performance Agent Ports
- Configuring Secure Communication
- Configuring Data Sources
- Defining Alarms



If you are planning to log data from other sources using data source integration (DSI), read the *HP Performance Agent for UNIX Data Source Integration Guide*.

Performance Agent supports the HTTP data communication mechanism on Linux.

Starting and Stopping Performance Agent

When installation is complete, Performance Agent can be started. If you ever need to stop, start, or restart Performance Agent, the ovpa script lets you stop or restart currently running processes.

To start Performance Agent and its processes:

- 1 Log in as root.
- 2 Type: /opt/perf/bin/ovpa start

The ovpa start script starts Performance Agent and all its processes, including the scopeux (data collector), midaemon (measurement interface daemon), ttd (transaction tracking daemon), coda, ovc, ovbbccb, and the alarm generator. As the script executes, the status of the processes that are started is displayed on the screen.

You can stop Performance Agent processes while they are running and restart them using the ovpa script and its appropriate options.

- ovpa stop stops all Performance Agent processes except ttd (the transaction tracking daemon), ovc, and ovbbccb. These processes must always be running. If Operations Manager agent is running on the system, ovpa stop does not stop the coda daemon.
- If you must stop ttd, any ARM-instrumented applications that are running must also be stopped before you restart ttd and Performance Agent processes.
 - ovpa restart server causes coda to stop and then start, temporarily disabling alarming and access for clients such as Performance Manager, and reread the datasources file. It also stops and then starts the perfalarm processes and rereads the alarmdef file.
 - ovpa restart causes scopeux and the server processes to temporarily stop and then start. It reads the parm file as well as forces the transaction daemon ttd to reread its configuration file ttd.conf.
 - ovpa restart alarm causes the alarm generator process to reread the alarmdef file so that if you have made changes to the file, the new alarm definitions will take effect without restarting all Performance Agent processes. This action does not disrupt other processes.

Starting and Stopping Automatically

The process of automatically starting Performance Agent whenever the system restarts, and of stopping whenever the system shuts down is controlled by the Performance Agent system startup and shutdown script and the Performance Agent startup configuration file, which varies according to the specific requirements of your Linux distribution as follows:

Table 1 Performance Agent Startup Scripts and Configuration Files

Linux Distribution	Performance Agent Startup and Shutdown Script	Performance Agent Startup Configuration File
Red Hat	/etc/rc.d/init.d/ovpa	/etc/sysconfig/ovpa
SuSE	/etc/init.d/ovpa	/etc/ovpa.conf
TurboLinux	/etc/rc.d/init.d/ovpa	/etc/sysconfig/ovpa
Debian	/etc/init.d/ovpa	/etc/ovpa.conf
ESX Server	/etc/rc.d/init.d/ovpa	/etc/sysconfig/ovpa

The Performance Agent startup configuration file contains various environment variables that control the behavior of Performance Agent at system startup. This file is a source file for the Performance Agent system startup and shutdown script.

You can modify the following environment and shell variables to change the default behavior of Performance Agent:

- OVPA_START controls the auto-start of Performance Agent whenever your system restarts. The variable can have one of the following values:
 - 0 Do not start Performance Agent at system startup
 - 1 Start Performance Agent at system startup
- The OVPA_START_COMMAND is a variable that specifies the script options that are used to start Performance Agent whenever your system restarts. Normally, the variable is set to:



The Performance Agent startup configuration file is not overwritten when Performance Agent is patched or updated, so that any customizations you made are preserved.

Status Checking

Several status files are created in the /var/opt/perf/ and /var/opt/OV/ directories when Performance Agent is started. You can check the status of all or some Performance Agent processes using the perfstat command.

The following status files contain diagnostic information you can use to troubleshoot problems that may arise with the Performance Agent processes.

```
/var/opt/perf/status.scope
/var/opt/perf/status.perfalarm
/var/opt/perf/status.ttd
/var/opt/perf/status.mi
/var/opt/OV/log/coda.txt
```

Examples Directory

The <code>/opt/perf/examples/</code> directory contains examples of configuration, syntax, and sample program files that can be used to customize your HP Performance Tools. For example, the <code>/opt/perf/example/config/</code> subdirectory contains sample alarm definitions and examples of parm file application-specific parameters. For more information, see the <code>/opt/perf/examples/README</code> file.

Communicating Across a Firewall

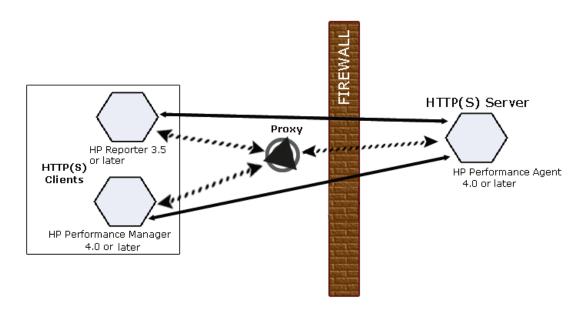
A firewall can be defined as a method for filtering the flow of data between one network and another. Performance Agent now supports HTTP based communications interface for data access between client and server applications, in addition to the previously supported communication mechanism through a packet-filtering network firewall. Performance Agent internally uses the Black Box Communication (BBC) component to implement HTTP based data communication. The BBC component provides a firewall-friendly single-port communication infrastructure based on HTTP or HTTPS (BBC5). The HTTP based interface is flexible, as it can use proxies, requires fewer ports, and is firewall friendly.

If a network firewall exists between two systems, Performance Manager and Reporter can get data from the Performance Agent system.



The name Performance Manager is used throughout this document to refer to Performance Manager versions 4.0 and later. Performance Manager 3.x does not connect to Performance Agent for Linux systems.

Figure 1 Communicating with Performance Agent in a Firewall Environment



For firewall configuration it is important to know which system initiates the communication (client) and which receives communication requests (server), so that the firewall rules can be set up accordingly. In a typical remote communication, a client, using the source port, connects to a server that is listening on the destination port on a remote system. Understand your firewall environment including the client and server data flow. To configure communications with Performance Agent in a firewall environment, perform the following tasks:

- 1 Configure Performance Agent Ports.
- 2 Configure HTTP Clients in a Firewall Environment.
- 3 Verify Firewall Configuration.

Figure 1 on page 24 shows how Performance Agent communicates with Reporter (version 3.5 or later) and Performance Manager (Performance Manager version 4.0 or later) through a firewall. Performance Agent is an

HTTP or HTTPS server. Reporter and Performance Manager 4.x are HTTP clients. Performance Manager 5.0 can be an HTTP or HTTPS client. If an HTTP proxy is used, Reporter and Performance Manager communicate with Performance Agent via the proxy.



For Linux users, if you cannot upgrade Performance Manager 3.x to Performance Manager 4.0 or later, you must access the Performance Agent for Linux data locally via the extract program's export function.

Configure Performance Agent Ports

You can configure Performance Agent ports in a firewall environment in one of the two ways:

- Configure Two-Port Communication
- Configure Single-Port Communication
- Verify Port Settings

On the Performance Agent system using BBC5, by default, the BBC communication broker uses port 383 and coda uses a dynamically allocated port.

Configure Port Settings for the BBC Communication Broker

You can configure the port settings of the default port used by the BBC communication broker. Use the <code>ovconfchg</code> command to change the port settings on the Performance Agent system. You can use one of the following options:

- ovconfchg -ns bbc.cb -set SERVER_PORT <port>
 (Or)
- ovconfchg -ns bbc.cb.ports -set PORTS <domain>:<port>
 Example: ovconfchg -ns bbc.cb.ports -set PORTS
 xyz.abc.com:50383

The second option is the preferred way of changing ports.

Restart Performance Agent using the following command:

ovpa restart server

Configure Two-Port Communication

By default, coda daemon uses a dynamically chosen second port, in addition to port 383 used by the BBC communication broker. You can configure the port settings of coda to listen at a well known port of your choice using the ovconfchg command. Type the following commands:

ovconfchg -ns coda.comm -set SERVER_PORT portnumber>

ovpa restart server

Using a dynamic port when connecting to Performance Agent remotely through a firewall can be difficult, because you may not know which firewall ports to open.

Configure Single-Port Communication

On the Performance Agent system, the BBC communication broker uses port 383 and coda uses a port that is dynamically allocated. You can configure the port settings for coda to share the same port used by the communication broker using the <code>ovconfchg</code> command. You can use one of the following options:

ovconfchg -ns coda.com -set SERVER_BIND_ADDR localhost
ovpa restart server

To enable two-port communication from single-port communication, type the following command:

ovconfchg -ns coda.comm -set SERVER_BIND_ADDR

Verify Port Settings

To verify the port settings, type the following command:

perfstat -d

The output displays the following information:

- port number of the port used by Coda
- port number of the port used by BBC communication broker

- the port settings configured
- indicates if secure communication is enabled
- indicates if coda metric collection is enabled

For example:

```
Datacomm configuration:

------

Coda Port 49552 (Dynamic)

Two port Communication

BBC communication broker port 383

SSL security NONE

Coda Metric Collection(Prospector) Disabled
```

Configure HTTP Clients in a Firewall Environment

There are two ways to configure HTTP clients in a firewall environment:

- Configuring HTTP Clients (Reporter/Performance Manager) with HTTP Proxy
- Configuring HTTP Clients (Reporter/Performance Manager) without HTTP Proxy

In both cases, to access data from Performance Agent nodes, only one port needs to be opened on the HTTP server (Performance Agent) side.

Configuring HTTP Clients (Reporter/Performance Manager) with HTTP Proxy

It is recommended that you use HTTP proxies when communicating through a firewall. This simplifies the configuration by using proxies that are often already in use in your environment. The firewall must be open for exactly one port if proxies are to be used in both directions. To access data collected by Performance Agent, ports for the HTTP server (Performance Agent) and the HTTP client (Reporter and Performance Manager) must be opened.



It is recommended that you do not change the default 383 port.

When an HTTP proxy is used, Reporter and/or Performance Manager for Windows and UNIX need to be configured to specify the proxy to be used to contact Performance Agent.

To configure Performance Manager versions 5.0 and later, and Reporter 3.7:

Type the following command,

```
ovconfchg -ns bbc.http -set PROXY proxy:port+(a)-(b)
```

The variables a and b are comma separated lists of hostnames, networks, and IP addresses that apply to the proxy. Multiple proxies may be defined for one PROXY key using the ";" or "," delimiter. "–" before the list indicates that those entities do not use this proxy, "+" before the list indicates that those entities do use this proxy. The first matching proxy is used.

To configure Reporter versions 3.6 and earlier, and Performance Manager 4.x:

Edit the /var/opt/OV/conf/BBC/default.txt configuration file.

In the [DEFAULT] section of the default.txt file, locate the lines that relate to the PROXY and set the PROXY parameter as follows.

```
PROXY web-proxy.hp.com:8088-(localhost, *.hp.com) + (*)
```

In this example, the proxy web-proxy will be used with port 8088 for every server (*) except requests for the local machine (localhost) and requests internal to HP (matching *.hp.com, for example **www.hp.com**.

Configuring HTTP Clients (Reporter/Performance Manager) without HTTP Proxy

If HTTP proxies are not available, additional configuration settings are required on the HTTP clients (Reporter and Performance Manager system).

If Reporter and Performance Manager for Windows are installed on the same system and both access Performance Agent in parallel, you can specify a port range as described in this section. If they are running on different systems, you can specify a single port for each. Depending on the versions of Performance Manager and Reporter you are using select from the following options:

Configure Performance Manager 5.0 and later, and Reporter 3.7 as follows:

Type the following command,

ovconfchg -ns bbc.http -set CLIENT_PORT cport range>

Where *port range>* is the range of ports you want to use.

For example:

ovconfchg -ns bbc.http -set CLIENT_PORT 14000-14003

Configure Reporter versions 3.6 and earlier, and Performance Manager 4.x as follows:

Edit the /var/opt/OV/conf/BBC/default.txt file as follows.

- Locate the lines that apply to CLIENT_PORT and uncomment the line; CLIENT_PORT =.
- 2 Specify the port range for the CLIENT_PORT parameter. For example:

```
CLIENT_PORT = c
```

Where *<port range>* is the range of ports you want to use. For example:

 $CLIENT_PORT = 14000-14003$

Verify Firewall Configuration

To verify your configuration, use the command:

```
ovcodautil -ping -n <system name>
```

This output of this command indicate the status of your communication settings.

Configuring Systems with Multiple IP Addresses

If your environment includes systems with multiple network interfaces and IP addresses and you want to use a dedicated interface for the HTTP-based communication, then you can use the parameters <code>CLIENT_BIND_ADDR</code> and <code>SERVER_BIND_ADDR</code> to specify the IP address that should be used.

• If you have multiple network interfaces and IP addresses on the Performance Agent (Server) system, specify the SERVER_BIND_ADDR parameter as follows:

ovconfchg -ns bbc.http -set SERVER_BIND_ADDR <IP Address>

• If you have multiple network interfaces and IP addresses on the Performance Manager 5.0 (client) system, specify the CLIENT_BIND_ADDR parameter as follows:

ovconfchg -ns bbc.http -set CLIENT BIND ADDR <IP Address>

• If you have multiple network interfaces and IP addresses on the Reporter/ Performance Manager 4.x system, specify the CLIENT_BIND_ADDR parameter.

Edit the /var/opt/OV/conf/BBC/default.txt file as follows:

a Locate the lines that apply to CLIENT_BIND_ADDR and uncomment the line

```
;CLIENT_BIND_ADDR =
```

b Specify the IP address for the CLIENT_BIND_ADDR parameter.

Configuring Secure Communication

Performance Agent supports certificate-based secure communication and client authentication based communication.

Using Certificates

Performance Agent supports certificate-based secure data communication only in the HP Operations Manager 8.x environment.

To configure secure communication on your Operations Manager setup, refer to the *HP Operations Manager for UNIX Firewall Concepts and Configuration Guide*. For more information on Operations Manager 8.x HTTPS agent, refer to the *HP Operations Manager HTTPS Agent Concepts and Configuration Guide*.

If you have already configured HTTPS communication in the Operations Manager 8.x environment, make the following changes to configure secure communication between Performance Agent and Performance Manager 5.0.



Reporter and Performance Manager 4.x do not support certificate-based secure communication.

On the Performance Agent system, set SSL_SECURITY to REMOTE for coda. Type the following commands:

ovconfchg -ns coda -set SSL_SECURITY REMOTE
ovcodautil -config

Using Client Authentication

Performance Agent enables optional authentication of client connections from products such as Performance Manager or Reporter. The authentication capability allows you to specify, for a given Performance Agent instance, which hosts are allowed to make client connections to that instance.

The Client Authentication feature enables or disables connections from any version of the Performance Manager and Reporter clients. Your client software does not need to be updated for you to take advantage of this feature.

For authorized clients the authentication process is transparent — their client connection proceeds as it has with previous versions of Performance Agent. Unauthorized clients receive a message indicating denial of service.

Enabling Authentication with the authip File

Authentication is enabled by the presence of a file called authip. On systems where HTTP communication is enabled, the authip file exists in the /var/opt/OV/conf/perf/ directory. The authip file lists hosts from which client connections are to be permitted.

- If the authip file exists in the /var/opt/OV/conf/perf/ directory, its contents determine which hosts are permitted client connections. Clients running on the same host as the Performance Agent instance are automatically authenticated, which means the clients do not need an entry. A zero-length authip file dictates that only clients running on the Performance Agent host can connect.
- If the authip file does not exist (the default) in the /var/opt/OV/conf/ perf/ directory, then no authentication is performed and any client will be allowed to connect, as was the case with prior Performance Agent versions.

The authip file is checked each time a client attempts to connect for service with Performance Agent. Performance Agent does not need to be restarted for changes to the authip file to become effective.

The Performance Agent client authentication capability requires that your network be able to resolve the client entries in the authip file. Depending upon the nature of the entries, this may require name services such as those provided by DNS, NIS, or /etc/hosts/ files.

A good test is to ensure that you can successfully ping each authip entry from the Performance Agent host. Client authentication works through a firewall with the same proviso that the client entries in the authip file be pingable from the Performance Agent host.

Formatting the authip File

The authip file must conform to the following format:

- One client host may be listed per line.
- Client entries can be in any one of the following formats:

- Fully qualified domain name
- Alias
- IP address (must be in IPv4 dotted quad format)
- Client entries can have no embedded spaces.
- A line containing a # in the first column is taken as a comment, and is ignored.
- Blank or zero-length lines are ignored.
- The IP address may not have a leading zero. For example, the IP address 23.10.10.10 cannot be represented as 023.10.10.10.

Thus, given an /etc/hosts entry as follows:

```
123.456.789.1 testbox testbox.group1.thecompany.com
```

any one of the following entries in the authip file would enable clients from the testbox host to connect:

```
#======= Examples of authip file entries =========
#
# Use of an IP address
123.456.789.1
#
# Use of an alias
testbox
#
# Use of a fully qualified domain name
testbox.group1.thecompany.com
#======= End of examples of authip file entries =======
```

Configuring Data Sources

Performance Agent uses the coda daemon to provide collected data to the alarm generator and analysis product. Each data source consists of a single log file set. The data source list that coda will access is maintained in the datasources configuration file that resides in the /var/opt/OV/conf/perf/ directory. When you first start up Performance Agent after installation, a default data source named SCOPE is already configured and provides access to the active scopeux log file set.

If you want to add other data sources, you configure them in the datasources file. Then, when you restart Performance Agent, the coda daemon reads the datasources file and makes the data available over datacomm linkages to analysis tools for each data source it finds.

Datasources Configuration File Format

Each entry you place into the datasources configuration file represents a data source consisting of a single log file set. The entry specifies the data source name and location. Fields are case-insensitive except for the log file path name. The syntax is:

datasource=datasource name logfile=logfile set

- **datasource** is a keyword. **datasource_name** is the name used to identify the data source. For example, the data source name used in alarm definitions or by analysis software. Data source names must be unique. They are translated into upper case. The maximum length for a data source name is 64 characters.
- **logfile** is a keyword. **logfile_set** is the fully-qualified name identifying the log file (created by the dsilog or scope process, ending in.log), and is case-sensitive.

Following are two examples of the datasources file's data source entries:

```
datasource=SCOPE logfile=/var/opt/perf/datafiles/logglob
datasource=ASTEX logfile=/tmp/dsidemo/log/astex/ASTEX_SDL
```

After updating datasources, use the ovpa restart server command to restart the coda daemon. First, ovpa restart server stops all coda processes. It then starts the coda daemon that rereads the datasources file and picks up any changes made to it.

Note that stopping the coda daemon processes results in any current connection in Performance Manager being lost. For example, if you are drawing a graph on a data source and try to draw another graph, you must reselect the data source in Performance Manager and re-establish the connection once the coda daemon is started again.

Examine the contents of the /var/opt/OV/log/coda.txt file to check if the coda daemon was activated or for error messages.

Deleting Data Sources

If you no longer want to view the log file data from Performance Manager or process alarms for the log file, you can modify the datasources file in the Performance Agent configuration directory, /var/opt/OV/conf/perf/ to remove the data source and path to the log file set. Then run the ovpa program to restart the coda daemon as described in Configuring Data Sources above.

You can also remove the log file set if you no longer need the data. If you remove the log file set but do not remove the data source from datasources, coda will skip the data source.

You might also choose to stop logging data to a log file set but keep the coda daemon open so you can view the historical data in Performance Manager. In this case, stop the dsilog process but don't delete the data source from the datasources file.

Parm File

The parm file is a text file that specifies configuration of the scopeux data collector including log file maximum sizes, interesting process threshold definitions, and application definitions. Comments in the file provide an overview of the various settings.

The parm file is provided with Performance Agent in the <code>/opt/perf/newconfig/</code> directory and is copied into the <code>/var/opt/perf/</code> directory during installation. For a complete description of the parm file and its parameters, see the "Parm File" section in Chapter 2 of the <code>HP Performance Agent for UNIX User's Manual</code>.

Defining Alarms

If you plan to use alarms to monitor performance, you must specify the conditions that generate alarms in a set of alarm definitions in the Performance Agent alarmdef file. When Performance Agent is first installed, the alarmdef file contains a set of default alarm definitions. You can use these default definitions or customize them to suit your needs.

For instructions on defining alarms, see the "Performance Alarms" chapter in the *HP Performance Agent for UNIX User's Manual*. This chapter also describes the alarm definition syntax, how alarms work, and how alarms can be used to monitor performance.

3 Documentation

This chapter describes the online and printable documentation for Performance Agent in the following topics:

- Performance Agent Documentation Set
- Viewing Documents on the Web
- Adobe Acrobat Files

Performance Agent Documentation Set

Performance Agent software includes the standard Performance Agent documentation set in viewable and printable file formats. You can view the Adobe Acrobat format (*.pdf) documents online and print as needed. ASCII text (*.txt) documents are also printable. However, you can view a text file on your screen using any UNIX text editor such as vi. The documents are listed in the following table along with their file names and online locations.

 Table 2
 Performance Agent Documentation Set

Document	File Name	Location
HP Performance Agent for Linux Systems Installation and Configuration Guide	ovpainst.pdf	/opt/perf/ paperdocs/ovpa/C
HP Performance Agent for UNIX User's Manual	ovpausers.pdf	/opt/perf/ paperdocs/ovpa/C
HP Performance Agent for UNIX Data Source Integration Guide	ovpadsi.pdf	/opt/perf/ paperdocs/ovpa/C
HP Performance Agent for UNIX and GlancePlus Tracking Your Transactions	tyt.pdf	/opt/perf/ paperdocs/arm/C
Application Response Measurement (ARM) API Guide	arm2api.pdf	/opt/perf/ paperdocs/arm/C
HP Performance Agent for Linux Metrics Definitions	metlinux.txt	/opt/perf/ paperdocs/ovpa/C
HP Performance Agent metrics list by Data Class for all operating systems	mettable.txt	/opt/perf/ paperdocs/ovpa/C

Viewing Documents on the Web

The listed.pdf and.htm documents can also be viewed on the HP Software Manuals web site at:

http://ovweb.external.hp.com/lpe/doc_serv

Select **Performance Agent** from the product list box, select the release version, select the OS, and select the manual title. Click **[Open]** to view the document online, or click **[Download]** to place the file on your computer.

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Adobe Acrobat Files

The Adobe Acrobat files were created with Acrobat 7.0 and are viewed with the Adobe Acrobat Reader versions 4.0 and later. If the Acrobat Reader is not in your Web browser, you can download it from Adobe's web site:

http://www.adobe.com

While viewing a document in the Acrobat Reader, you can print a single page, a group of pages, or the entire document.

From Linux, you can read a . PDF file by entering:

acroread filename.pdf

Configuring Coda

Introduction

Coda is a light weight data collection agent for HP Operations Agent. It is a subset of Performance Agent and acts as a communication conduit for Performance Agent. All the configuration parameters are configured under the namespaces coda and coda.comm using the command ovconfchg.

Coda namespace

The following table lists the configuration parameters for the namespace coda:

Parameters in coda namespace	Description	Default Value
DISABLE_PROSPECT OR	Used to disable data collection from coda datasource in a coexistence environment of HP Operations Agent and Performance Agent	false
ENABLE_PROSPECT OR	Used to enable data collection from coda datasource in a standalone environment of Performance Agent	false
SSL_SECURITY	Used to enable secure communication from coda	NONE
RESPONSE_SIZE_LIM IT	Used to specify the maximum amount of memory allocated by coda	104857600 (100 megabytes)

DISABLE_PROSPECTOR

Use this option to specify the data collection preferences through coda, when both the HP Operations Agent and Performance Agent are installed. The default value is false. The format is as follows:

ovconfchg -namespace coda -set DISABLE_PROSPECTOR $<\!value\!>$

- true: coda will not collect data for the Coda datasource
- false: coda will collect the data for the Coda datasource

ENABLE PROSPECTOR

Use this option to specify the data collection preferences through coda, when only Performance Agent is installed. The default value is false. This parameter will be ignored in a coexistence scenario. The format is as follows:

ovconfchg -namespace coda -set ENABLE_PROSPECTOR < value>

- true: coda will collect data for the Coda datasource
- false: coda will not collect data for the Coda datasource
- To verify if coda prospector is enabled, type the following command:

ovcodautil -dumpds coda

SSL SECURITY

Use this option to enable secure communication through coda. The default value is NONE. The format is as follows:

ovconfchg -namespace coda -set SSL_SECURITY < value>

- NONE: coda does not require SSL connections for either the local or remote clients
- REMOTE: coda requires all remote connections to use SSL
- ALL: coda requires all connections (both local and remote) to use SSL



Use this parameter only when certificates are present on the system. Certificates will be installed only if HP Operations Agent 8.x is present on the system.

RESPONSE_SIZE_LIMIT

Use this command to specify the maximum amount of memory allocated by the coda daemon for a query response. The default value is 104857600 (100megabytes). The format is as follows:

ovconfchg -namespace coda -set RESPONSE_SIZE_LIMIT < value >



If the specified limit is exceeded the following error message appears:

Response exceeds memory limits, use several smaller requests

Coda Communication namespace (coda.comm)

The following table lists the configuration parameters for the namespace $\verb"coda.com"$:

Parameters in coda.comm namespace	Description	Default Value
SERVER_PORT	Used to configure port settings	0
SERVER_BIND_ADDR	Used to specify bind address for the server port	INADDR_ANY
LOG_SERVER_ACCES S	If set to 'true', coda logs every access to the server providing the information about sender's IP address, requested HTTP address, requested HTTP method, and response status.	false

SERVER PORT

You can configure the port settings of the default port used by the coda. The default value for this port is 0. If the port is set to 0, the operating system will assign the first available port number. Use the <code>ovconfchg</code> tool to change the port settings on the Performance Agent system. Type the command:

ovconfchg -namespace coda.comm -set SERVER_PORT cport no>

SERVER BIND ADDR

Use this option to specify the bind address for the server port. When the value is set to localhost, all the communication to coda server happen through ovbbccb. The format is as follows:

ovconfchg -namespace coda.comm -set SERVER_BIND_ADDR $<\!Bind$ $address\!>$

LOG SERVER ACCESS

You can enable or disable the access to server using this option. If this option is set to true, coda records every access to the server, providing information about the senders IP address, requested HTTP address, requested HTTP method, and response status. This value typically will not be changed.

ovconfchg -namespace coda.comm -set LOG_SERVER_ACCESS < value >

Single Port Communication

This is the default communication method with Performance Agent 4.70. Use the following options to enable single port communication in coda:

```
ovconfchg -ns coda -set SSL_SECURITY REMOTE/ALL ovconfchg -ns coda.comm -set SERVER_BIND_ADDR localhost
```

Multi Port Communication

Use the following option to enable multi port communication in coda:

```
ovconfchg -ns coda.comm -set SERVER BIND ADDR ""
```

There are two methods to find out single port and multi port communication in coda:

You can use this option to verify if the port is used for single port or multi port communication from the local host machine:

```
bbcutil -reg
```

For single port communication,

```
BasePath=/Hewlett-Packard/OpenView/Coda/
Protocol=HTTPS
BindAddress=localhost
Port=59814
Authentication=NONE
```

If the value returned is local host or 127.0.0.1, then it is single port communication.

For multi port communication,

```
BasePath=/Hewlett-Packard/OpenView/Coda/
Protocol=HTTPS
BindAddress=ANY
Port=381
Authentication=NONE
```

If the value returned is any other value other than local host, then it is multi port communication.



bbcutil will be present in the <*Install Dir*>/bin directory.

You can use this option to verify if the port used is for singe port or multi port communication from a system other than local host:

ovcodautil -n <hostname> -ping

For example,

ovcodautil -n ovphpt4 -ping

For single port communication,

Ping of 'OvBbcCb' at: http://ovphpt4:383/Hewlett-Packard/ OpenView/BBC/ping' successful

Ping of 'Coda' at: 'http://ovphpt4:383/Hewlett-Packard/OpenView/ Coda/' successful

For multi port communication,

ovcodautil -n ovphpt4 -ping

Ping of 'OvBbcCb' at: 'http://ovphpt4:383/Hewlett-Packard/ OpenView/BBC/ping' successful

Ping of 'Coda' at: http://ovphpt4:62581/Hewlett-Packard/OpenView/Coda/'successful

The port numbers are different in the two outputs.

For the Coda clients, all the parameters in the coda.comm namespace override the parameters defined in the bbc.http namespace.

Communication Broker namespace (bbc.cb)

The following table lists the configuration parameters for the namespace bbc.cb:

Parameters in bbc.cb namespace	Description	Default Value
SERVER_PORT	Used to configure port settings	383
SERVER_BIND_ADDR	Used to specify bind address for the server port	INADDR_ANY

SERVER_PORT

You can configure the port settings of the default port used by the communication broker. The default value for this port is 383. Use the ovconfchg tool to change the port settings on the Performance Agent system. The format is as follows:

ovconfchg -namespace bbc.cb -set SERVER_PORT $< port \ no >$



If a port is already defined in the communication broker port namespace (bbc.cb.ports), the operating system assigns it as the default port and overrides the SERVER_PORT value.

SERVER_BIND_ADDR

Use this option to specify the bind address for the server port. The format is as follows:

ovconfchg -namespace bbc.cb -set SERVER_BIND_ADDR $<\!Bind$ $address\!>$

Communication Broker Port namespace (bbc.cb.ports)

The following table lists the configuration parameter for the name space ${\tt bbc.cb.ports:}$

Parameter in bbc.cb.ports namespace	Description	Default Value
PORTS	Used to define the list of ports for all the communication brokers in the network that may be contacted by the applications on this host. The client applications use this as target port to communicate with the communicate with the network. If the host name matches with one of the entries in this port settings, then the local communication broker port will be set to the port specified here.	The value of ports is not set by default.

PORTS

This configuration parameter must be same on all the nodes. To change the port number of a communication broker on a particular host, the hostname must be added to the parameter.

```
For example,
```

```
name.hp.com:8000
```

You can use an asterisk as a wild card to denote the entire network

```
*.hp.com:8001
```

You can use a comma or a semicolon to seperate entries in a list of hostnames.

```
For example,
```

```
name.hp.com:8000, *.hp.com:8001
```

In this example, all the hostnames ending with hp.com will configure their BBC communication broker to use port 8001 except the host "name", which will use port 8000. All the other ports uses the default port 383.

You can also use the IP addresses and asterisk (*) to specify the hosts.

For example,

```
15.0.0.1:8002, 15.*.*.*:8003
```

Run the following comamnd to set ports

```
ovconfchg -namespace bbc.cb.ports -set PORTS <port no>
```

HTTP namespace (bbc.http)

The following table lists the configuration parameter for the namespace bbc.http:

Parameters in bbc.http namespace	Description	Default Value
RESPONSE_TIMEOUT	Used to specify the maximum number of seconds to wait for a response	300
CLIENT_PORT	Used to specify bind port for the client requests	0
PROXY	Used to specify the proxy and port to be used for the specified hostname	The value of proxy is not set by default.

RESPONSE_TIMEOUT

Use this option to specify the maximum number of seconds to wait for a response. The default value is 300. The format is as follows:

ovconfchg -namespace bbc.http -set RESPONSE_TIMEOUT < value >

CLIENT_PORT

Use this option to specify the bind port for the client requests. The default value is port 0. The operating system assigns the first available port. This parameter is ignored for the requests to the localhost.



On the Windows system, this parameter should be defined on a large value because Windows system does not immediately release ports for reuse.

PROXY

Used to specify the proxy and port to be used for the specified hostname.

The format is as follows:

```
proxy:port+(a)-(b);proxy2:port2+(a)-(b); ...;
```

In this instance, the variables *a* and *b* are comma or semicolon separated lists of hostnames that apply to the proxy.

- a: for which the proxy shall be used
- b: for which the proxy shall not be used

The first matching proxy is chosen.

You can also use the IP addresses instead of hostnames. For example, 15.*.*.* is also valid, provided correct number of dots and colons are specified.

Glossary

alarm

An indication of a period of time in which performance meets or exceeds user-specified alarm criteria. Alarm information can be sent to an analysis system (such as Performance Manager) and to Operations Manager. Alarms can be identified in historical data log files using the utility program.

alarm generator

Handles the communication of alarm information. It consists of perfalarm and the agdb database. The agdb database contains a list of Performance Agent analysis nodes (if any) to which alarms are communicated, and various on/off flags that you set to define when and where the alarm information is sent.

alarmdef file

The file containing the alarm definitions in which alarm conditions are specified.

application

A user-defined group of related processes or program files. Applications are defined so that performance software can collect performance metrics for and report on the combined activities of the processes and programs.

application log file

See logappl.

coda daemon

A daemon that provides collected data to the alarm generator and analysis product data sources including scopeux log files or DSI log files. coda reads the data from the data sources listed in the datasources configuration file.

data source

Consists of one or more classes of data in a single scopeux or DSI log file set. For example, the Performance Agent SCOPE data source is a scopeux log file set consisting of global data. See also **datasources file**.

datasources file

A configuration file residing in the /var/opt/OV/conf/perf/ directory. Each entry in the file represents a scopeux or DSI data source consisting of a single log file set. See also **perflbd.rc**, **coda** and **data source**.

datasources configuration file

A configuration file residing in the /var/opt/OV/conf/perf/ directory. Each entry in the file represents a scopeux or DSI data source consisting of a single log file set.

data source integration (DSI)

The technology that enables Performance Agent to receive, log, and detect alarms on data from external sources such as applications, databases, networks, and other operating systems.

default.txt

A communications configuration file used to customize communication parameters for HP Software applications.

device

A device is an input and/or output device connected to a system. Common devices include disk drives, tape drives, DVD-ROM drives, printers, and user terminals.

device log file

See **logdev**.

DSI

See data source integration.

DSI log files

Log files containing self-describing data that are created by Performance Agent's DSI programs.

extract

A Performance Agent program that allows you to extract (copy) data from raw or previously extracted log files and write it to extracted log files. It also lets you export data for use by analysis programs.

extracted log file

A log file created by the extract program. It contains user-selected data ranges and types of data. An extracted log file is formatted for optimal access by the workstation analysis tool, Performance Agent. This file format is suitable for input to the extract and utility programs and is the preferred method for archiving performance data.

Glance

Glance (or GlancePlus) is an online diagnostic tool that displays current performance data directly to a user terminal or workstation. It is designed to assist you in identifying and troubleshooting system performance problems as they occur.

global

A qualifier that implies the whole system.

global log file

See logglob.

interesting process

A process becomes interesting when it is first created, when it ends, and when it exceeds user-defined thresholds for CPU use, disk use, response time, and so on.

log file set

A collection of files that contain data collected from one source.

logappl

The raw log file that contains measurements of the processes in each user-defined application.

logdev

The raw log file that contains measurements of individual device (such as disk and netif) performance.

logglob

The raw log file that contains measurements of the system-wide, or global, workload.

logindx

The raw log file that contains additional information required for accessing data in the other log files.

logproc

The raw log file that contains measurements of selected "interesting" processes. A process becomes interesting when it is first created, when it ends, and when it exceeds user-defined thresholds for CPU use, disk use, response time, and so on.

logtran

The raw log file that contains measurements of transaction data.

midaemon

A Performance Agent program that translates trace data into Measurement Interface counter data using a memory based MI Performance Database to hold the counters. This database is accessed by collector programs such as scopeux.

ovbbccb

The Operations Manager Communication Broker for HTTP(S) based communication controlled by ovc. See also coda and ovc.

ovc

The Operations Manager controlling and monitoring process. In a standalone Performance Agent installation, ovc monitors and controls coda and ovbbccb. If Performance Agent is installed on a system with Operations Manager for UNIX 8.x agent installed, ovc also monitors and controls Operations Manager for UNIX 8.x processes. See also coda and ovbbccb.

ovpa script

The Performance Agent script that has options for starting, stopping and restarting Performance Agent processes such as the scopeux data collector, alarm generator, ttd, midaemon, and coda. See also the ovpa man page.

Performance Manager

Provides integrated performance management for multi-vendor distributed networks. It uses a single workstation to monitor environment performance on networks that range in size from tens to thousands of nodes.

parm file

A Performance Agent file containing the parameters used by scopeux to customize data collection.

perflbd.rc

A configuration file residing in the /var/opt/perf/ directory. This file is maintained as a symbolic link to the datasources file. See also **datasources** file.

perfstat

A program that displays the status of all performance processes in your system.

process

Execution of a program file. It can represent an interactive user (processes running at normal, nice, or real-time priorities) or an operating system processes.

process log file

See logproc.

raw log file

Summarized measurements of system data collected by scopeux. See logappl, logproc, logdev, logtran, and logindx.

real time

The actual time in which an event takes place.

resize

Changes the overall size of a log file using the utility program's resize command.

run file

Created by the scopeux collector to indicate that the scopeux process is running. Removing the run file causes scopeux to terminate.

scopeux

The Performance Agent data collector program that collects performance data and writes (logs) it to raw log files for later analysis or archiving. *See also* **raw log files**.

scopeux log files

See raw log files.

status.scope file

Created by the scopeux collector to record status, data inconsistencies, and errors.

system ID

The string of characters that identifies your system. The default is the host name as returned by uname -n.

transaction log file

See logtran.

transaction tracking

The technology used in Performance Agent that allows information technology (IT) resource managers to measure end-to-end response time of business application transactions.

ttd.conf

The transaction configuration file where you define each transaction and the information to be tracked, such as transaction name, performance distribution range, and service level objective.

utility

A Performance Agent program that allows you to open, resize, scan, and generate reports on raw and extracted log files. You can also use it to check parm file and alarmdef file syntax, and obtain alarm information from historical log file data.

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