HP OpenView Performance Agent

For IBM AIX Systems

Software Version: C.04.50

Installation and Configuration Guide

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Introducing OV Performance Agent

HP OpenView Performance Agent (OVPA) captures performance, resource, and transaction data from your IBM AIX 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. You can analyze the data using spreadsheet programs, Hewlett-Packard analysis products such as OV Performance Manager (OVPM), or third-party analysis products. Also, OV Performance Agent provides data access to OV Performance Manager and sends alarm notifications to HP OpenView Network Node Manager (NNM) and OpenView Operations (OVO).

OV Performance Manager (OVPM) in this document refers only to versions 4.0 and later. The name OVPM 3.x is used throughout this document to refer to the product that was formerly known as PerfView.

OV 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 data logged and stored by OV Performance Agent allows you to:

- 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 OV Performance Agent, see the *HP OpenView Performance Agent for UNIX User's Manual*.

Installation Requirements

Before installing OV Performance Agent, make sure that your system meets the requirements described in this section. Certain system and configuration prerequisites are necessary for OV Performance Agent to operate properly on your system.

Hardware

OV Performance Agent generally runs on hardware platforms supporting the operating system, including:

- IBM RS/6000 and pSeries Systems

Software

- OV Performance Agent requires the IBM AIX 5L V5.1 or later
- The `libC.a` library is required for the OV Performance Agent to operate properly. The library is bundled within the xlC.rte package, available from your AIX OS CD-ROM disk media.The `libSpmi.a` library is a prerequisite on AIX 5L V5.1 and later for the memory metrics to be calculated correctly. The library is bundled within the `perfagent.tools` fileset from your AIX OS CD-ROM disk media and is installed in the `/usr/lib/` directory.

Communication Protocols

OV Performance Agent supports the following communication protocols:

- HTTP(S) 1.1
- NCS 1.5.1
- DCE V3.2

Disk Space

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

- For first time installation of OV Performance Agent, 70 MB of disk space is required in the /usr/lpp/perf/ and /usr/lpp/OV/ directories.
- For OVPA databases and status files, allow for 125 MB of disk space in the /var/opt/OV/ and /var/opt/perf/ directories.

For a description of how the parm file is used to limit and configure log file data storage, see the “parm File” section in Chapter 2 of your *HP OpenView Performance Agent for UNIX User’s Manual*.

Installation Procedures

OV Performance Agent comes on a CD installation media. The size of the product is approximately 70 MB, including the product documentation.

OV Performance Agent installation is done in two phases:

1. If you have previously installed OVPA or Glance on the system, stop any performance tools or processes that may be running. See To Stop Active Performance Tools or Processes on Page 13.
2. Install OpenView Performance Agent. See To Install OV Performance Agent on Page 13.

OV Performance Agent can run in HTTP, native NCS, and native DCE mode, as well as in emulated NCS mode via DCE, depending on the communication protocol and fileset selected.

If you are installing OV Performance Agent for the first time, by default, the data communication protocol is set to HTTP. If you are upgrading OV Performance Agent, the previously used DCE or NCS protocol is retained by default.

The CD-ROM contains three installation filesets in `tar` archive files:

- `tarfile` consists of common OV Performance Agent files.

  This fileset is needed regardless of the communication protocol used by OV Performance Agent. The fileset includes files needed to run in HTTP mode.

- `tarncs` consists of files specific for OV Performance Agent using `llbd` to run in NCS mode.
- `tardce` consists of files specific for OV Performance Agent using `dced` to run in:
  - DCE mode
  - emulated NCS mode using the libraries `libdce.a, libdcepthreads.a and libdcelibc_r.a`

Files from `tarfile` are always installed, as well as files from either `tarncs` or `tardce`, depending on which type of installation you choose.

Depending on which fileset is installed on the system, `perfstat -v` output lists major OV Performance Agent executable components along with the appropriate suffix which is either NCS or DCE.

The following example is an excerpt from output of `perfstat -v` and shows that NCS version of `scopeux` and `perflbd` are installed, as well as a common `ttd` executable:

```
scopeux  C.03.84.00 NCS 09/01/04 AIX 5.1+

    ttd  C.03.84.00     09/01/04 AIX 5.1+

perflbd  C.03.84.00 NCS 09/01/04 AIX 5.1+
```

When running the installation script, you can choose a protocol and the fileset to install. For more information on installation options, see The install.ovpa Script on Page 17.

To install the DCE fileset, you must have the DCE Runtime Services installed. Check for the correct packages by running `lslpp -L | grep dce` to verify that the `dce.client` filesets are installed. If the filesets are *not* installed, install them, as they are a prerequisite for OV Performance Agent to run properly. If `dced` was *not* already running before installation, you have to start the `dced` daemon and OV Performance Agent manually. For more information on how to install DCE refer to your DCE-specific documentation. You can start OV Performance Agent using the `mwa` script.

By installing the DCE fileset, you have the capability of `dced` daemon to use either the DCE communication protocol or to emulate the NCS communication protocol

The NCS fileset installation uses the `llbd` (Local Location Broker Daemon) for NCS communication.

➤ The `dced` and `llbd` daemons cannot run at the same time. Make sure the `dced` daemon is *not* already running on your system by using `ps -ef | grep dced`. If you are sure no other programs are using the `dced`, you can use `/usr/bin/stop.dce` to stop it. Refer to Starting OV Performance Agent Automatically on Page 27 in Chapter 2 for information about starting the daemons automatically.

If you have HP OpenView Operations agent installed on your system, see Installing OV Performance Agent with OV Operations Agent Installed on Your System on Page 16.

During the process of installation a `/var/opt/perf/.ovpa_binaryset` file is created and the information about which fileset has been installed is written to it. It contains the text `Selected Binary= tarncs` if NCS fileset is installed, or the text `Selected Binary= tardce` if DCE fileset is installed. This information is used by the installation and removal scripts. The `ovpa_binaryset` file should *not* be edited manually.

To Stop Active Performance Tools or Processes

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

   ```
   /usr/lpp/perf/bin/perfstat
   ```

   If `perfstat` reports any active performance tools such as GlancePlus, stop them. (Make sure that users have exited these tools before doing so.)
3. If a previously installed version of OV Performance Agent is running, stop it by typing:

   ```
   /usr/lpp/perf/bin/mwa stop
   ```

Customized configuration files such as the `parm`, `alarmdef`, `ttd.conf` and `perflbd.rc` as well as any customized log files will *not* be overwritten by the new installation. The new configuration files are installed in the `/usr/lpp/perf/newconfig` directory.

4. As a precaution, make sure you have backed up your customized configuration files such as the `parm`, `alarmdef`, `ttd.conf`, and `perflbd.rc` files, and any customized export template files.

If you stop `ttd`, any ARM-instrumented applications that are running *must* also be stopped before you restart `ttd` and OV Performance Agent processes.

5. Run `perfstat` again to ensure that no performance tools or processes are active. When all tools or processes have been stopped, proceed with the installation.

To Install OV Performance Agent

While installing OV Performance Agent, you can specify the data communication protocol to be used and the fileset to be installed.

If you are installing OV Performance Agent for the first time, by default, the data communication protocol is set to HTTP and the set of files from `tarncs` is installed if no additional option is specified at installation time. If you are upgrading OV Performance Agent to the current version, the previously used protocol and corresponding fileset are retained. For a detailed description of `install.ovpa` options, see The install.ovpa Script on Page 17.

The HTTP communication protocol is always enabled, irrespective of the protocol or fileset you have selected for installation. The daemons used for HTTP data communication are always installed and active on your system.

The table below lists the protocol used and the fileset installed with different installation options of OV Performance Agent.

Table 1   OV Performance Agent installation options

Options	OVPA Standalone (No OVO 7.x)	OVPA on OVO 7.x installation in DCE mode	OVPA on OVO 7.x installation in NCS mode
Protocol			
`-p http`	HTTP	HTTP	HTTP
`-p dce`	DCE	DCE	NCS
`-p ncs`	NCS	DCE	NCS
No protocol specified	HTTP in a first time installation of OVPA and the previously used protocol on upgrade to the current version of OVPA		
Fileset			
`-b dce`	tarfile, tardce	tarfile, tardce	tarfile, tarncs
`-b ncs`	tarfile, tarncs	tarfile, tardce	tarfile, tarncs
No fileset specified	tarfile and tarncs in a first time installation of OVPA and, tarfile and the previously installed fileset on upgrade to the current version of OVPA		

To install:

1 Make sure you are logged in as user **`root`**.

2 Mount the CD-ROM to a file system (using `SMIT` or the `mount` command).

3 Change to the CD-ROM directory by typing:

```
cd /<directory>
```

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

4 Type **ls** to verify that you are in the correct directory. The directory contains the `install.ovpa` script.

5 Run the installation script.

To install using the HTTP communication protocol, type:

```
./install.ovpa -p http -b ncs
```

To install using the DCE communication protocol, type:

```
./install.ovpa -p dce -b dce
```

To install using the NCS communication protocol in the emulated mode, type:

```
./install.ovpa -p ncs -b dce
```

To install using the NCS communication protocol, type:

```
./install.ovpa -p ncs -b ncs
```

For details on changing the communication protocol after installation, see Changing Protocols on Page 26 in Chapter 2.

The installation script automatically starts all OV Performance Agent processes. If you do *not* want OV Performance Agent to start after installation, run the installation script with the option `-R`.

➤ If you have HP OpenView Operations agent installed on your system, see Installing OV Performance Agent with OV Operations Agent Installed on Your System on Page 16.

The OV Performance Agent processes are also started or stopped automatically if you restart or shutdown. See Chapter 2, Starting and Running OV Performance Agent.

6 Exit the CD-ROM directory by typing:

```
cd /
```

using `SMIT` or the `umount` command.

OV Performance Agent installation is now complete. Go to Chapter 2, Starting and Running OV Performance Agent for details on other tasks you need to perform to get OV Performance Agent up and running.

➤ If you are also running the GlancePlus product on your system, be sure to update GlancePlus to the same release version as OV Performance Agent. Both OV Performance Agent and GlancePlus must always be the same version.

Installing OV Performance Agent with OV Operations Agent Installed on Your System

If you are installing OV Performance agent for the first time, and if no communication protocol is specified, the default data communication mode is HTTP.

When `install.ovpa` is executed, the installation script automatically detects whether the OV Operations Agent 7.x is installed on your system and which communication protocol it is using. This information is gathered by checking for the existence and reading the contents of the `/var/opt/OV/conf/OpC/nodeinfo` file.

While upgrading OV Performance Agent, if OVO Agent 7.x is found, the `install.ovpa` script overrides any options you may have specified and notifies you of the options that will be used for installation:

— If NCS service is detected, the `install.ovpa` script is started with the `-p ncs -b ncs` options, enforcing the deployment of the NCS communication protocol and the NCS set of files. The following message is displayed:

```
OVO or OVO subagent has been found on your system.
Installation will continue with -p ncs -b ncs option.
```

— If DCE service is detected, the `install.ovpa` script is started with the `-p dce -b dce` options, enforcing the deployment of the DCE communication protocol and the DCE set of files. The following message is displayed:

```
OVO or OVO subagent has been found on your system.
Installation will continue with -p dce -b dce option.
```

The presence of OV Operations 8.x agent on your system does not affect the default installation behavior of OV Performance Agent. During first time installation of OV Performance Agent on systems that have OV Operations 8.x agent installed, the HTTP communication protocol and the NCS set of files are installed by default. If you are upgrading OV Performance Agent, the existing communication protocol is used, and the corresponding set of files is installed. For more information on how OV Performance Agent is installed, see To Install OV Performance Agent on Page 13.

Deploying OV Performance Agent Using OV Operations

If you are using HP OpenView Operations for UNIX 8.x, you can install HP OpenView Performance Agent from the management server to an IBM AIX managed node.

For installation instructions from an HP OpenView Operations for UNIX 8.x management server, refer to the chapter "HP OpenView Performance Agent" in the *HP OpenView Operations for UNIX Administrator's Reference*.

The install.ovpa Script

To install OV Performance Agent, you must run the `install.ovpa` script. This section describes the installation script command line options, which can be used for more advanced installations. The syntax of the command is as follows:

```
install.ovpa [-hR] [-p dce | ncs | http] [-b dce | ncs]
```

The command line options have the following meaning:

`-h` Display this message and exit.

`-R` Do *not* start OV Performance Agent upon successful installation. By default, OV Performance Agent is automatically started.

`-p` Enforce the deployment of the selected communication protocol.

- `http` Use HTTP communication protocol
- `dce` Use DCE communication protocol
- `ncs` Use NCS communication protocol

`-b` Enforce the installation of the selected fileset.

- `dce` Install the DCE fileset
- `ncs` Install the NCS fileset

When no options are specified, and you are installing OV Performance Agent for the first time, the default is to install the NCS fileset and use the HTTP communication protocol. The option `-p dce -b ncs` is *not* allowed, since the NCS fileset does *not* support the DCE communication protocol.

Removing OV Performance Agent

If you need to remove OV Performance Agent from a system, use the `ovpa.remove` script that is in the `/usr/lpp/perf/bin/` directory. However, before removing OV Performance Agent, make sure you archive any log files that were created. These files contain performance data for that system and can be used to extract or view data at a later time.

During the removal process, you will be asked if you want to remove the OV Performance Agent configuration and logfiles:

```
“Do you want to remove OVPA configuration and logfiles in the /
var/opt/perf/datafiles and /var/opt/perf directory?”
```

Answer **N** (no) if you want to keep the configuration and log files at the original location.

Note that these files will *not* be overwritten by a new OV Performance Agent installation. The new configuration files are uploaded to the `/usr/lpp/perf/newconfig` directory.

It is possible that some product packages may remain installed on the system, if those packages are shared across other OpenView products and are required by other tools. They will be removed only when the last tool requiring them is also removed.

2 Starting and Running OV Performance Agent

Introduction

This chapter describes the tasks involved in starting up and running OV Performance Agent after it has been installed on your IBM RS/6000 system. The following topics are discussed:

- Starting and Stopping OV Performance Agent
- Communicating Across a Firewall
- Configuring Secure Communication
- Configuring OV Performance Agent to Run on a Cluster Node
- Configuring Data Sources
- Defining Alarms

➤ If you are planning to log data from other sources using data source integration (DSI), and have *not* yet done so, read the *HP OpenView Performance Agent for UNIX Data Source Integration Guide*.

Starting and Stopping OV Performance Agent

When installation is complete, you can start OV Performance Agent. The OV Performance Agent scripts, mwa and ovpa, let you start all or some processes and stop or restart currently running processes.

If you are installing OV Performance Agent for the first time, the default data communication mode is HTTP. If you are upgrading OV Performance Agent, the previously used DCE or NCS data communication mode is enabled by default. For information on changing the data communication protocol, see Changing Protocols on page 26.

Depending on the data communication protocol you want to enable, you can use the ovpa or mwa script to start or stop OVPA.

➤ It is recommended that you use the ovpa script to start OVPA and enable OVPA to use the HTTP data communication protocol. However, if you want to use the legacy DCE or NCS data communication protocol, the mwa script is provided for backward compatibility.

The following table lists the different services that are started for the different protocols.

Table 2 OVPA services started for different protocols

Services started for HTTP protocol	Services started for DCE or NCS protocol
scopeux	scopeux
coda	coda
perfalarm	perfalarm
midaemon	midaemon
ttd	ttd
ovc	ovc
ovbbccb	ovbbccb
	llbd (NCS mode)

Services started for HTTP protocol	Services started for DCE or NCS protocol
	perflbd
	rep_server
	alarmgen (if perfalarm is not present)

➤ The perflbd, rep_server, and alarmgen processes are used for DCE communication

Before you start OV Performance Agent, check to see if any processes are running by typing:

```
/usr/lpp/perf/bin/perfstat
```

Using the ovpa script

To start OV Performance Agent and its processes using ovpa:

1. Log in as user **root**.
2. Type: **/usr/lpp/perf/bin/ovpa start**

   The ovpa start script starts OV 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 OV Performance Agent processes while they are running and restart them using the ovpa script and appropriate options.

- `ovpa stop` stops all OV Performance Agent processes except `ttd` (the transaction tracking daemon), `ovc` and `ovbbccb`. These processes must always be left running. If OpenView Operations 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 OV Performance Agent processes.

Individual components can be reinitialized as well with the `ovpa restart` option. Changes to configuration files will *not* take effect on your system unless the corresponding process is restarted.

- `ovpa restart server` causes `coda` to stop and then start, temporarily disabling alarming and access for clients such as OV Performance Manager, and rereads the `datasources` file. It also stops and then restarts the `perfalarm` process 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 `perfalarm` process to temporarily stop and then start and reread the `alarmdef` file, so that if you have made changes to the file, the new alarm definitions will take effect without restarting all OVPA processes. This action does *not* disrupt any other process.

Using the mwa script

To start OV Performance Agent and its processes:

1. Log in as user **`root`**.
2. Type:

```
/usr/lpp/perf/bin/mwa [-ncs | -dce] start
```

You can start OV Performance Agent using DCE communication protocol only if you have the DCE set of binaries installed.

If you are running OV Performance Agent supporting a DCE communication protocol and you want to change to NCS (NCS fileset must be installed on your system), you have to edit the /etc/default/ovpa file and set the MWA_PROTOCOL variable to ncs and the MWA_LLBD_COMMAND to /usr/lpp/perf/bin/llbd. Otherwise, you will get OV Performance Agent running the dced daemon that emulates the NCS local location broker. You may also need to stop the dced daemon before running the ./mwa start script. To confirm that llbd is running, run:

```
ps -ef | grep llbd
```

If OV Performance Agent is started in the normal boot sequence, all client applications using NCS (llbd) must be started after the startup of all HP OpenView products (OV Performance Manager, OV Operation, OV Performance Agent, and so on), to ensure that proper communication services have been enabled.

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

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

- mwa stop stops all OV Performance Agent processes except ttd (transaction tracking daemon), ovc, and ovbbccb. ttd should always be left running. If OpenView Operations agent is running on the system, mwa stop does not stop the coda daemon.
- OV Performance Agent can be reinitialized using the mwa restart option. Changes to configuration files will *not* take effect on your system unless the processes are restarted.
- mwa restart server causes coda and the repository servers to stop and then start, temporarily disabling alarming and access for clients such as OV Performance Manager, and rereads the perflbd.rc file. It also stops and starts the alarm generator process and rereads the alarmdef file. The HTTP based alarm generator, perfalarm, is enabled by default[1].

[1] To enable the DCE based alarm generator, alarmgen, stop OV Performance Agent, rename the perfalarm executable to perfalarm.old, and restart OV Performance Agent using the mwa script.

- mwa restart causes the server processes and all the daemons including coda, scopeux and the transaction daemon ttd to temporarily stop and then start. It rereads the parm file and the ttd.conf transaction configuration file..

If you stop ttd, any ARM-instrumented applications that are running must also be stopped before you restart ttd and OV Performance Agent processes.

- mwa restart alarm cause the alarm generator process to temporarily stop and then start and reread the alarmdef file. This action does not disrupt any other process.

Changing Protocols

During first time installation of OV Performance Agent, the protocol selected is written to the /etc/default/ovpa file as an addition to the environment variable MWA_PROTOCOL (for example, MWA_PROTOCOL=http). See The /etc/default/ovpa File on page 27, for more information on the ovpa configuration file.

To switch to DCE or NCS mode:

You cannot use the ovpa script to start or stop DCE or NCS data communication components. You must set the MWA_PROTOCOL parameter in the /etc/default/ovpa file to dce or ncs, and start OVPA using the mwa script.

To switch to HTTP mode:

If you want to switch to the HTTP protocol, you must set the MWA_PROTOCOL parameter in the /etc/default/ovpa file to http and restart OVPA. To start OVPA using the HTTP data communication mode, you can use either the ovpa or mwa script.

If MWA_PROTOCOL is set to http, both the ovpa and mwa scripts start the same components.

The mwa script starts the HTTP, DCE, or NCS data communication components depending on the value set for MWA_PROTOCOL.

The HTTP communication protocol is always enabled, irrespective of the protocol or fileset you have selected for installation. The daemons used for HTTP data communication are always installed and active on your system.

Starting OV Performance Agent Automatically

The process of starting OV Performance Agent automatically whenever the system reboots and to stop when the system shuts down is controlled by the file /etc/inittab.

If you do *not* want OV Performance Agent to start automatically, remove the line that begins with mwa in the file /etc/inittab or set the variable MWA_START =0 in the /etc/default/ovpa file.

After rebooting the system, the dced daemon has to be started prior to OV Performance Agent. To ensure the proper startup sequence you can edit the /etc/inittab file. For example, insert the following line in front of the line that begins with mwa in the /etc/inittab file:

```
rcdce:2:wait:/etc/rc.dce core > /dev/console 2 > &1
```

‼ The dced and llbd daemons cannot run at the same time. Make sure the /etc/inittab file starts only the daemon you need.

The /etc/default/ovpa File

The /etc/default/ovpa file is available with OV Performance Agent. The file contains various environment variables that control the behavior of OV Performance Agent when starting it. The file is a source file for the following scripts:

/usr/lpp/perf/bin/ovpa	OV Performance Agent control script
/etc/rc.ovpa	OV Performance Agent auto-start script

➤ The file is removed only when OV Performance Agent is removed from a system and is *not* overwritten when OV Performance Agent is updated. When OV Performance Agent is updated, a copy of the default /etc/default/ovpa file is left in the /usr/lpp/perf/newconfig directory under the name ovpa.default so that your customized copy does *not* get affected.

The environment and shell variables that can be modified to change the default behavior of OV Performance Agent are listed below.

- MWA_START controls the auto-start of OV Performance Agent whenever your system reboots. The variable can have one of the following values:

0 do *not* start OV Performance Agent at the system boot

1 start OV Performance Agent at the system boot

- MWA_PROTOCOL determines whether OV Performance Agent servers register their interfaces as NCS or DCE in addition to HTTP. By default, in a first time installation, the variable is set to http, and can be changed to one of the following values:

http run OV Performance Agent as an HTTP service

ncs run OV Performance Agent as an NCS service

dce run OV Performance Agent as a DCE service (only possible if the DCE set of binaries is installed)

Use only lower case letters to designate ncs or dce.

- The MWA_START_COMMAND contains a variable that is used to start OV Performance Agent whenever your system reboots. Normally, the variable is set to /usr/lpp/perf/bin/mwa start.

- The MWA_LLBD_COMMAND contains the command string to start the NCS local location broker daemon. The dced daemon is capable of emulating the NCS local location broker. However, if you still want to run the genuine NCS llbd you can set the command to:

  ```
  MWA_LLBD_COMMAND="/usr/lpp/perf/bin/llbd"
  ```

The variable only applies when OV Performance Agent operates in NCS mode if llbd or dced are *not* already running.

- MWA_RPC_INETADDR defines the network interface that has to be used, on multi-homed systems running in the NCS mode, for communication with client products, such as OV Performance Manager. NCS does *not* support registration to multiple interfaces, therefore this environment variable must explicitly be set if the default network interface cannot be reached by the client products. The variable's value, *which must be exported*, is the IP address in dotted format. For example:

  ```
  MWA_RPC_INETADDR=127.0.0.1

  export MWA_RPC_INETADDR
  ```

- RPC_RESTRICTED_PORTS restricts the range from which the DCE runtime selects the communication ports to the listed range. This behavior is useful when a client and server must communicate through a port filtering firewall. Note that the range must *not* be too small or else the runtime will run out of resources. The RPC_RESTRICTED_PORTS environment variable affects the entire DCE runtime and thus all applications that use DCE. Note that OV Performance Agent services require one communication port for each registered data source plus additional five ports. For example:

  ```
  RPC_RESTRICTED_PORTS=ncadg_ip_udp[xxxx-yyyy]
  :ncacn_ip_tcp [xxxx-yyyy]
  export RPC_RESTRICTED_PORTS
  ```

  For more information about Firewall support, see Communicating Across a Firewall on page 31.

- The RPC_UNSUPPORTED_NETADDRS environment variable is used to prevent binding DCE services to the interfaces listed in the variable string. If you want to exclude network addresses from the DCE binding list, replace the 127.0.0.1 from the example below with a list of real addresses separated by a colon (:).

  ```
  RPC_UNSUPPORTED_NETADDRS=127.0.0.1
  export RPC_UNSUPPORTED_NETADDRS
  ```

- The RPC_NOALIAS_NETIFS environment variable may have values 1 or 0 (default). If the variable is set to 1 only the primary IP address for each local network interface is extracted as the usable set of network addresses for this DCE client. All IP aliases for all network interfaces are ignored. This variable is automatically set to 1 in environments where the number of IP addresses is greater than 32.

- The RPC_SUPPORTED_NETADDRS environment variable is used to enable the binding of DCE services to the interfaces listed in the variable string. On multi-homed systems it is sometimes desired to enable the use of only certain networks for DCE based services. If you want to include network addresses to the DCE binding list, replace the 127.0.0.1 and 127.0.0.2 IP addresses from the example below with a list of real addresses, separated by a colon (:).

  ```
  RPC_SUPPORTED_NETADDRS=127.0.0.1:127.0.0.2
  export RPC_SUPPORTED_NETADDRS
  ```

Status Checking

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

```
/var/opt/perf/status.alarmgen
/var/opt/perf/status.perflbd
/var/opt/perf/status.rep_server
/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
```

➤ Every time an OV Performance Agent process writes a message to its status file, it checks to see if the file is larger than one MB. If it is, the file is renamed to `status.filename.old` and a new status file is created.

Examples Directory

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

Communicating Across a Firewall

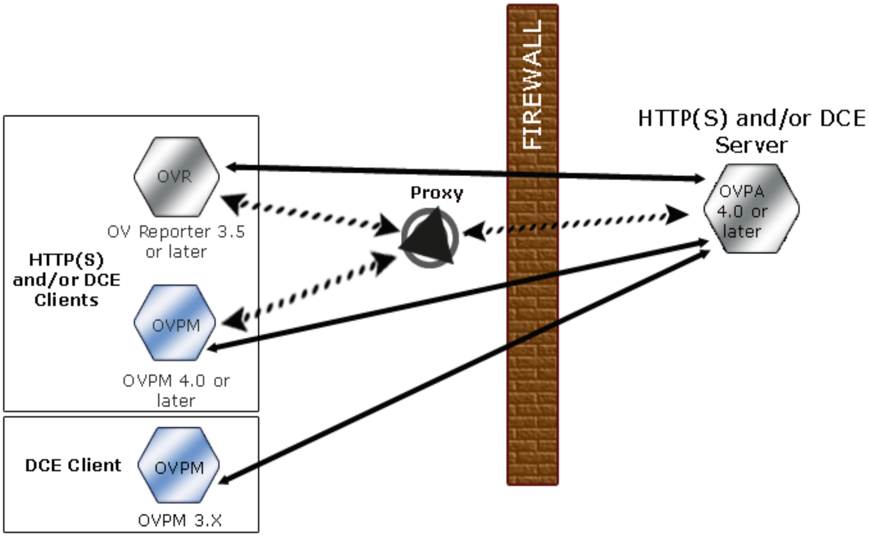
In general, a firewall may be defined as a method for filtering the flow of data between one network and another. OV Performance Agent (OVPA) now supports HTTP 1.1 based communications interface for data access between client and server applications, in addition to the previously supported communication mechanism through a packet-filtering network firewall.

➤ OV Performance Agent supports certificate-based secure (HTTPS) data communication only in the HP OpenView Operations environment. For more information, see Configuring Secure Communication on page 44.

The HTTP based interface is flexible, since it can use proxies, requires fewer ports and is firewall friendly. The `perflbd` and `rep_server` daemons, and their dependency on the DCE subsystem can still be used.

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

Figure 1 Communicating with OVPA in a Firewall Environment



➤ The name OV Performance Manager 3.x is used throughout this document to refer to the product that was formerly known as PerfView.

Communicating in the HTTP Environment

There are different ways to configure HTTP communication in a firewall environment. The recommended way is to use HTTP proxies for OVPA data communication 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.

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. 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. Figure 1 on page 32 shows how OVPA communicates with Reporter (version 3.5 or later) and OV Performance Manager (OVPM version 4.0 or later) through a firewall. OVPA is an HTTP or HTTPS server. Reporter and OVPM 4.x are HTTP clients. OVPM 5.0 can be an HTTP or HTTPS client. If an HTTP proxy is used, Reporter and OVPM communicate with OVPA via the proxy.

OVPM version 3.x uses the PerfView technology. PerfView does not use the HTTP datacomm components, but it will connect to OV Performance Agent 4.5 when the DCE data communication mode is enabled.

Ports Used for Communication

To access data collected by OVPA, ports for the HTTP server (OVPA) and the HTTP client (Reporter and OVPM) must be opened. There are two ways to configure HTTP clients in a firewall environment: with an HTTP proxy and without. In both cases, to access data from OVPA nodes, only one port needs to be opened on the HTTP server (OVPA) side.

With HTTP Proxy

The recommended way is to use HTTP proxies when communicating through a firewall. This simplifies the configuration because proxies are often in use and the firewall needs to be opened only for the proxy system and for a smaller number of ports. It is recommended that you do not change the default 383 port.

Default Ports for OVPA (with proxies) are shown in Table 3.

Table 3 OVPA Default Ports

Source	Destination	Protocol	Source Port	Destination Port	Description
PROXY	MGD NODE	HTTP	Defined by the proxy	383	Communication Broker

To configure the proxy, run 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.

For example:

```
ovconfchg -ns bbc.http -set PROXY srv1.abc.com:8088+*
```

Without HTTP Proxy

If HTTP proxies are not available, additional configuration settings are required on the Reporter and OVPM system. See the section, Configure Reporter/OVPM without HTTP Proxy on page 36.

Configuring Ports Across Firewall

To configure communications with OVPA in a firewall environment, follow these guidelines:

- Understand your firewall environment including the client and server data flow.
- Check the port usage in your environment.
- Refer to the following sections for details on configuring communication across firewalls, when proxies are used:
  - Configure OVPA Ports
  - Configure Reporter and/or OVPM
  - Other Considerations
- Test the communication across the firewall.

Configure OVPA Ports

On an OVPA system, by default, the BBC communication broker uses port 383 and `coda` uses a dynamically allocated port.

Configuring the Default Communication Broker Port:

Use the `ovconfchg` tool to change the port settings on the OV Performance Agent system. Type the commands:

```
ovconfchg -ns bbc.cb.ports -set SERVER_PORT <port number>
```

```
ovc -restart
```

Configuring OVPA for Single Port Communication:

On the OV Performance Agent system, coda uses a port that is dynamically allocated. To change the port setting to use the communication broker's port specified above, type the following commands:

```
ovconfchg -ns coda.comm -set SERVER_BIND_ADDR localhost
```

```
ovc -restart
```

Configure Reporter and/or OVPM

You can configure the HTTP clients (Reporter or OVPM for Windows or UNIX) in a firewall environment in one of two ways:

- With HTTP Proxy – This is the recommended way. See the section Configure Reporter/OVPM with HTTP Proxy.
- Without HTTP Proxy – This is *not* the recommended way. See the section Configure Reporter/OVPM without HTTP Proxy.

Configure Reporter/OVPM with HTTP Proxy

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

Configure OVPM 5.0 as follows:

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.

Configure Reporter/OVPM 4.x as follows:

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**.)

Configure Reporter/OVPM without HTTP Proxy

If your firewall environment does not have proxies then you may want to specify the HTTP client ports directly if you want to filter based on both source and destination.

If Reporter and OVPM for Windows are installed on the same system and both access OVPA in parallel, you would specify a port range as described in this section. If they are running on different systems, you can instead specify a single port for each.

Configure OVPM 5.0 as follows:

Type the following command,

```
ovconfchg -ns bbc.http -set CLIENT_PORT <port 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/OVPM 4.x as follows:

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

1 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`** **=** <*port range*>

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

   ```
   CLIENT_PORT = 14000-14003
   ```

Other Considerations

About 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 `nodeinfo` parameter `CLIENT_BIND_ADDR` and `SERVER_BIND_ADDR` to specify the IP address that should be used.

On the OVPA system, specify the SERVER_BIND_ADDR parameter as follows:

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

On the OVPM 5.0 system, specify the CLIENT_BIND_ADDR parameter as follows:

```
ovconfchg -ns bbc.http -set CLIENT_BIND_ADDR <IP Address>
```

On the Reporter/OVPM 4.x system, specify the CLIENT_BIND_ADDR parameter.

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

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

```
;CLIENT_BIND_ADDR =
```

2 Specify the IP address for the CLIENT_BIND_ADDR parameter.

Communicating in the DCE Environment

In the DCE environment, OV Performance Agent uses dynamically allocated socket port numbers for interprocess communication. To communicate through a packet-filtering network firewall, you must configure the OV Performance Agent servers to use statically defined port numbers.

This section is applicable only if you are using the DCE communication protocol. NCS communication protocol uses different port ranges and cannot be used with a firewall.

Configuring OV Performance Manager and OV Performance Agent Communication

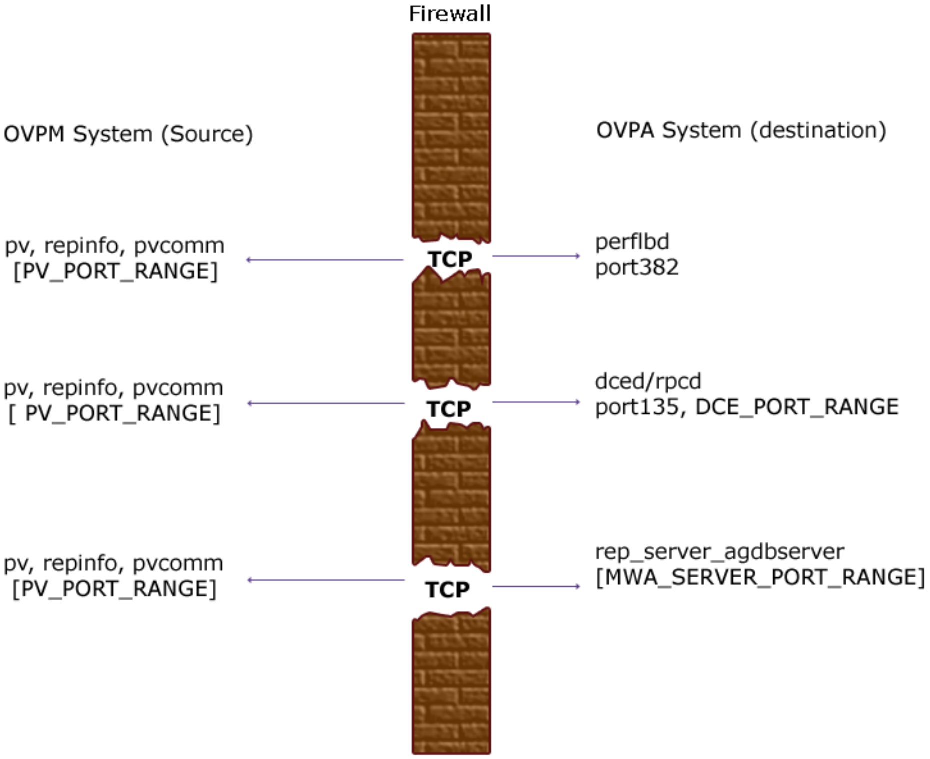
The method of configuring the socket port numbers for OV Performance Agent depends on the version of OV Performance Manager that will be communicating with OV Performance Agent. To configure the socket port numbers, follow the instructions in Configuring OV Performance Manager C.03.00 and Later with OV Performance Agent Communication on page 38.

Configuring OV Performance Manager C.03.00 and Later with OV Performance Agent Communication

The way to configure OV Performance Agent and OV Performance Manager firewall communication depends on which of these two programs is the source of the communication.

Configuring OVPM C.03.00 and Later (Source) with OVPA Communication

When OV Performance Manager is the source, it communicates with OV Performance Agent using the TCP protocol with the TCP socket port numbers shown in the following figure.



To configure the `MWA_SERVER_PORT_RANGE` as statically defined TCP socket port numbers, add the following entries to the `/etc/services` file:

```
agdbserver   xxxx/tcp
rep_server   yyyy/tcp
```

where *xxxx* and *yyyy* specify unused port numbers. `agdbserver` and `rep_server` register at the specified port numbers. If there are multiple data sources configured in the `perflbd.rc` file, the first `rep_server` uses the *yyyy* port number specified above. All other `rep_servers` add one to the last used port number.

For example, if you include the following lines in the `/etc/services` file:

```
agdbserver   20001/tcp
rep_server   20002/tcp
```

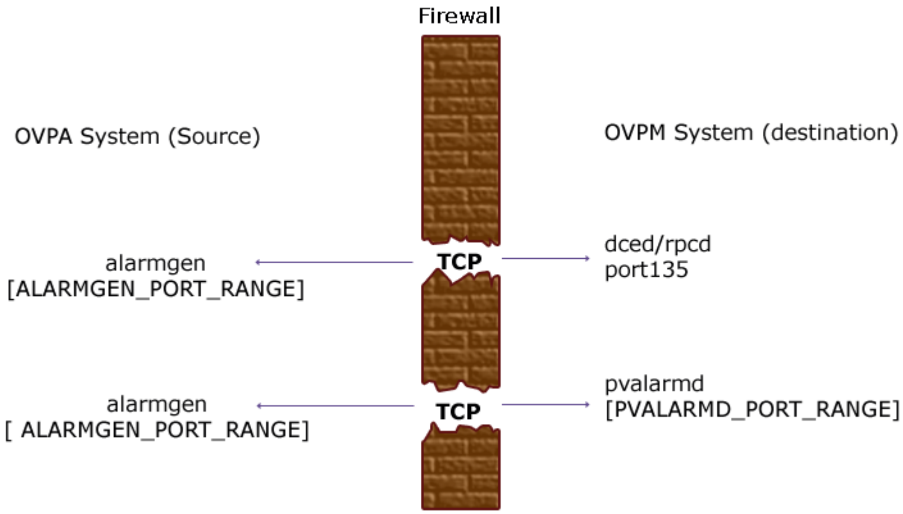
and there are three data sources configured in the `perflbd.rc` file, OV Performance Agent will use the following TCP port numbers:

```
agdbserver   20001
rep_server   20002
rep_server   20003
rep_server   20004
```

Based on the `/etc/services` example above, the `MWA_RANGE` will be 20001-20004.

Configuring OVPA (Source) with OVPM C.03.00 and Later Communication

When OV Performance Agent is the source, it communicates with OV Performance Agent using the TCP protocol with the TCP socket port numbers shown in the following figure.



➤ If you previously had OV Performance Agent communicating to OV Performance Manager through a firewall, port 135/UDP was open in the firewall. The firewall configuration must now be changed to open port 135/TCP. This is because the protocol used to connect to port 135 on the OV Performance Manager system was changed from UDP to TCP, regardless of the version of OV Performance Manager.

To configure the `ALARMGEN_PORT_RANGE` for the alarmgen process, edit the file `/var/opt/perf/vppa.env` and set the `RPC_RESTRICTED_PORTS` to the following:

`RPC_RESTRICTED_PORTS=ncacn_ip_tcp[`*`xxxx-yyyy`*`]`

where *xxxx-yyyy* is a range of unused port numbers. The formula for calculating the port range is:

```
2 *  (# of OVPM systems receiving alarms from the OV Performance
     Agent system)
```

For example, if the OV Performance Agent system was sending alarms to two OV Performance Manager systems, set `RPC_RESTRICTED_PORTS` to the following range in the `vppa.env` file:

```
RPC_RESTRICTED_PORTS=ncacn_ip_tcp[30001-30004]
```

➤ This environment variable affects only the ports that are used for communication outside the localhost. Ports that are used internal to the local host, such as local communication between `alarmgen` and `rep_server`, are not affected by this variable.

Restart the OV Performance Agent servers using `/usr/lpp/perf/bin/mwa restart server` to make the port restriction take effect.

Refer to the *HP OpenView Performance Manager Installation Guide* to determine the `PV_PORT_RANGE`.

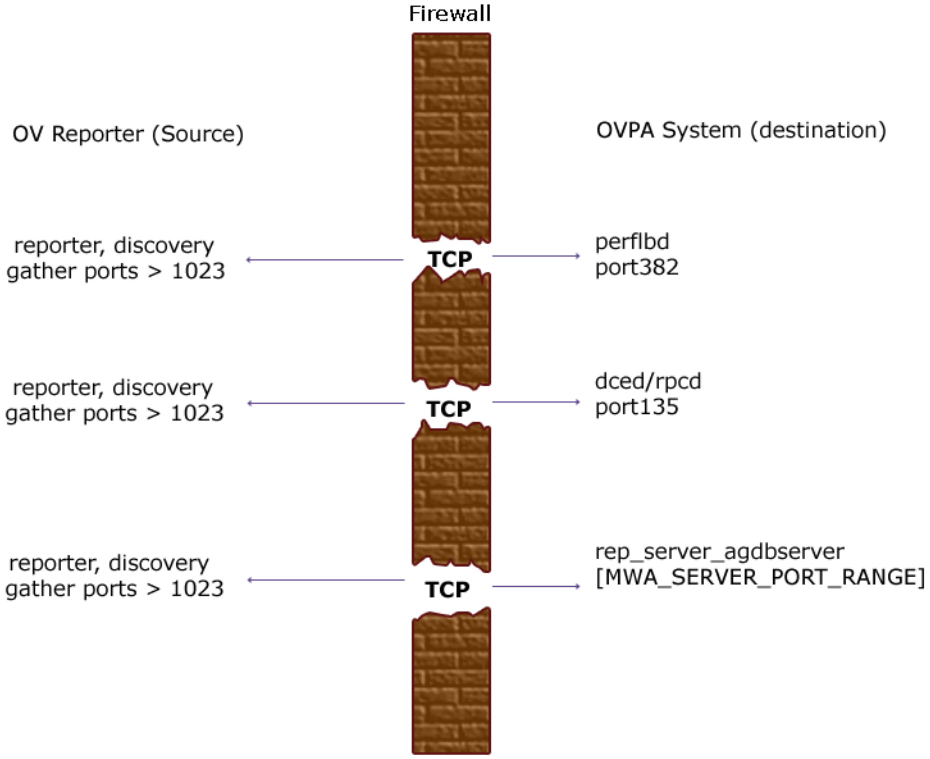
➤ Sending alarms from OV Performance Agent to OV Performance Manager through firewalls that use Network Address Translation (NAT) IP addresses is not supported.

Configuring OV Reporter and OV Performance Agent Communication

The configuration of the socket port numbers for OV Performance Agent depends on the version of OV Reporter that will be communicating with OV Performance Agent. To configure the socket port numbers, follow the instructions in Configuring OV Reporter A.03.50 and Later with OV Performance Agent Communication.

Configuring OV Reporter A.03.50 and Later with OV Performance Agent Communication

OV Reporter communicates with OV Performance Agent using the TCP protocol with the TCP socket port numbers shown in the following figure.



For instructions on configuring the MWA_SERVER_PORT_RANGE as statically defined TCP socket port numbers, see Configuring OV Performance Manager C.03.00 and Later with OV Performance Agent Communication on page 38.

Restricting RPC Addresses

The RPC_SUPPORTED_NETADDRS environment variable is used to force the DCE/RPC service to bind to specific LAN cards in a multi-homed environment. If this environment variable is set, only addresses in the list are advertised in the endpoint map; addresses not found on the list are excluded from the server's list of available addresses.

To restrict the servers to using only a specified set of IP addresses, set the RPC_SUPPORTED_NETADDRS environment variable before starting the servers.

The syntax is:

```
RPC_SUPPORTED_NETADDRS=protocol:ip_address[,protocol:ip_addr
ess]
```

To set the environment variable for the OV Performance Agent servers, add the lines:

```
RPC_SUPPORTED_NETADDRS=ncadg_udp:192.1.1.1
export RPC_SUPPORTED_NETADDRS
```

to the /var/opt/perf/vppa.env file and then restart the servers using mwa restart server.

If you still have problems connecting, the problem may be with the endpoint map (dced/rpcd). Try setting the environment variable *before* starting dced/ rpcd. Then restart the system to make the IP address restriction take effect.

Configuring Port Ranges for OV Performance Agent

Set the RPC_RESTRICTED_PORTS environment variable as follows:

- Stop the OV Performance Agent server.

  ```
  /usr/lpp/perf/bin/mwa stop server
  ```

- Determine a suitable port range. To do so use the following formula:

  ```
  MWA_PORT_RANGE=(# rep_server)*7 + (# pvalarmd)*2+10
  ```

  Edit the /etc/default/ovpa.
  Uncomment the following lines:

  ```
  RPC_RESTRICTED_PORTS=ncadg_ip_udp[xxxx-yyyy] \
  :ncan_ip_tcp[xxxx-yyyy]
  export RPC_RESTRICTED_PORTS
  ```

  where [*xxxx-yyyy*] represents the range of addresses you have chosen. The default recommended range is [10500-10540].

- Start OV Performance Agent, run:

  ```
  /usr/lpp/bin/mwa start server
  ```

Refer to the *HP OpenView Performance Manager (PerfView) Installation Guide* to determine the PV_PORT_RANGE.

Configuring Secure Communication

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

Using Certificates

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

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

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

OV Reporter and OVPM 4.x do not support certificate-based secure communication.

On the OV 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

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

The Client Authentication feature enables/disables connections from any version of the OV 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 OV Performance Agent. Unauthorized clients receive a message indicating denial of service, for example:

```
Could not connect to OV Performance Agent data source on host
<hostname>.
```

The unauthorized connection attempt is logged in the `status.rep_server` file as the following message:

```
UNAUTHORIZED CONNECTION ATTEMPT:<IP address of connecting host in
dotted quad format> (MWA201-16)
```

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. On systems where DCE communication is enabled, the `authip` file exists in the `/var/opt/perf/` directory. The `authip` file lists hosts from which client connections are to be permitted.

- If the `authip` file exists in the default directory, then its contents determine which hosts are permitted client connections. Clients running on the same host as the OV 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 OV Performance Agent host can connect.
- If the `authip` file does *not* exist in the default directory, then no authentication is performed and any client will be allowed to connect, as was the case with prior OV Performance Agent versions.

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

Note, however, that an existing authorized client session can continue its current connection despite a subsequent change in the server's `authip` file, which would otherwise disqualify it, until the client takes an action that requires re-registration with OV Performance Agent. Thus, an authorized OV Performance Manager connection continues to be permitted, regardless of changes in the OV Performance Agent `authip` file, until the data source to the OV Performance Agent host has been closed. If there is then an attempt to reopen the data source, the `authip` file is reread and the connection is denied.

In the case of OV Performance Manager registration for alarms, a previously authorized client will continue to receive alarms until the data source has been removed (not just closed) by the client. If you want to force removal of a client from the server's alarm generator database from the OV Performance Agent side, use the command:

```
agsysdb -delpv <host>
```

The OV 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 OV 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 OV 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 OV Performance Agent to Run on a Cluster Node

OV Performance Agent running in DCE mode can run on a cluster node, that is on systems running HACMP for AIX software. In order to run on a cluster node OV Performance Agent has to have a fixed, always accessible IP address available.

Each cluster node system has its own OV Performance Agent. Each system must be accessible on a fixed IP address, which represents the system. The fixed, always accessible IP address is used by OV Performance Agent.

- If on the cluster node OVO agent is installed and running, use the OVO agent's IP alias (<*systemname*>`_ito`). For more information refer to the *HP OpenView Operations for UNIX Administrator's Reference Volume II*. Proceed with Configuring the OV Performance Agent Environment on page 49.
- If an additional adapter (that is, network interface card) with a fixed IP address that is not used by HACMP (as a boot, service, or standby adapter) is available on a HACMP node, you can use this adapter's IP as the fixed, always accessible IP address used by OV Performance Agent. Proceed with Configuring the OV Performance Agent Environment on page 49.
- If none of the above is available on your cluster node you will have to assign each node an IP alias in the same network in which the boot and service IP addresses reside. In addition, you must configure the node in such a way that this IP alias address is assigned to the service adapter as an alias for the boot IP address. To set the IP alias proceed with the following section.

Naming Scheme for IP Addresses

Using a standard naming scheme in your cluster environment will help you avoid confusion with the following:

- IP Addresses

  Other IP addresses that may be set on the interface.

- Messages

  Messages in the message browser originating from addresses other than the service address of the system.

Use the following naming scheme in your cluster environment:

<*systemname*>_boot	Boot address of a system
<*systemname*>_svc	Service address of a system
<*systemname*>_stdby	Standby address of a system
<*systemname*>_mwa	IP alias of a system

In this naming scheme, <*systemname*> is the name of the system as defined in the cluster configuration.

To Set an IP Alias

Before running OV Performance Agent on a cluster node, you *must* set an IP alias on each system on which you wish to run the OV Performance Agent.

To set an IP alias, follow these steps:

1 Use the System Management Interface Tool (SMIT) menus.

2 In a shell, enter the following command:

```
smit tcpip
```

3 Select the following from the menu bar:

   Further Configuration -> Network Interface Selection -> Configure Aliases -> Add an IPV4 Network Alias

4 Select the interface you want (for example, en0).

5 Enter values for the IP address and network mask.

Configuring the OV Performance Agent Environment

The <*systemname*>_boot, <*systemname*>_svc and <*systemname*>_stdby IP addresses must be listed in the /etc/default/ovpa file. Add these IP addresses to the RPC_UNSUPPORTED_NETADDRS environment variable.

For example:

Node Name	IP address
node-svc	10.17.1.2
node-stdby	10.18.1.1
node-boot	10.17.1.1

```
RPC_UNSUPPORTED_NETADDRS=10.17.1.2:10.18.1.1:10.17.1.1
export RPC_UNSUPPORTED_NETADDRS
```

For information on how to modify environment variables in the /etc/default/ovpa file, refer to The /etc/default/ovpa File on page 27.

Troubleshooting Hints

The following topics are described in this section:

- Possible problems

  Problems you may encounter when running OV Performance Agent on a cluster node with workarounds.

- Fixing problems with IP aliases

  Useful information on how to fix problems with IP aliases if you are using HACMP for AIX software.

Possible Problems

After a cluster is switched on/off, OV Performance Agent servers cannot be restarted. The problem occurs in one of the following cases:

- If DCE was started prior to running the cluster when the cluster was still inoperative.

  Workaround:

  a Stop your cluster software. For information on how to do that, refer to your HACMP documentation.

  b Stop the DCE daemon.

  c Run your cluster software. For information on how to do that, refer to your HACMP documentation.

d. Start the DCE daemon.

e. Make sure there is no OV Performance Agent server running on your system, else you will have to stop them.

f. Start the OV Performance Agent.

- If DCE was started prior to stopping the cluster when the cluster was still active.

  Workaround:

  a. Start your cluster software. For information on how to do that, refer to your HACMP documentation.

  b. Stop the DCE daemon.

  c. Stop your cluster software. For information on how to do this, refer to your HACMP cluster documentation.

  d. Start the DCE daemon.

  e. Make sure there is no OV Performance Agent server running on your system, else you will have to stop them.

  f. Start OV Performance Agent.

Fixing Problems with IP Aliases

Once you set the IP alias for OV Performance Agent on AIX, HACMP no longer works correctly. This problem applies to *all* events that deal with IP addresses (for example, `acquire service address`, `acquire takeover address`, `swap adapter`, and so on). This problem results from a flaw in the AIX operating system.

To fix AIX problems with IP aliases and HACMP, follow these steps:

1. Download and install the appropriate fixes for the AIX operating system.

   You can get the fixes with the IBM “FixDist” package or from the IBM website.

➤ For systems where AIX operating system fixes have already been installed, refer to To Reset Events on HACMP 4.2.2 on page 53.

   To get the fixed versions of related packages, use the following APAR:

   `IX78397`

2. Reset IP aliases on the network interface card.

Once you have installed the fixes to the AIX operating system, all HACMP events work, and the IP alias is set on the interface. However, the IP alias address no longer works after the `ifconfig` command is used to change the main IP address on the interface. For this reason, you have to reset the IP alias on the interface after each change of the IP address. For instructions, see To Reset the IP Alias on the Network Interface Card.

➤ You have to reset the IP alias on all cluster systems where OV Performance Agent is to be installed.

To Reset the IP Alias on the Network Interface Card

To reset the IP alias on the interface where the service or boot IP address is set, use the following shell script (from here on referred to as `set_alias` script):

```
#!/bin/sh
# Specify MWA alias IP address below
ALIAS_IP="0.0.0.0"
SERVICE_IP=`/usr/sbin/cluster/utilities/cllsif -cSi \
  $LOCALNODENAME | grep ":service:.*:ether" | cut -d: -f7 |\
uniq`
BOOT_IP=`/usr/sbin/cluster/utilities/cllsif -cSi \
$LOCALNODENAME |\
  grep ":boot:.*:ether" | cut -d: -f7 | uniq`
INTERFACE=`/usr/sbin/cluster/utilities/clgetif -a
$SERVICE_IP`
if [ $? -ne 0 ]; then
  INTERFACE=`/usr/sbin/cluster/utilities/clgetif -a $BOOT_IP`
fi
if [ "$INTERFACE" != "" ]; then
  #IP has changed, set IP alias again on interface with
SERVICE_IP
  /usr/sbin/ifconfig $INTERFACE $ALIAS_IP alias
fi
```

The *ALIAS_IP* variable should contain the same IP address you used to install the OV Performance Agent. If you copy the shell script to other systems in the cluster, make sure to change the *ALIAS_IP* variable. The shell script gets service and boot IP addresses for the local system, and sets the IP alias on the interface where either of the two was found.

In addition, you can use the `set_alias` script as the post-event script for the following HACMP events:

- Acquire service address
- Release service address
- Swap adapter

To Reset Events on HACMP 4.2.2

To reset events on HACMP 4.2.2, follow these steps:

1 Use the `SMIT` screens by entering the following command in a shell:

  `smit hacmp`

2 Select the following:

  Cluster Configuration -> **Cluster**

  Resources -> **Change/Show Cluster Events**

3 Select the appropriate option from the list, and fill in the `Post-event Command` field.

  You can put the `set_alias` script in the following directory:

  `/usr/sbin/cluster/local`

To Reset Events on HACMP 4.3.1

To reset events on HACMP 4.3.1, follow these steps:

1 Use the `SMIT` screens by entering the following command in a shell:

  `smit hacmp`

2 Go into the Cluster Events menu.

3 Select the following:

  Cluster Configuration -> **Cluster Resources** -> **Cluster Events**

4 Add the `set_alias` script to the Known Cluster Events list.

5 Select the following:

  Define Custom Cluster Events -> **Add a Custom Cluster Event**

6 Set the following:

  `Cluster Event Name` Set to `set_alias`

  `Cluster Event Description` Set to `MWA set_alias`

`Cluster Event Script Filename` Set to `/usr/sbin/cluster/local/set_alias`

Then click **[OK]**.

7 Assign it to all appropriate events.

Press **Cancel** to go to the previous level. Then select **Change/Show Cluster Events**.

8 Select the appropriate option and enter **`set_alias`** in the `Post-event Command` field for each event:

- acquire service address
- release service address
- swap adapter

Configuring Data Sources

OV Performance Agent uses the coda daemon or a set of repository servers that provide previously collected data to the alarm generator and the OV Performance Manager analysis product. The coda daemon uses the HTTP data communication mechanism, and the repository servers use the DCE mechanism. If both HTTP and DCE data communication mechanisms are enabled, OVPA uses both the coda daemon and the set of repository servers. Each data source consists of a single log file set.

The data source list that coda accesses is maintained in the datasources configuration file that resides in the /var/opt/OV/conf/perf/ directory. The data source list that the repository servers access is maintained in the perflbd.rc file that resides in the /var/opt/perf/ directory. The perflbd.rc file is maintained as a symbolic link to the datasources file.

There is a repository server for each specific data source such as scopeux log files or DSI log files. When you first start up OV Performance Agent after installation, a default data source named SCOPE is already configured and provides a scopeux log file set.

If you want to add other data sources, you can configure them in the datasources file. If you no longer want to view the OVPA or DSI log file data from OV Performance Manager, or process alarms for the log file, you can modify the datasources file to remove the data source and the path to the log file set. When you restart the coda daemon or the repository server, it reads the datasources file and makes the data available over datacomm linkages to analysis tools for each data source it finds. Restart coda or the repository server as described in Datasources Configuration File Format on page 56.

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 or the repository server will skip the data source.

You might also choose to stop logging DSI data to a log file set but keep the coda daemon or the repository server open so you can view the historical data in OV Performance Manager. In this case, stop the dsilog process but do not delete the data source from the datasources file.

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 DSI log file (created by the `dsilog` 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`, run the following command to make the new data sources available through `coda`:

```
/usr/lpp/perf/bin/ovpa restart server
```

If you are also running repository servers, run the following command to make the new datasources available through repository servers (`rep_server`):

```
/usr/lpp/perf/bin/mwa restart server
```

Note that stopping repository server processes results in any connection to OV Performance Manager being lost. For example, if you are drawing a graph on a data source and try to draw another graph, you will need to reselect the data source in OV Performance Manager and re-establish the connection when the repository server 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.

For specific examples of configuring DSI data sources, see "Configuring Data Sources" in Chapter 4 of the *HP OpenView Performance Agent for UNIX Data Source Integration Guide*.

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 OV Performance Agent in the /usr/lpp/perf/newconfig/ directory and is copied into the /var/opt/perf/ directory during installation, if there is not an existing /var/opt/perf/parm file. For a complete description of the parm file and its parameters, see the “Parm File” section in Chapter 2 of the *HP OpenView Performance Agent for UNIX User’s Manual*.

Defining Alarms

If you plan to use alarms to monitor performance, you need to specify the conditions that generate alarms in a set of alarm definitions in the OV Performance Agent `alarmdef` file. When OV 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 Chapter “Performance Alarms,” in your *HP OpenView 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.

Viewing and Printing Documents

OV Performance Agent software includes the standard OV 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 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 4 OVPA Documentation Set

Document	File Name	Format
HP OpenView Performance Agent for IBM RS/6000 systems Installation & Configuration Guide	`ovpainst.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP OpenView Performance Agent for UNIX User's Guide	`ovpausers.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP OpenView Performance Agent for UNIX Data Source Integration Guide	`ovpadsi.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP OpenView Performance Agent & GlancePlus for UNIX Tracking Your Transactions	`tyt.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
Application Response Measurement (ARM) API Guide	`arm2api.pdf`	`/usr/lpp/perf/paperdocs/arm/C/`
HP OpenView Performance Agent AIX Metric Definitions	`metaix.txt`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP OpenView Performance Agent Metrics list by Data Class for all operating systems	`mettable.txt`	`/usr/lpp/perf/paperdocs/ovpa/C/`

Viewing Documents on the Web

The listed documents can also be viewed on the HP OpenView 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.

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 AIX, you can read a `.PDF` using the `acroread` command, if you have installed the Adobe Acrobat Reader on your system. Enter the following command where *<path>* is the location of the `acroread` command.

<path>`/acroread` *<filename>.pdf*

ASCII Text Files

To print a `.txt` file, type:

```
lp -dprintername filename
```

For example,

```
lp -dros1234 metaix.txt
```

Glossary

A

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 OV Performance Manager) and to OV Operations. 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 OV Performance Manager 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**.

C

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.

D

data source

Consists of one or more classes of data in a single `scopeux` or DSI log file set. For example, the OV 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**.

data source integration (DSI)

The technology that enables OV 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 OpenView applications.

device

A device is an input and/or output device connected to a system. Common devices include disk drives, tape drives, CD-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 OV Performance Agent's DSI programs.

E

extract

An OV 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, OV Performance Manager. This file format is suitable for input to the `extract` and `utility` programs and is the preferred method for archiving performance data.

G

GlancePlus

GlancePlus (or Glance) 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**.

I

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.

L

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.

M

midaemon

An OV 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`.

mwa script

The OV Performance Agent script that has options for starting, stopping and restarting OV Performance Agent processes such as the `scopeux` data collector, `midaemon`, `ttd`, `coda`, `ovc`, `ovbbccb`, `perflbd`, `rep_server`, and the alarm generator. See also the `mwa` man page.

O

ovbbccb

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

ovc

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

ovpa script

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

OV 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.

P

parm file

An OV 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.

PerfView

See **OV Performance Manager**.

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**.

R

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.

repository server

A server that provides data to the alarm generator and the OV Performance Manager analysis product. There is one repository server for each data source configured in the `perflbd.rc` configuration file. *See* also **data source**.

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.

S

scopeux

The OV 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`.

T

transaction log file

See **logtran**.

transaction tracking

The technology used in OV 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.

U

utility

An OV 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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