HP Performance Agent

For the IBM AIX Operating System

Software Version: 4.70

Installation and Configuration Guide

Manufacturing Part Number: B7491-90088
Document Release Date: September 2007
Software Release Date: September 2007

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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 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 HP Performance Manager, or third-party analysis products. Also, Performance Agent provides data access to Performance Manager and sends alarm notifications to HP Network Node Manager (NNM) and HP Operations Manager.

Performance Agent supports monitoring of virtualized environments like LPARs. A new class of metrics `BYLS` is introduced to capture performance and resource data for the LPARs.

HP Performance supports monitoring of LPARs. For more information, refer to the section, Performance Agent on a Virtualized Environment.

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

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

Installation Requirements

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

Hardware

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

- IBM RS/6000 and pSeries systems

Software

- Performance Agent requires IBM AIX 5L V5.2 or AIX 5L V5.3 ML3 and later.
- The `libC.a` library is required for the Performance Agent to operate properly. The library is bundled within the `xlC.rte` package, available from your AIX OS DVD-ROM disk media.
- The `libSpmi.a` library is a prerequisite on AIX 5L V5.2 and later for the memory metrics to be calculated accurately and also to collect cross-partition metrics for the BYLS class. The library is bundled within the `perfagent.tools` file set from your AIX OS DVD-ROM disk media and is installed in the `/usr/lib/` directory.
- BYLS class of metrics is supported on IBM AIX 5L V5.2 ML3 and later.
- To collect and log cross-partition metrics, `xmservd` daemon should be available. `xmservd` is a bundled software of the Performance Toolbox for AIX which is a licensed software.

Communication Protocols

Performance Agent supports the following communication protocols:

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

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.

1. 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.
2. All the default OS daemons and services should be enabled and running for the IBM AIX system.

Disk Space

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 Performance Agent, 70 MB of disk space is required in the `/usr/lpp/perf/ and /usr/lpp/OV/` directories.
- For Performance Agent 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 Performance Agent for UNIX User’s Manual*.

Install or Upgrade Procedures

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

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.

Upgrade

If you are upgrading Performance Agent, the previously used DCE or NCS protocol is retained by default. If you have previously installed Performance Agent or GlancePlus on the system, you must perform the following tasks:

- Create directory mounts to redirect the base directories to other locations in the filesystem. For more information, refer to the section Read Before Installation on page 13.
- Stop any performance tools or processes that may be running. For instructions, refer to the section Stop Active Performance Tools or Processes on page 15.
- Install Performance Agent. For instructions to install Performance Agent refer to the section Install Performance Agent on page 16.

First Time Installation

If you are installing Performance Agent for the first time, by default, the data communication protocol is set to HTTP. For step to install Performance Agent, refer to the section Install Performance Agent on page 16.

Install DVD-ROM Contents

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

- `tarfile` consists of common Performance Agent files.

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

- `tarncs` consists of files specific for Performance Agent using `llbd` to run in NCS mode.
- `tardce` consists of files specific for 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 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.04.70.00 NCS 09/28/07 AIX 5.1+

    ttd  C.04.70.00      09/28/07 AIX 5.1+

perflbd  C.04.70.00 NCS 09/28/07 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 20.

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 Performance Agent to run properly. If `dced` was *not* already running before installation, you have to start the `dced` daemon and Performance Agent manually. For more information on how to install DCE refer to your DCE-specific documentation. You can start 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 Performance Agent Automatically on page 29 in Chapter 2 for information about starting the daemons automatically.

If you have Operations Manager agent installed on your system, see Installing Performance Agent with Operations Manager Agent Installed on Your System on page 19.

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.

Read Before Installation

This section provides information that you should consider, if you have used base directory symbolic links, to redirect the install location to different directories. Else you may proceed to with the installation instructions described in the subsequent sections.

On AIX platform, you can create base directory symbolic links, to redirect the install location to a different directory. The base directory symbolic links will be preserved during the first time installation of the product.

However, the symbolic links may not work when you are upgrading to a newer version of Performance Agent. When you are upgrading from a older version, as a part of the upgrade process, `installp` removes the symbolic links and replaces it with the default directory.

Hence the use of symbolic links to redirect base directories is not recommended and not supported on AIX.

You may face the same problem if you install any other HP Software product on your system. (Example: Performance Agent installed with the Operations Manager agent)

Instead of symbolic links in base directories (`/usr/lpp/OV` and `/var/opt/OV` for Operations Manager and additionally `/usr/lpp/perf` and `/var/opt/perf` for Performance Agent), use directory mounts to redirect the base directories to other locations in the filesystem.

The steps to redirect `InstallDir` and `DataDir` to a different file system are as follows:.

You must use directory mounts to redirect the base directories to other locations in the filesystem before the product installation.

The following steps are migrate an already existing installation from symbolic links to the usage of mount points:

1. Stop the OV software by typing:

   ```
   ovc -kill
   ```

2. Remove the symbolic links

Perform the following tasks to mount the directories of the installed software at the new mount points.

3. Create mount points for `InstallDir` and `DataDir`

   a. **`mkdir /usr/lpp/OV`**

   b. **`mkdir /var/opt/OV`**

4. Add the mount points to `/etc/filesystems`

5. Edit `/etc/filesystems` and add entries for `InstallDir` and `DataDir` (filesystem type `namefs`)

Example

To redirect `InstallDir` to `/mgmt/install/OV` and `DataDir` to `mgmt/data/OV`:

1. Open the file using the command
   `vi /etc/filesystems`

2. Add the following entries

   `/usr/lpp/OV:`

   ```
   dev             = /mgmt/install/OV
   vfs             = namefs
   mount           = true
   ```

```
                options         = rw
                account         = false
/var/lpp/OV:

                dev             = /mgmt/data/OV
                vfs             = namefs
                mount           = true
                options         = rw
                account         = false
```

3 Mount the filesystems by typing:

   a **mount /usr/lpp/OV**

   b **mount /var/lpp/OV**

4 Type the following command to verify the setup:

   mount

   The base directories `InstallDir` is redirected to `/mgmt/install/OV` and `DataDir` is redirected to `mgmt/data/OV`.

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.)

   lsdaemon should be stopped prior to installation. Run `ps -ef | grep lsdaemon`, to make sure that no lsdaemon process is running.

3 If a previously installed version of 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 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.

Install Performance Agent

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

If you are installing 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 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 20.

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 Performance Agent.

Table 1 Performance Agent installation options

Options	Performance Agent Standalone (No Operations Manager 7.x)	Performance Agent on Operations Manager 7.x installation in DCE mode	Performance Agent on Operations Manager 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 Performance Agent and the previously used protocol on upgrade to the current version of Performance Agent		
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 Performance Agent and, tarfile and the previously installed fileset on upgrade to the current version of Performance Agent		

To install:

1. Make sure you are logged in as user **`root`**.
2. Mount the DVD-ROM to a file system (using `SMIT` or the `mount` command).
3. Change to the DVD-ROM directory by typing:

   `cd /`<*directory*>**`/AIX`**

   where <*directory*> is your DVD-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 28 in Chapter 2.

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

If you have Operations Manager agent installed on your system, see Installing Performance Agent with Operations Manager Agent Installed on Your System on page 19.

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

6 Exit the DVD-ROM directory by typing:

```
cd /
```

using `SMIT` or the `umount` command.

Performance Agent installation is now complete. Go to Chapter 2, Starting and Running HP Performance Agent for details on other tasks you need to perform to get 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 Performance Agent. Both Performance Agent and GlancePlus must always be the same version.

Installing Performance Agent with Operations Manager Agent Installed on Your System

If you are installing 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 Operations Manager 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 Performance Agent, if Operations Manager 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 Operations Manager 8.x agent on your system does not affect the default installation behavior of Performance Agent. During first time installation of Performance Agent on systems that have Operations Manager 8.x agent installed, the HTTP communication protocol and the NCS set of files are installed by default. If you are upgrading Performance Agent, the existing communication protocol is used, and the corresponding set of files is installed. For more information on how Performance Agent is installed, see Install Performance Agent on page 16.

Deploying Performance Agent Using Operations Manager

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

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

The install.ovpa Script

To install 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 Performance Agent upon successful installation. By default, 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 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 Performance Agent

If you need to remove Performance Agent from a system, use the `ovpa.remove` script that is in the `/usr/lpp/perf/bin/` directory. However, before removing 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 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 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 HP Software products and are required by other tools. They will be removed only when the last tool requiring them is also removed.

Performance Agent on a Virtualized Environment

Performance Agent installed on the LPARs provides a CEC (Central Electronics Complex) wide view. Performance Agent uses the RSI (Remote Statistics Interface) interface to discover all the LPARs configured on a CEC and to collect performance (the BYLS class of metrics) data from the LPARs. The list of LPARs discovered using RSI interface is controlled through configuration file `Rsi.hosts`. The RSI interface searches for the configuration file in following directories (in the listed order): `$HOME`, `/etc/perf` and `/usr/lpp/perfmgr`.

BYLS class of metrics is supported only on IBM AIX 5L V5.3 ML3 and later.

If any of the LPARs is restricted from responding through the configuration file `Rsi.hosts` then information about those LPARs will not be available. For information on `Rsi.hosts`, refer to the latest IBM documentation on Remote Statistics Interface Programming.

Performance Agent might not always discover all the LPARs configured on the current CEC.

If the configuration file `Rsi.hosts` is not available, then the RSI interface sends invitational broadcast messages to all the systems within the network. From the list of systems which respond to the message, Performance Agent discovers LPARs configured on the CEC.

Some LPARs may not be reported by Performance Agent if they are not responding to RSI calls within the `timeout period`. This `timeout period` cannot be configured from Performance Agent.

2 Starting and Running HP Performance Agent

Introduction

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

- Starting and Stopping Performance Agent
- Communicating Across a Firewall
- Configuring Secure Communication
- Configuring HP 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 Performance Agent for UNIX Data Source Integration Guide*.

Starting and Stopping Performance Agent

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

If you are installing Performance Agent for the first time, the default data communication mode is HTTP. If you are upgrading 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 28.

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

It is recommended that you use the `ovpa` script to start Performance Agent and enable Performance Agent 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 Performance Agent 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 Performance Agent, check to see if any processes are running by typing:

/usr/lpp/perf/bin/perfstat

Using the Performance Agent script

To start 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 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 appropriate options.

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

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 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 Performance Agent processes. This action does *not* disrupt any other process.

Using the mwa script

To start Performance Agent and its processes:

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

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

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

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

The `mwa` script starts 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 Performance Agent processes while they are running and restart them using the `mwa` script and its appropriate options.

- `mwa stop` stops all Performance Agent processes except `ttd` (transaction tracking daemon), `ovc`, and `ovbbccb`. `ttd` should always be left running. If Operations Manager agent is running on the system, `mwa stop` does not stop the `coda` daemon.
- 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 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.

- `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 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 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 29, 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 Performance Agent 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 Performance Agent. To start Performance Agent 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 Performance Agent Automatically

The process of starting 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 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 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 Performance Agent. The file contains various environment variables that control the behavior of Performance Agent when starting it. The file is a source file for the following scripts:

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

The file is removed only when Performance Agent is removed from a system and is *not* overwritten when Performance Agent is updated. When 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 Performance Agent are listed below.

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

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

- MWA_PROTOCOL determines whether 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 Performance Agent as an HTTP service
ncs	run Performance Agent as an NCS service
dce	run 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 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 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 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 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 33.

- 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 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.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/perf/status.ls
/var/opt/OV/log/coda.txt
```

Every time the 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

A firewall can be defined as a method for filtering the flow of data between one network and another. Performance Agent now supports HTTP 1.1 based communications interface for data access between clients such as Performance Manager and Reporter and server applications, in addition to the previously supported communication mechanism through a packet-filtering network firewall.

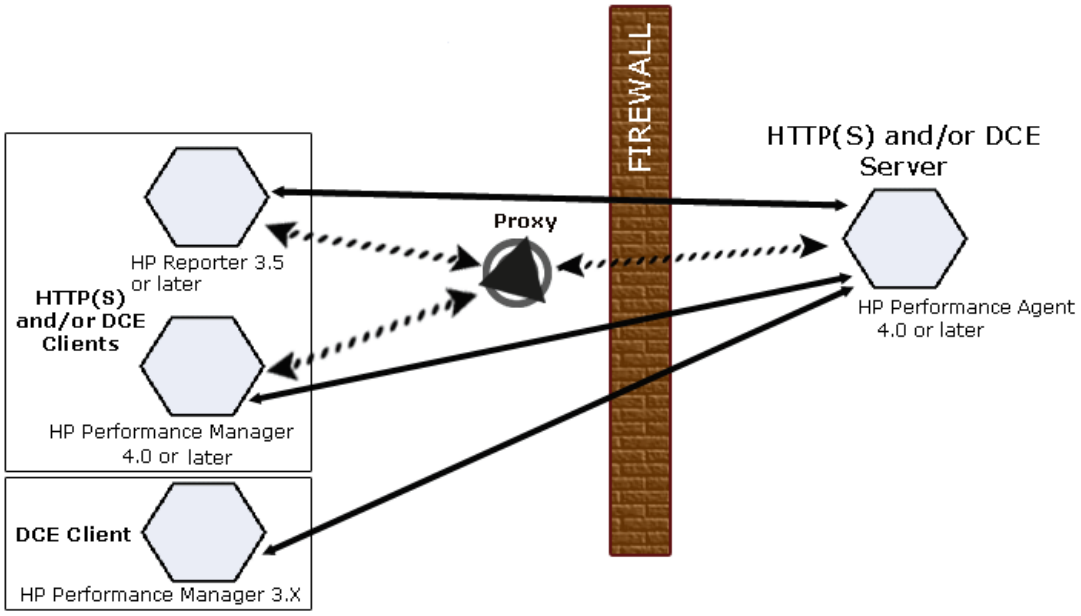
Performance Agent supports certificate-based secure (HTTPS) data communication only in the Operations Manager 8.x environment. For more information, see Using Certificates on page 48.

The HTTP based interface is flexible, because it can use proxies, requires fewer ports and is firewall friendly. The DCE interface is still available for use.

The following sections explain how to configure HTTP and DCE communication across a firewall:

- Communicating in the HTTP Environment
- Communicating in the DCE Environment

Figure 1 Communicating with Performance Agent in a Firewall Environment



The name 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

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 34 shows how Performance Agent communicates with Reporter (version 3.5 or later) and 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 through the proxy.

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

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 a 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 `ovconfchg` 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 ovpa using the following command:

```
ovpa restart server
```

Configure Two-Port Communication

By default, `coda` deamon 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 `ovconfchg` command. Type the following commands:

```
ovconfchg -ns coda.comm -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 <*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 versions 3.6 and earlier, and Performance Manager 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`

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 `CLIENT_BIND_ADDR` and `SERVER_BIND_ADDR` 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.

Communicating in the DCE Environment

In the DCE environment, Performance Agent uses dynamically allocated socket port numbers for interprocess communication. To communicate through a packet-filtering network firewall, you must configure the 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 Performance Manager and Performance Agent Communication

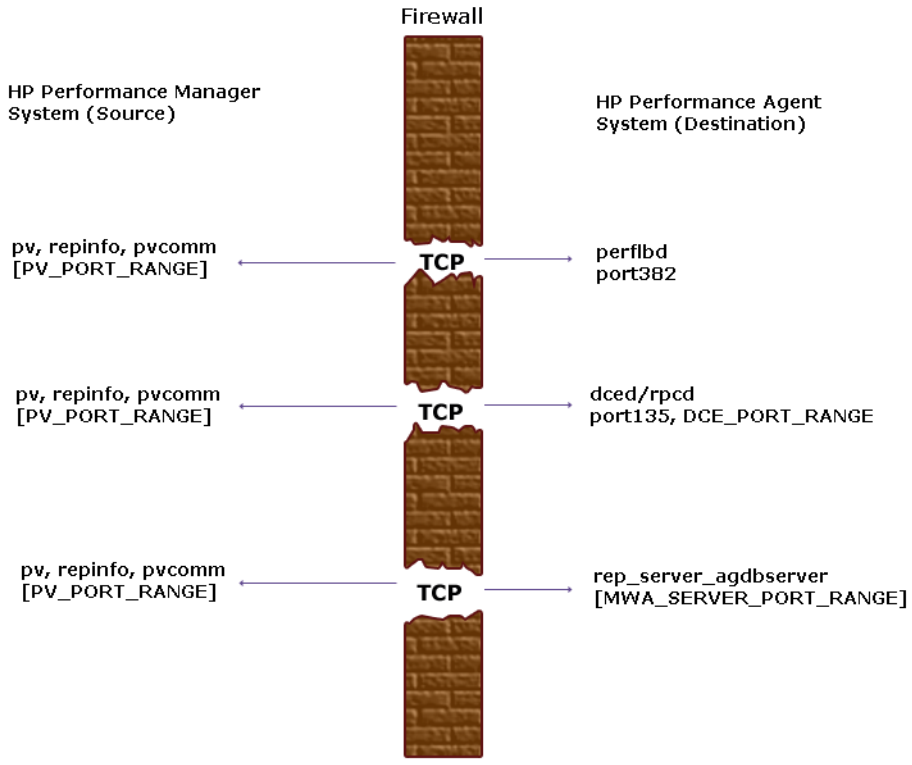
The method of configuring the socket port numbers for Performance Agent depends on the version of Performance Manager that will be communicating with Performance Agent. To configure the socket port numbers, follow the instructions in Configuring Performance Manager C.03.00 and Later with Performance Agent Communication on page 41.

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

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

Configuring Performance Manager C.03.00 and Later (Source) with Performance Agent Communication

When Performance Manager is the source, it communicates with 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
```

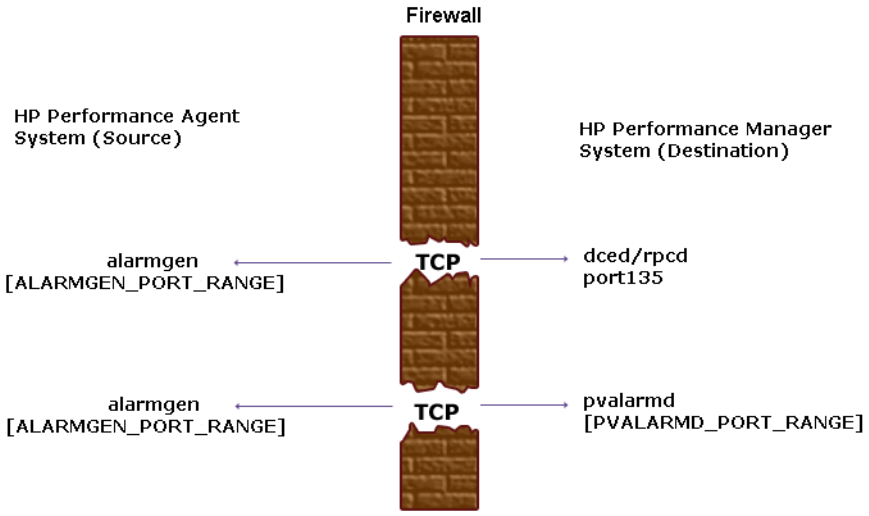
and there are three data sources configured in the `perflbd.rc` file, Performance Agent will use the following TCP port numbers:

```
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 Performance Agent (Source) with Performance Manager C.03.00 and Later Communication

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



If you previously had Performance Agent communicating to 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 Performance Manager system was changed from UDP to TCP, regardless of the version of 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 Performance Agent system was sending alarms to two 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 Performance Agent servers using `/usr/lpp/perf/bin/mwa restart server` to make the port restriction take effect.

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

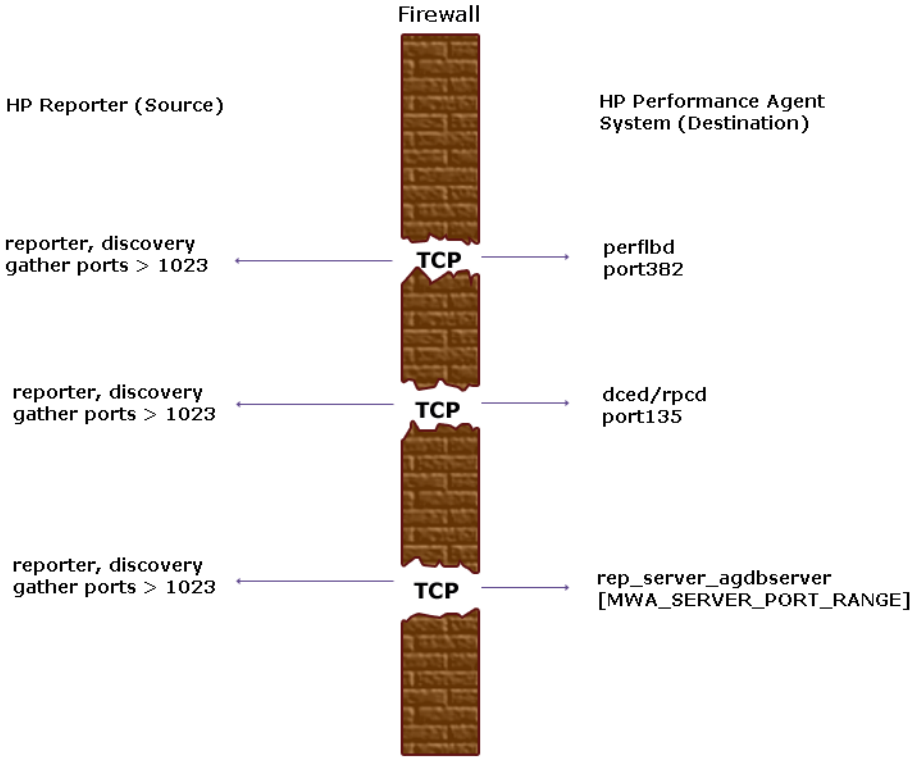
- Sending alarms from Performance Agent to Performance Manager through firewalls that use Network Address Translation (NAT) IP addresses is not supported.

Configuring Reporter and Performance Agent Communication

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

Configuring Reporter A.03.50 and Later with Performance Agent Communication

Reporter communicates with 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 Performance Manager C.03.00 and Later with Performance Agent Communication on page 41.

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 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 Performance Agent

Set the RPC_RESTRICTED_PORTS environment variable as follows:

- Stop the 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 Performance Agent, run:

  /usr/lpp/bin/mwa start server

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

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 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 (Service 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/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, 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 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 in the default 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 register for service with Performance Agent. 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 Performance Agent. Thus, an authorized Performance Manager connection continues to be permitted, regardless of changes in the Performance Agent `authip` file, until the data source to the 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 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 Performance Agent side, use the command:

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

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 HP Performance Agent to Run on a Cluster Node

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 Performance Agent has to have a fixed, always accessible IP address available.

Each cluster node system has its own 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 Performance Agent.

- If on the cluster node Operations Manager agent is installed and running, use the Operations Manager agent's IP alias (<*systemname*>_ito). For more information refer to the *HP Operations Manager for UNIX Administrator's Reference Volume II*. Proceed with Configuring the Performance Agent Environment on page 53.
- 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 Performance Agent. Proceed with Configuring the Performance Agent Environment on page 53.
- 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 Performance Agent on a cluster node, you *must* set an IP alias on each system on which you wish to run the 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 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 29.

Troubleshooting Hints

The following topics are described in this section:

- Possible problems

  Problems you may encounter when running 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, 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 Performance Agent server running on your system, else you will have to stop them.

f Start the 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 Performance Agent server running on your system, else you will have to stop them.

  f Start Performance Agent.

Fixing Problems with IP Aliases

Once you set the IP alias for 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 57.

  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 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 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

Performance Agent uses the coda daemon or a set of repository servers that provide previously collected data to the alarm generator and the 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, Performance Agent 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 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 Performance Agent or DSI log file data from 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 60.

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 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 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 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 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 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 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 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 Chapter "Performance Alarms," in your *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.

Viewing and Printing Documents

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 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 3 Performance Agent Documentation Set

Document	File Name	Format
HP Performance Agent for IBM RS/6000 systems Installation & Configuration Guide	`ovpainst.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP Performance Agent for UNIX User's Guide	`ovpausers.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP Performance Agent for UNIX Data Source Integration Guide	`ovpadsi.pdf`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP 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 Performance Agent AIX Metric Definitions	`metaix.txt`	`/usr/lpp/perf/paperdocs/ovpa/C/`
HP 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 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.

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`

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_PROSPECTOR	Used to disable data collection from coda datasource in a coexistence environment of HP Operations Agent and Performance Agent	false
ENABLE_PROSPECTOR	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_LIMIT	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 `coda.comm`:

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_ACCESS	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 `ovconfchg` tool to change the port settings on the Performance Agent system. Type the command:

`ovconfchg -namespace coda.comm -set SERVER_PORT` <*port 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`:

1 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.

2 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 namespace `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 communication broker in 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

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 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 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

CEC

Central Electronics Complex. A CEC is a single HMC-attached pSeries server, which can be divided into LPARs.

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 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 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 Operations Manager 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.

E

extract

The 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 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

The 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 Performance Agent script that has options for starting, stopping and restarting 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 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`, `ovc`, `ovbbccb`, 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.

P

parm file

The 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 **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 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 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 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

The 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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