

HP Performance Insight

for the HP-UX, Solaris, and Linux operating systems

Software Version: 5.41

Installation and Upgrade Guide for Oracle Databases

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1 Introduction

This guide describes how to install and upgrade the Oracle database and HP Performance Insight (PI) 5.41 in your operating environment.

The Guide Map

The guide is divided into 3 sections for an easy access of information:

Installation

- [Chapter 2, PI Installation Flow Chart](#) contains a flowchart that provides an overview of the installation process.
- Chapter 3 to Chapter 8 describe the pre-installation, installation, and post-installation steps for both the PI and Oracle.

Upgrade

- Chapter 9, Chapter 10, Chapter 11, and Chapter 12 describe the steps to upgrade the Oracle to 10g or 11g version and PI to version 5.41 from your existing setup.
- PI 5.41 supports Oracle versions 10g and 11g. If you are using an older version of Oracle database, you must upgrade it to Oracle 10.2.0.4 or 11.2.0.1. See, [Chapter 9, Upgrading to Oracle 10g Enterprise Edition](#) and [Chapter 10, Upgrading to Oracle 11gR2 Enterprise Edition](#) for more information on database upgrade instructions.

Uninstallation

Chapter 13 and Chapter 14 describe how to uninstall PI and Oracle respectively.

PI Architecture

PI uses a modular client-server architecture that enables you to start with a single standalone system and enables you to add other components to it, as needed. You can install PI as a standalone operating environment or as a distributed operating environment. You can install multiple remote clients and place them under the control of a single database server, or you can install multiple database servers around the network as necessary to create a distributed PI environment.

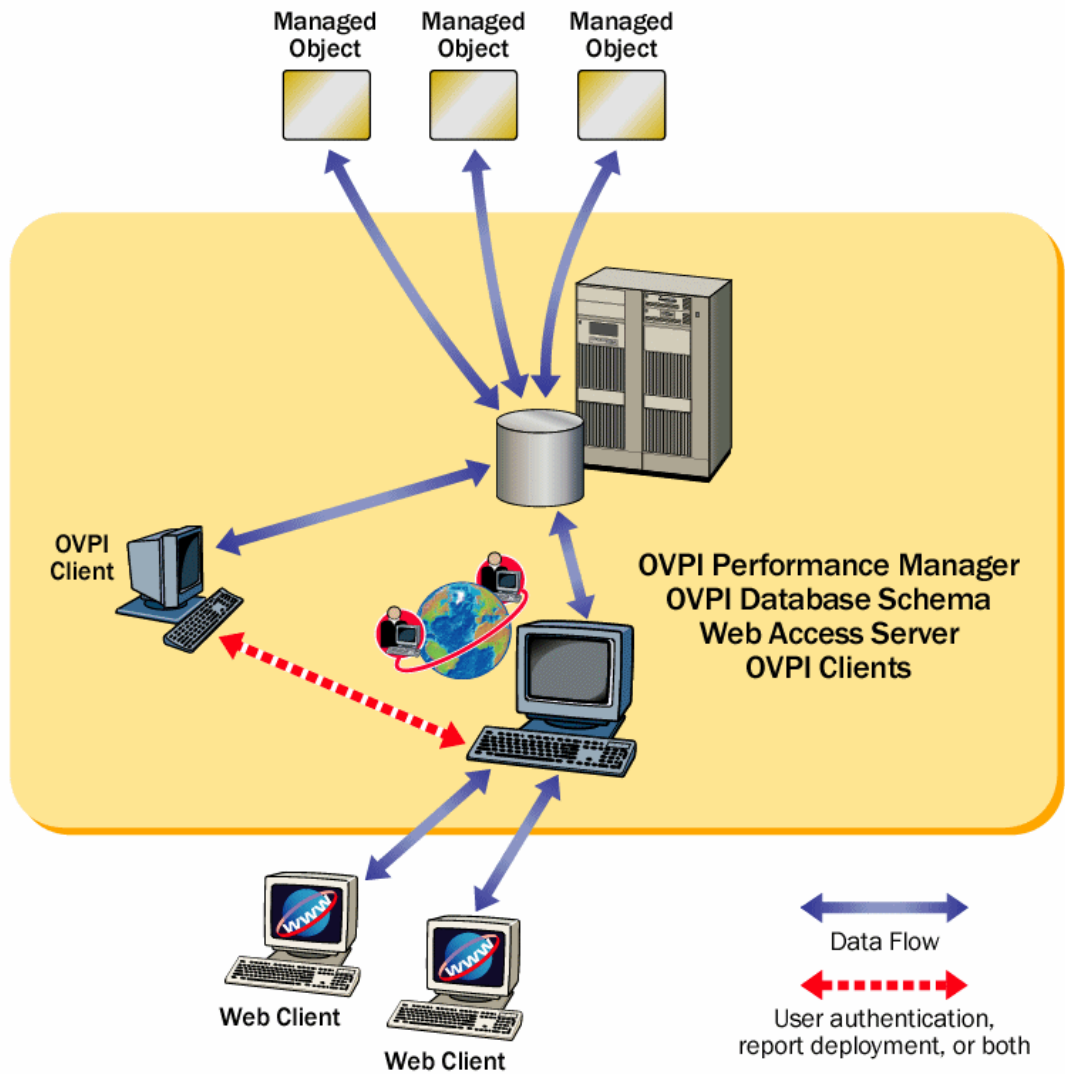
This section contains information about both implementations and how to choose between them.

Installing PI in a Standalone Environment

In a standalone environment, all PI components are installed on one system. The system is capable of polling the managed objects, gathering and processing performance data, hosting the PI web site, producing performance reports, and running the PI clients. This type of environment is simpler and easier to manage than the distributed PI environment.

To monitor network performance in a single building or for a single group of users, or if your network contains less than approximately 20,000 managed objects, implement a standalone PI environment.

Figure 1 Standalone PI Environment



Installing PI in a Distributed Environment

In a large enterprise, a single system may not provide the processing power or space for PI to optimally monitor the network, which makes it necessary to distribute the load.

When PI components are installed across systems to create a network-wide configuration, it is called a distributed PI environment. Although the PI components are installed on physically discrete systems, they operate as a single system.

PI in a distributed environment can monitor networks that are large and geographically dispersed. You can position the various PI components throughout the network to reduce network load and optimize system performance.



In a distributed PI environment, you must install the same version of PI, including service packs (patch levels), on all systems in the environment.

Distributing Functionality

The PI functions that can be located discretely are:

- Data collection
- Data management (processing and summarization)
- Data reporting

All these functions are integrated and their physical location does not affect their integration.

For the most cost-effective use of resources, you can use different platforms to run the different functions. For example, you can use PCs running the Windows operating system as remote polling systems to collect data, and UNIX machines as database servers to store and process data.

Distributing Servers

The main processing and reporting platform in a distributed PI environment is the **central database server**, which is accessible by users throughout the network. Typically, there is only one central database server. It requires a large amount of disk space, memory, and processing power.

There can be one or more number of **satellite database servers** in the distributed environment, each one responsible for data collection and initial data processing. The data from each satellite database server is uploaded to the central database server, where it is combined with other data.

Data collection places a significant load on the network and it is a time-sensitive processes. Remote polling systems are typically located close to the target devices they poll to localize polling traffic and minimize delays. Each polling system polls multiple devices and communicates with its parent satellite database server, which is most likely regionally based.

Typically, there is only one Web Access Server in the distributed environment, and it is installed on a system dedicated to servicing incoming report requests from accessible web-based client workstations and PI client workstations.

Figure 2 Simple Distributed PI Environment

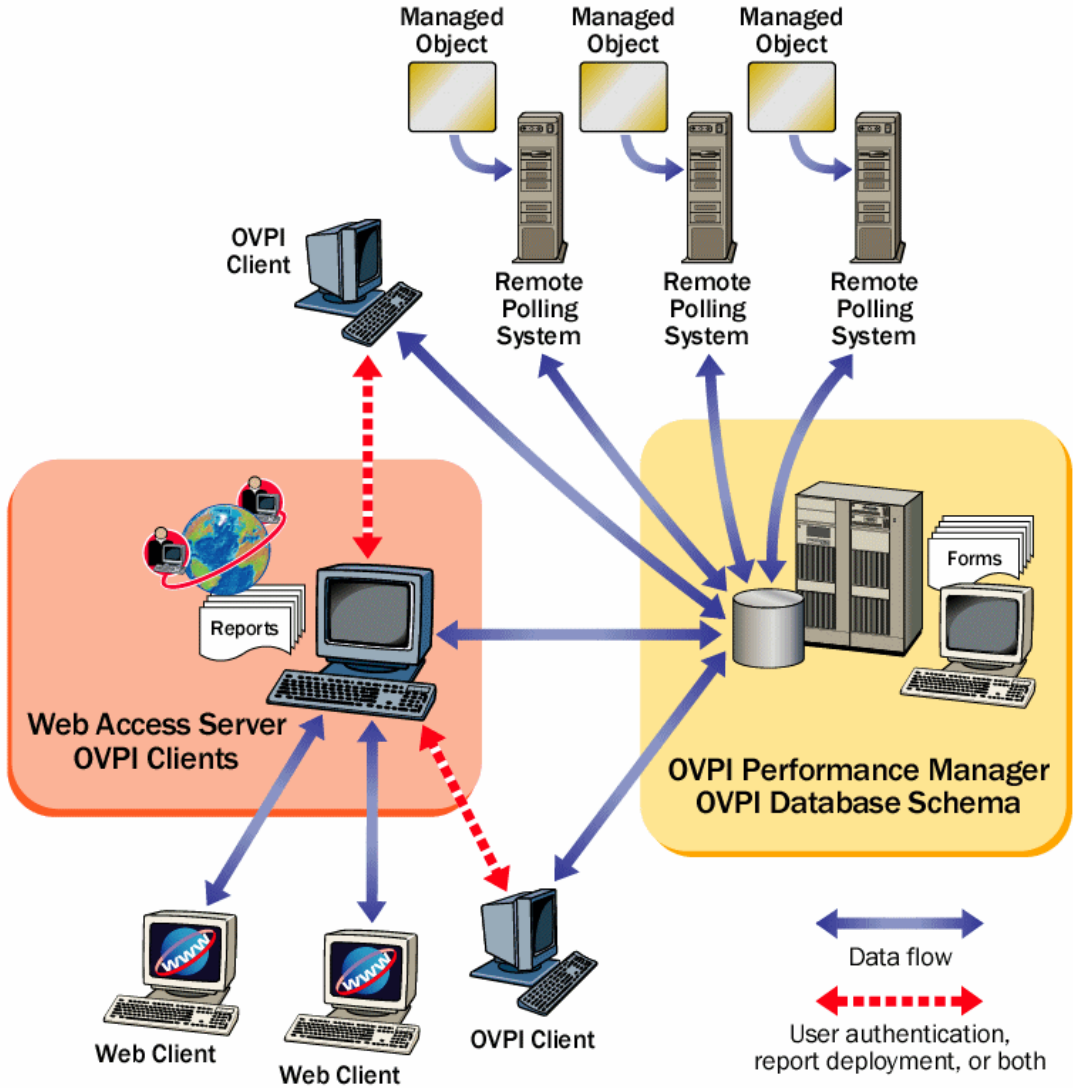
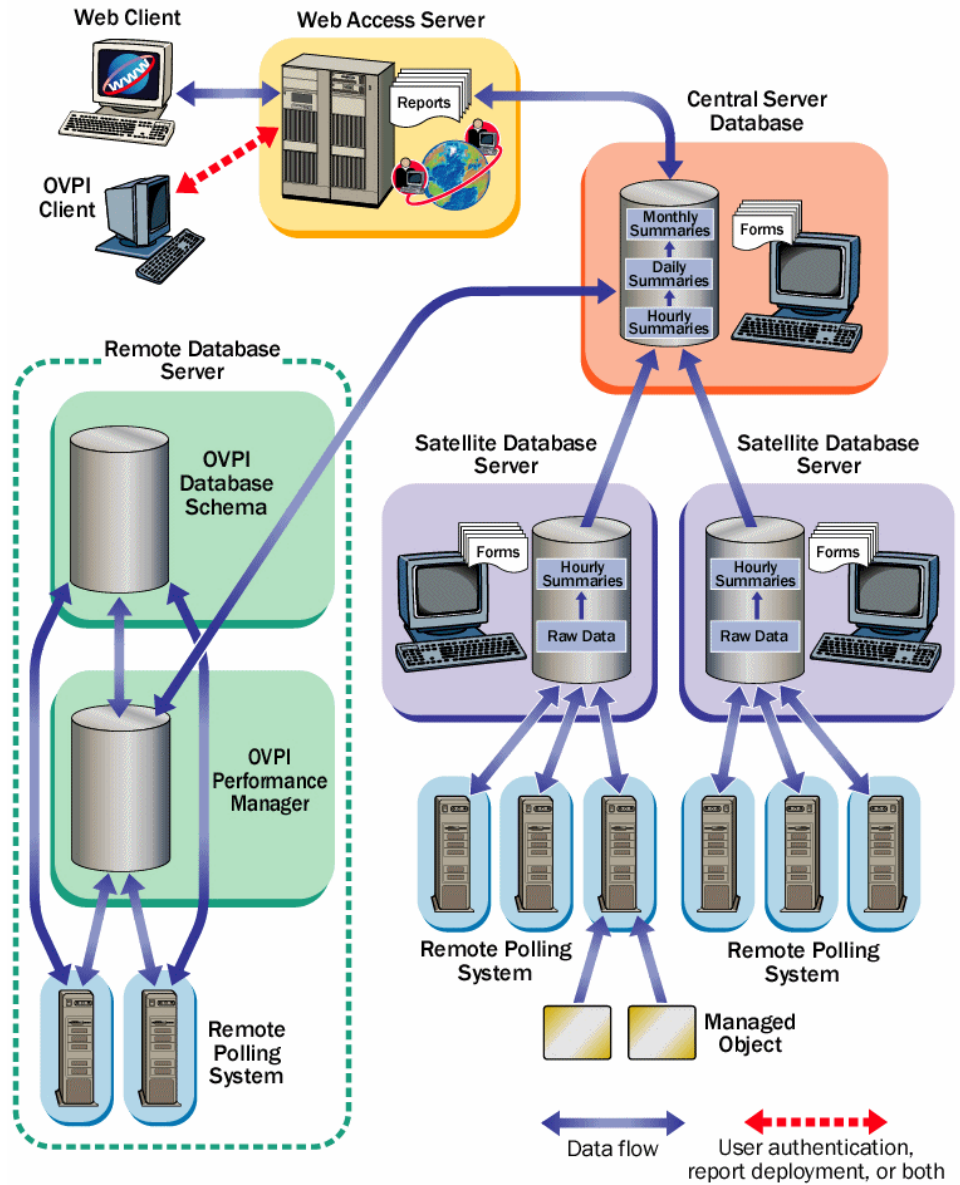


Figure 3 Complex Distributed PI Environment



In this example, multiple satellite database servers serve individual regions. Collected performance data is compiled locally and uploaded to the central database server.

Each satellite runs as a complete standalone system performing full data aggregation and reporting. In addition, each satellite copies some of its data to the central database server. This enables your regional reports to be displayed at the satellite, while network-wide reporting is available on the central database server.

Use Cases for Distributed PI Setup

A distributed PI environment can improve performance if one of the following is true:

- You have a large network that is geographically spread out and you want to see region specific data.
- You have more managed objects to be processed than one polling system can handle—typically more than 20,000 objects for polling and summarization. This limitation is affected by many factors, including the polling interval (more time to poll increases the number of instances that can be polled), number of child collectors spawned, network latency, device latency, and so on.

Apart from the sharing of processing load, there may be geographical, organizational, or functional reasons for considering a distributed environment. Consider the following use cases when installing PI in a distributed setup:

- **Use case 1: Number of Managed Objects**

The number of objects on which PI needs to report has a direct effect on the number of PI systems required, perhaps ruling out the need for a distributed environment completely, or requiring a minimum number of each type of system. Your HP sales representative can help you determine your PI system requirements.

- **Use case 2: Location of Managed Objects**

The geographical spread of the managed objects affects the need for remote pollers. Installing remote pollers close to the managed objects can reduce the distance the packets must travel. This increases polling response times and improves data collection reliability and performance.

- **Use case 3: Viewing Region Specific Reports**

If your network is spread across several regions, you can use one satellite database server per region. If the users located in a region prefer to look at reports specific to their region, you can configure each satellite server to perform full data-processing and also install a Web Access Server on the server. Though, this places a higher processing load on the satellite database servers, it reduces network traffic and time taken to access a report considerably.

- **Use case 4: Time Reports From the Central Database Server**

Every hour the Satellite database server processes the data collected and copies the processed data to the central database server. This reduces the processing load on the central database server and also the network congestion between satellite server and central server.

However, this reduces the granularity of the reports available at the central database server. Some reports, such as near real time reports, rely on the most granular rate data for display. If the data is not present on the central database server, it may be necessary to remove those reports.

PI Components

PI comprises of the following components:

- PI Database Schema
- PI Performance Manager
- Web Access Server
- PI Clients
- Remote Poller

PI Database Schema

The PI database is the primary repository for the data that is collected, processed, and reported on by the other PI applications. This component configures the database server for PI and creates the PI schema. For Oracle, it creates new tablespaces or installs into existing tablespaces that have been set up for PI.

PI Performance Manager

Performance Manager provides the engine for storing, processing, and accessing data collected from applications and network devices throughout your network. Data is automatically aggregated, summarized, and aged out by Performance Manager.

Performance Manager consists of a relational database and the server software. The database is the storage area that contains the data the PI server collects and processes. The size of the database depends on various factors, including the amount of data you want to store and the number of elements that you poll. The server contains the programs that collect, process, and report on the data.

Performance Manager is available for one or more physical servers. One of the physical servers is the central server, which is the main location for the data and the PI system. Typically, the processing of the data occurs on this server, as does the reporting of the data. This system typically has a large amount of disk space, memory, and processing power. Typically, there is only one central server.

The other physical servers are satellite servers. These machines contain data and the PI system. Typically, only the first level of processing occurs on these servers before the transfer of the data to the central server. In some cases, you can transfer the data to the central server before processing it; however, the amount of data to transfer may be very large. In other cases, you may transfer the data to the central server after the processing cycle is complete. A large deployment of PI can consist of multiple satellite servers.

Web Access Server

The Web Access Server is both a service and an application. It is installed as a service, and the following PI client applications are automatically installed with it: Report Builder, Report Viewer, Web Access Server (application server), and Management Console.

As a service, the Web Access Server provides authentication and configuration services to the PI client. It provides web-based reporting and user administration utilities.

PI Clients

The clients provide the interface to PI. You can install a client on any system connected to the network. The PI client applications are:

- Report Builder enables you to build and customize reports with multiple tables and graphs based on data from the PI database. See the *Performance Insight Guide to Building and Viewing Reports* for details.
- Report Viewer enables you to interactively view, modify, save, and print reports.

See the *Performance Insight Guide to Building and Viewing Reports* for details.

- Management Console enables you to perform administrative tasks using the following applications:
 - MIB Browser enables you to analyze, query, and troubleshoot Structure of Management Information (SMI)-compliant SNMP MIBs.
 - SNMP Discovery enables you to find the nodes in your network and determine whether a node is SNMP manageable.
 - Type Discovery enables you to determine the device type of a node.

- Package Manager enables you to install and uninstall packages and deploy and undeploy them from the Web Access Server.
- Object Manager enables you to view, edit, and delete the managed objects on your system.
- System Manager enables you to add, modify, and delete database and Web Access Server systems.
- Group Manager enables you to create groups from the managed objects referenced by the polling policies for your enterprise.
- Polling Policy Manager enables you to manage polling policies, import and manage nodes, and manage polling groups.
- Table Manager enables you to monitor your database, view data and property tables, and set defaults for tables, both individual and global.
- Location Independent Reporting (LIR) in a distributed environment enables you to report on data irrespective of the location of the node in the network.

Remote Poller

A remote poller system collects data but stores it elsewhere. It does not have a database, and it does not perform any processing. The remote poller performs the data collection tasks.

Typically, the remote poller stores its data on the satellite server, but it is located close (in terms of network path) to the target/pollled devices. This reduces the distance that the SNMP packets must travel.

Roles of Different Systems in PI Installation

After you determine the appropriate operating environment (standalone or distributed), you can install PI components accordingly.

The role a particular system serves in the environment—satellite database server, remote poller, web client, and so on—determines which PI components need to be installed on it. To help determine a system's role, you should understand the types of tasks it performs.

Standalone Environment System Roles

A standalone system is a single system that performs all data processing tasks. The system serves all roles and requires all PI components to be installed. Because data collection is performed from the database server, the standalone system does not require a separate remote polling system.

Distributed Environment System Roles

In a distributed environment, systems perform specialized roles:

- **Remote poller:** Performs data collection
- **Satellite server:** Performs the following processes:
 - Processes raw data to rate data
 - Summarizes rate data to hourly data

Typically, the satellite database server does not run processing routines on collected data more frequently than hourly. It copies partially aggregated data to the central database server where aggregation is completed.

- **Central server:** Receives partially processed data from one or more satellite servers and processes data from the hourly level to completion. It performs the daily, monthly, and forecasting summarization tasks.
- **Web access server:** Hosts the PI web site and handles reports requests and report viewing and building tasks from PI clients.
- **PI clients:** Multiple applications that let the user view reports, build reports, and perform numerous system management tasks.

The following table shows which PI components you would typically install for the type of environment and role.

System Role	RDBMS and PI Database Schema	PI Performance Manager	Web Access Server	PI Clients	Remote Poller
Standalone Environment					
PI	✓	✓ (includes polling function)	✓	✓	N/A
Distributed Environment					
Central Server	✓	✓	✓ (optional)	✓ (if no WAS)	
Satellite Server	✓	✓	✓ (optional)	✓ (optional)	
Web Access Server System			✓ (includes PI Clients)		

System Role	RDBMS and PI Database Schema	PI Performance Manager	Web Access Server	PI Clients	Remote Poller
Remote Polling System					✓
Client-Only					
PI Clients				✓	

Supported Configurations

Operating System	RDBMS	PI Component
HP-UX 11.11 PA-RISC	Oracle Database Server 10g (10.2.0.4) & 11g (11.1.0.6)	All
HP-UX 11.23 PA-RISC, 11.23 Itanium HP-UX 11.31 Itanium	Oracle Database Server 10g (10.2.0.4) & 11g (11.2.0.1)	All
Solaris 9 and 10	Oracle Database Server 10g (10.2.0.4) & 11g (11.2.0.1)	All
Red Hat Enterprise Linux ES 4.7 x86 (32-bit only)	Oracle Database Server 10g (10.2.0.4) & 11g (11.2.0.1)	All
Red Hat Enterprise Linux 5.4 x86_64 (64-bit only)	Oracle Database Server 11g (11.2.0.2)	All

Installation Media

The current version of PI includes the following installation media:

- PI 5.41 Installation DVD (includes Sybase RDBMS installation and documentation).
- Report Pack CD.

PI Documentation Set

The following is a list of manuals in the PI document set (apart from this manual). These documents are in the PDF format and you can access them by clicking the Help button in the PI user interface:

- Installation and Upgrade Guide for Oracle Databases on Windows operating system.
- Installation and Upgrade Guide for Sybase Databases on HP-UX, Solaris, and, Linux operating systems.
- Installation and Upgrade Guide for Sybase Databases on Windows operating system.
- Administration Guide
- Reference Guide
- Guide to Building and Viewing Reports
- Network Node Manager-Performance Insight Integration User Guide


You need Adobe Acrobat Reader to read these guides. If you do not have Acrobat Reader, you can install it from the docs folder, located in the PI install directory.

To view the online documentation:

- 1 From the Help menu, click **Help Topics**.
 - If you have not selected a browser for the client application (for example, Management Console or Report Builder) you are using, the Options dialog box opens, displaying the Browser tab. Go to [step 2](#).
 - If you have selected a browser for the client application you are using, a browser window opens, displaying the list of online documents. Go to [step 4](#).
- 2 In the Browser tab, do one of the following:
 - Type the web browser's complete directory path and application file name in the Browser Application box.

For example, the full path and application file name for Microsoft Internet Explorer might be:

```
C:\Program Files\Internet Explorer\iexplore.exe
```

- Click . The Open dialog box opens. Locate and double-click the web browser's application file name.

3 Click **OK**.

A browser window opens, displaying a list of the available documents.



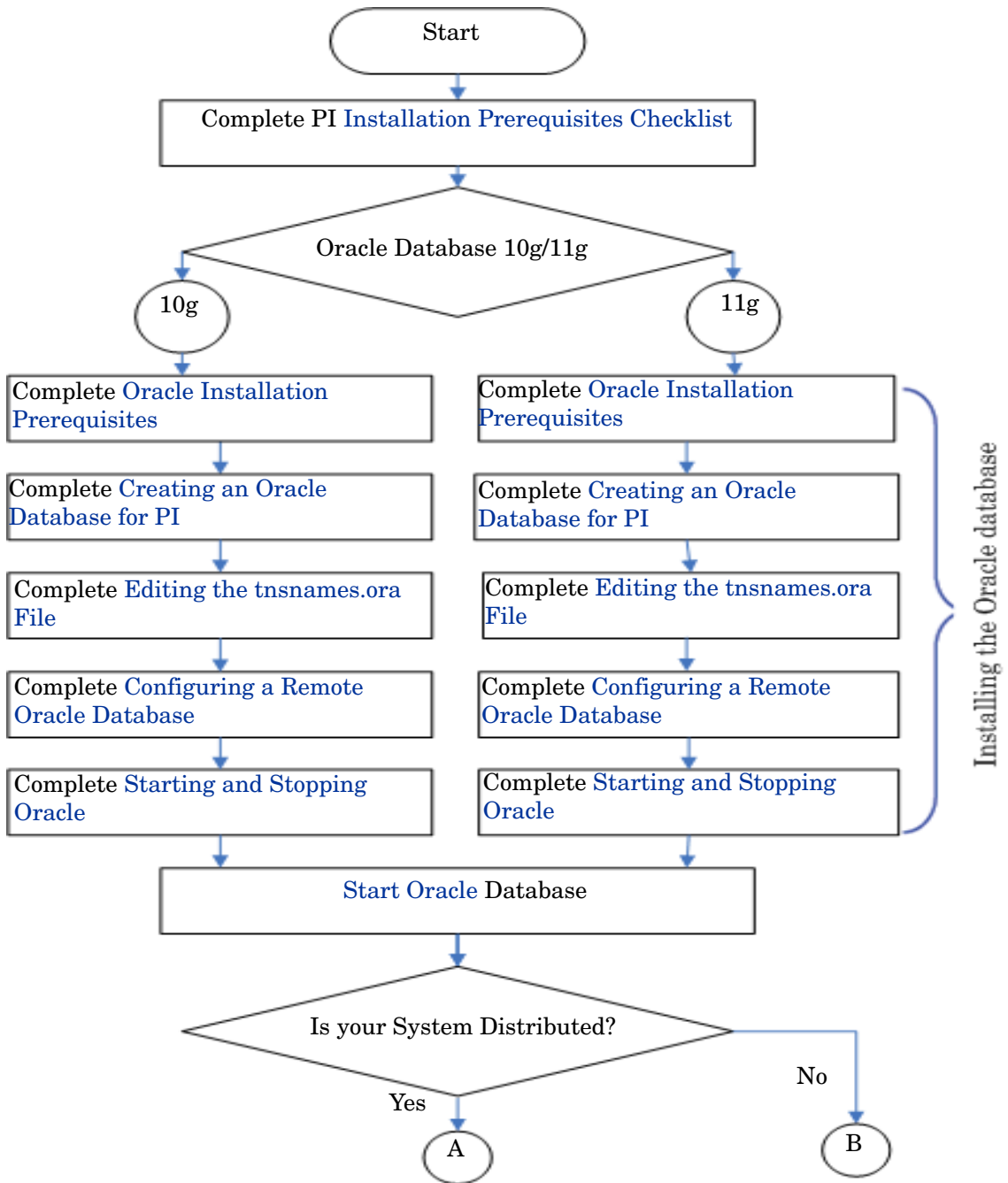
If Acrobat Reader is not installed on your system, click the **Acrobat Reader** icon to install it.

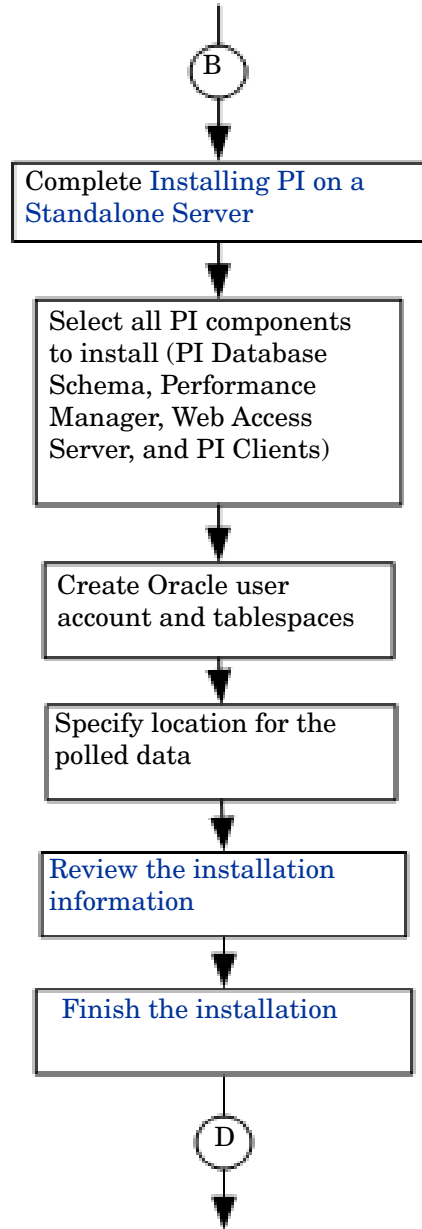
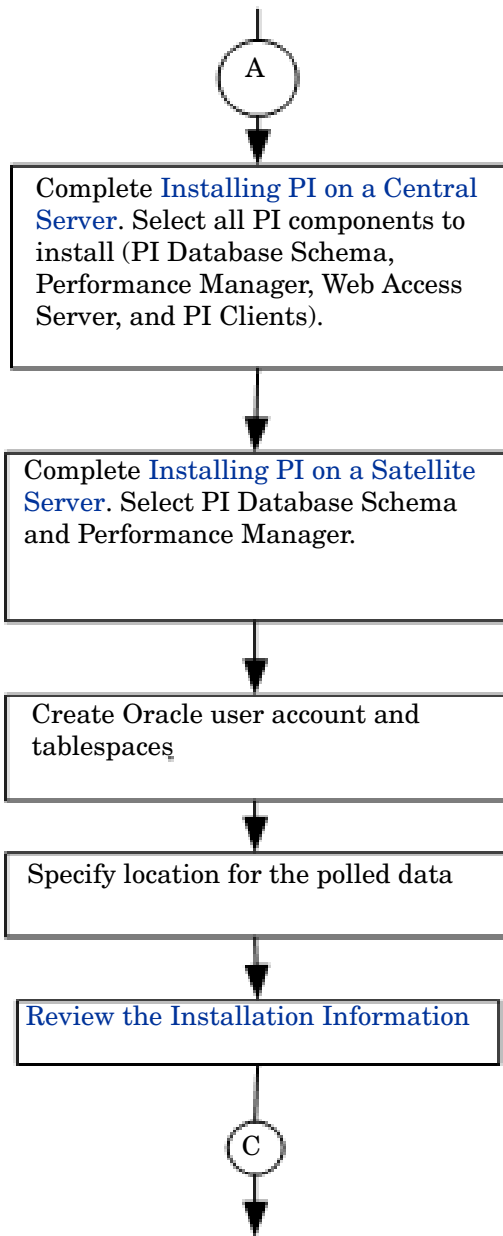
4 Click the title of the document you want to open.

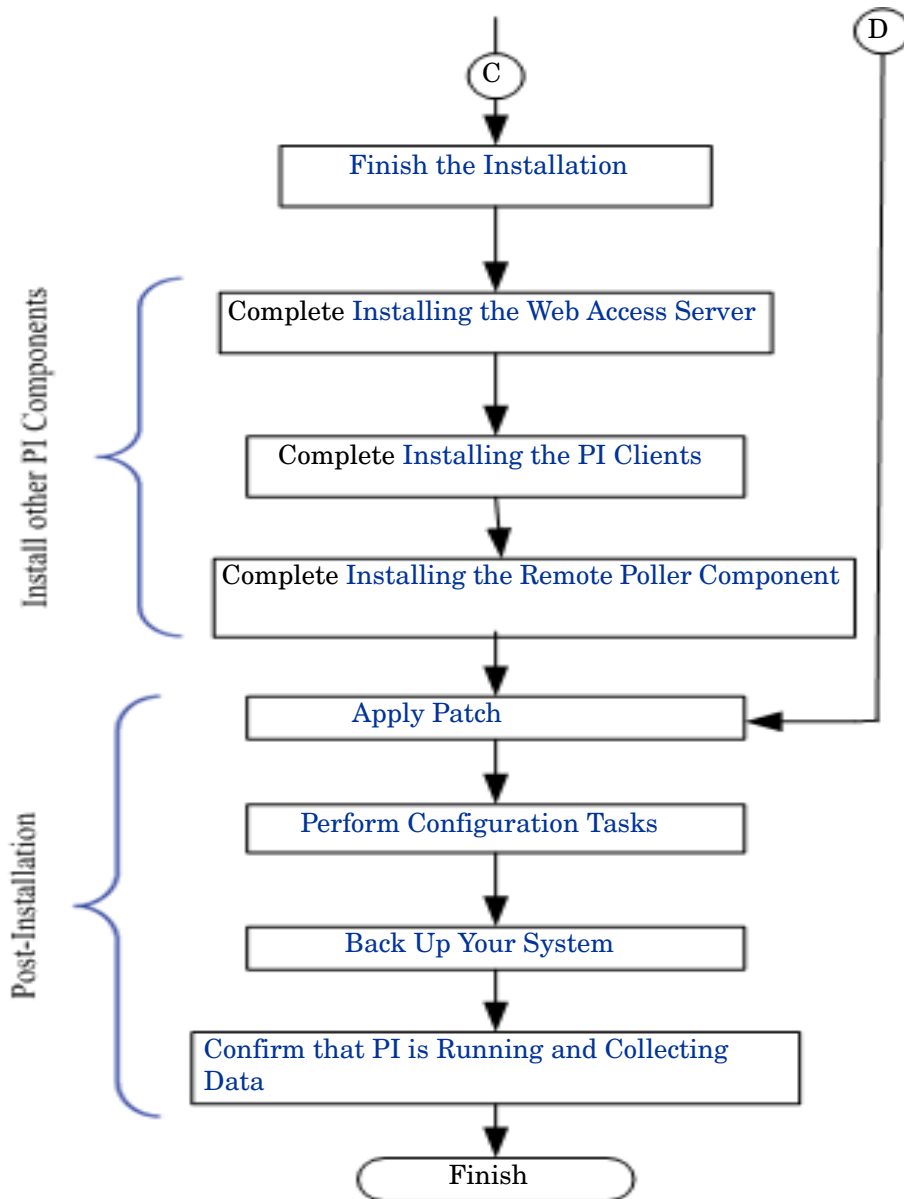
The guide opens in Acrobat Reader.

2 PI Installation Flow Chart

The following flowchart provides you a broad overview of the installation and post-installation steps for Oracle database and PI. Click the links provided in the flowchart to see the sections mentioned.







3 PI Installation Prerequisites

You read the *HP Performance Insight Release Notes* before you start installing Oracle RDBMS and PI. Release notes provide an overview of new features, defects, and a list of available Report Packs for the release.

Convert Evaluation to Licensed Installation

If you have downloaded and installed the evaluation version of PI 5.41 and you want to convert that installation to a licensed installation, follow these steps:

- 1 Close all PI GUIs and web browsers.
- 2 Insert PI 5.41 Production DVD in the DVD-ROM drive.
- 3 Browse to the “setup” command file for the Production software.
- 4 From the command line, type (in lower case): `setup -noeval`
- 5 Close the PI Installation GUI if it appears.
- 6 Restart the OVPI HTTP server.



This procedure is not a reinstallation. The evaluation version is identical to the production version except that the evaluation version displayed "Unlicensed Software" watermarks on reports and with the Help About version information. The installer changes your installation to remove the watermark.

Plan for Internationalization

PI supports internationalization. You can install PI on any language of the supported operating systems. Database support is internationalized for Oracle.

PreInstallation Tasks

Complete the following tasks in the sequence given before installing the Oracle RDBMS or PI components.

Task 1: Update Your Operating System Software

Install all required patches to your operating system software.



Contact your HP sales representative for the most recent list of patches required.

- 1 Verify patches for release levels.

Make sure that your operating system is at the correct release level. You must install operating system patches before installing the RDBMS.

HP-UX Systems

Type the following command:

```
/usr/sbin/swlist -l product | fgrep PH
```

Solaris Systems

Type the following command:

```
showrev -p
```

Required patches for Solaris are the following:

Solaris 10 Solaris 10 Recommended Patch Cluster, Sep/07/06

Solaris 9 Solaris 9 Recommended Patch Cluster, Oct/14/05

Red Hat Linux Systems

Type the following command:

```
more /etc/redhat-release
```

- 2 Install the required operating system specific patches.

HP-UX Systems

- For HP-UX 11.11 (PA)
 - GOLDAPPS11i: B.11.11.0612.459 Applications Patches for HP-UX 11i v1, December 2006
 - GOLDBASE11i: B.11.11.0612.459 Base Patches for HP-UX 11i v1, December 2006
- For HP-UX 11.23 (PA and IA):
 - QPKAPPS: B.11.23.0706.064 Quality Pack Depot for 11i v2, June 2007
 - QPKBASE: B.11.23.0706.064 Quality Pack Depot for 11i v2, June 2007
- For HP-UX 11.31 (IA):
 - PHKL_38397 or later
 - QPKBASE: B.11.31.0709.312a Quality Pack Depot for 11i v3, September 2007
 - QPKBASE: B.11.31.0709.312a Quality Pack Depot for 11i v3, September 2007

You can download the patches from <http://www1.itrc.hp.com/>

Red Hat Linux Systems

Linux (RHEL4): Update 6

Task 2: Install all the Patches Required for Java

PI includes Java 1.5, which automatically gets installed on your system during PI installation. However, Java may not run properly if you do not apply the operating system specific patches.

Required Java Patches

Download the latest Java patches for your operating system, from the following URLs:

HP-UX Systems: <http://www.hp.com/products1/unix/java/patches/index.html>

Solaris Systems: <http://java.sun.com> and find the Solaris OS Patches section.

Task 3: Identify Ports for Network Connectivity

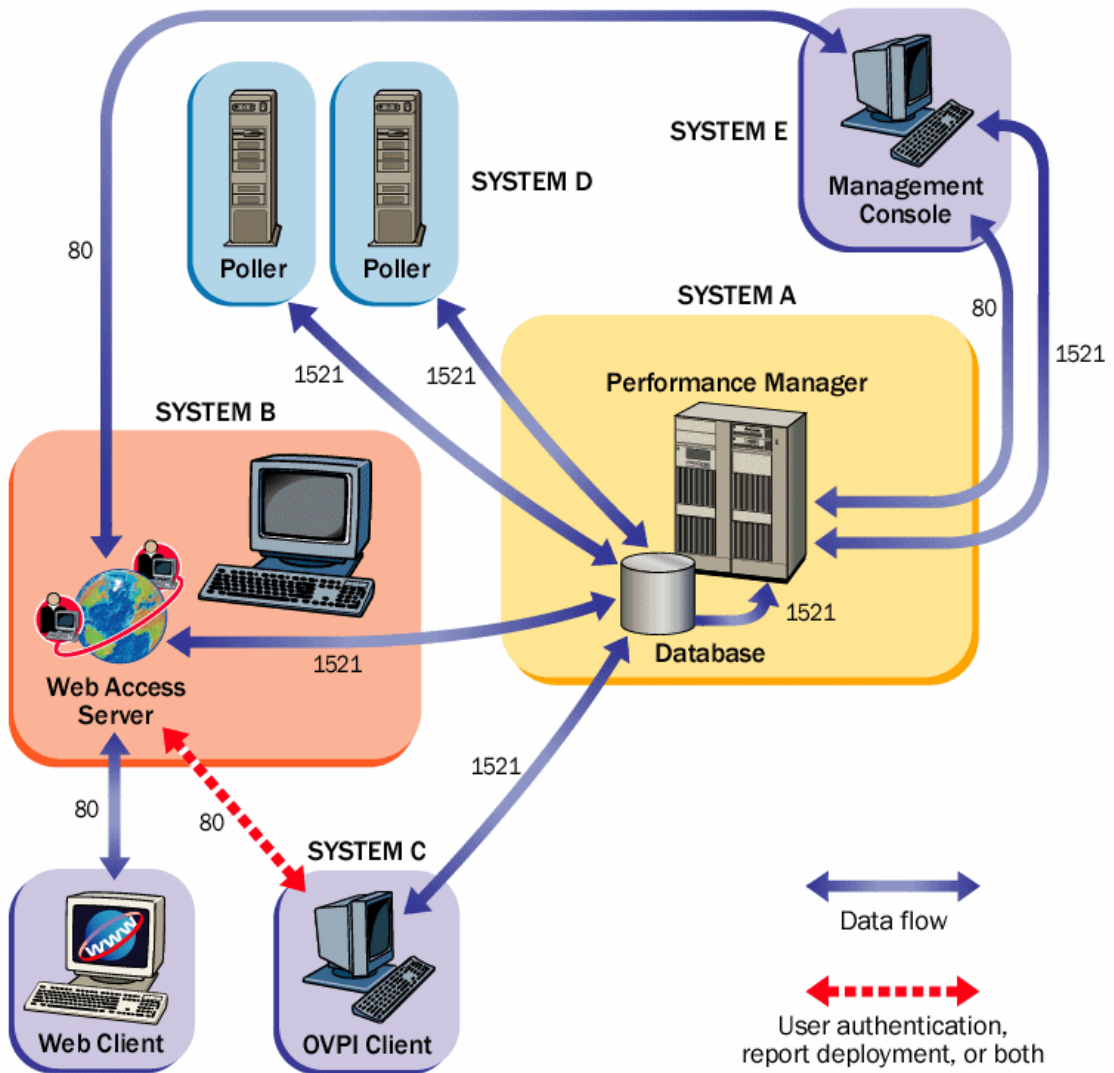
Ports establish connectivity between PI systems. PI uses the following default port numbers.

PI Component	Default Port Number
Oracle RDBMS	1521 (In secure or firewalled environments it may be necessary for you to ensure that the Oracle database server is running in Shared Server Mode (i.e. not in the Dedicated Mode). Otherwise PI would use dynamic port ranges when remote pollers initiate connections to the database, which may not be accommodated by the firewall.)
Web Access Server (Includes the management server, which also uses port 80 by default. If any other web server is running on port 80, use a different port for PI; for example, port 8080.)	80 (SSL not enabled) 443 (SSL enabled)
Management Console	80
Remote Poller	80



If you are using firewall software, you must open the PI ports in the firewall. For instructions, see your firewall documentation.

Figure 4 PI Configuration Using the Default Port Numbers



Polling and SNMP Connectivity

Any system that gathers data from the network requires connectivity through intermediate firewalls to reach the network devices. It is recommended that the remote poller system and polled devices be outside the firewall, and that the remote poller connects through the firewall to the database server. This reduces the number of connections through the firewall.

In situations where a satellite database server is controlling polling systems, you may need to create specialized polling policies to help divide the devices to be polled between polling systems. For information about creating polling policies, see the *HP Performance Insight Administration Guide*.

Client Connectivity

You must have HTTP connectivity between your systems and the Web Access Server, to view the reports using a web browser.

You must have connectivity between the client system and the Web Access Server system and the database server on the appropriate ports, to use the Report Viewer or Report Builder applications. When installing clients, specify the same Web Access Server and port number that was specified on the Web Access Server reference page. For more information about installing the Web Access Server, see [Installing the Web Access Server](#) on page 162.

Task 4: Plan for Web Access

- 1 Verify that you are using the supported web browsers.

Web users must be able to connect to one of the following web browsers:

- Microsoft Internet Explorer 5.5 or later
- Mozilla Firefox 1.5 or later

- 2 Verify that Java scripting is enabled.

Your web browser must have Java scripting enabled. Otherwise, you will not be able to view the Navigation frame for the Web Access Server application.

To enable Java scripting, do one of the following, depending on the web browser:

Internet Explorer

- a From the browser's Tools menu, select **Internet Options**. The Internet Options dialog box opens.

- b Select the **Security** tab. Click **Internet** for the Web content zone, and then click **Custom Level**. The Security Settings dialog box opens.
- c Scroll down the list of settings and locate the Scripting settings. Select **Enable** under Active scripting.
- d Click **OK** in the Security Settings dialog box.
- e Click **OK** in the Internet Options dialog box.

Mozilla Firefox

- a From the browser's Tools menu, select **Options**. The Options dialog box opens.
- b Select the **Content** tab and then select **Enable JavaScript** check box.
- c Click **OK** in the Options dialog box.

Task 5: Install the Distributed SNMP Security Pack for SNMPv3 Nodes

If you plan to collect data from SNMPv3 nodes, you must install the SNMP Security Pack product, available from SNMP Research International, Inc. Visit the SNMP web site for information:

<http://www.snmp.com>


Install the following version of the Distributed SNMP Security Pack, depending on the operating system:

- UNIX Systems: Version 16.2.0.35

You must configure your SNMPv3 nodes following installation. For configuration details, see the *HP Performance Insight Administration Guide*.

Task 6: Coexistence with Network Node Manager

- 1 Verify that you are running NNM version 7.53 or 8.1x.

-  PI can co-exist with HP Network Node Manager (NNM) version 7.53 and 8.1x. PI cannot co-exist with HP Network Node Manager (NNM) version 9.x or higher.

If NNM 7.53 is already installed on your system, you can install PI on the system. PI and NNM share components that enable the PI MIB Browser and Collection Wizard tools to function. These tools do not function with earlier versions of NNM.

- 2 Stop NNM processes before installing PI, to avoid errors from occurring during installation. To stop NNM follow the following steps:

UNIX Systems

- a At the command prompt, type:

```
ovstop -c
```

- b Verify that the NNM processes have stopped. At the command prompt, type:

```
ovstatus -c
```

Task 7: Stop Compaq Insight Manager Services (HP Compaq systems only)

If you plan to install PI on a Compaq system, you must stop the Compaq Insight Manager services.

Task 8: Verify that you are Using Supported Desktops

PI supports the Common Desktop Environment (CDE). PI does not support OpenWindows.

Installation Prerequisites Checklist

Before you proceed with the installation of Oracle RDBMS and PI, go through this checklist and ensure that all the tasks are completed.

- You have read the Performance Insight Release Notes for this release.
- You have decided whether to use a standalone or distributed environment. See [PI Architecture](#) on page 12
- You have all required installation media. See [Installation Media](#) on page 26
- You are using a supported system configuration (operating system and RDBMS). See [PreInstallation Tasks](#) on page 34
- You have identified which PI components to install on each system. See [Roles of Different Systems in PI Installation](#) on page 23 and [PreInstallation Tasks](#) on page 34
- You have installed the required patches for your operating system. See [Update Your Operating System Software](#) on page 34
- You have identified port numbers for network and client connectivity. See [Identify Ports for Network Connectivity](#) on page 36
- You have confirmed that your web clients are using a supported browser, and you have enabled Java scripting for the browser. See [Plan for Web Access](#) on page 39
- If required, you have installed the SNMP Security Pack. See [Install the Distributed SNMP Security Pack for SNMPv3 Nodes](#) on page 40

- If you are planning to install PI on a system that is running NNM, you have verified that you are using the correct version of NNM and you have stopped NNM processes. See [Coexistence with Network Node Manager](#) on page 40
- If you are installing on a Compaq system, you have stopped any Compaq Insight Manager services. See [Stop Compaq Insight Manager Services \(HP Compaq systems only\)](#) on page 41
- If you are a UNIX user, you are using a supported desktop. See [Verify that you are Using Supported Desktops](#) on page 41

Storage and Memory Requirements

The following table shows the minimum storage requirements for PI components, based on the operating system.

Component	HP-UX	Solaris	Linux
PI Database Schema	2500 MB	2100 MB	2000 MB
PI Performance Manager	840 MB	400 MB	400 MB
Web Access Server	810 MB	420 MB	400 MB
PI Clients	800 MB	340MB	320MB
Remote Poller	840 MB	200 MB	200 MB
Full Standalone	2500 MB	2200 MB	2100 MB



Ensure that disk space for `/opt` directory has around 900 MB free space. This size requirement is in addition to the storage requirement for PI components shown in the table.

The following table shows the minimum and recommended memory requirements for PI. The requirements are based on original system size recommendations, and may change based on polling requirements.

Component	Minimum	Recommended
PI Database Schema	512 MB	1 GB
PI Performance Manager (includes PI Database Schema)	2 GB	4 GB
Management Server	256 MB	512 MB
PI Clients	256 MB each ^a	512 MB

Component	Minimum	Recommended
Command-Line Utilities	256 MB ^b	512 MB
Remote Poller	256 MB	512 MB
Full Standalone Install	4 GB	8 GB

- a. If you plan to have more than one component running at the same time, the memory requirements are additive. For example, if you run the Management Console, Report Builder, and the Web Access Server simultaneously on one system, 768 MB is the minimum memory requirement. In a standalone installation, the Web Access Server and Management Server use the same Java Virtual Memory (JVM). The minimum, therefore, is still 256 MB.
- b. Command line utilities use relatively less memory.

The PI Database Schema is set to between 50 to 60 percent of total memory. The Management Server, PI clients, Command-Line Utilities, and Remote Poller are installed at minimum (1 to 2 GB of memory). The remaining processing space is used by the PI Performance Manager. Make sure that this space is large enough to handle polling and data loading.

To change the amount of memory for Report Builder, Report Viewer, or Web Access Server after installation, change the Java settings using the Web Access Server. See the *HP Performance Insight Administration Guide* for details.

Installation Parameter Values

PI provides default values for many installation parameters. Identify the changes you want to make in the installation parameters values before starting the installation process. This saves time.

The following table lists parameter defaults you might decide to change. Unless noted, parameters apply to both standalone and distributed installations.

Parameter and Description	Default Value
Destination Folder The directory where the PI software is installed.	/usr/OVPI
Oracle TCP/IP Port Number The TCP/IP port number that Oracle uses to communicate with clients and servers on other systems.	1521
Database Devices The directory where PI creates the database device files (if raw devices are used, device files are not created)	Oracle_directory/ dbfiles 50%
Database Size The size of the database device file.	800 MB
Transaction Log and Percent of Database	Oracle_directory/ dbfiles 50%
Temporary Space and Percent of Database	Oracle_directory/ dbfiles (UNIX) 50%

Parameter and Description	Default Value
<p>Cache Folder The cache directory used to store collected data before it is placed in the database.</p>	\$COLLECT_HOME
<p>Username The name for the Web Access Server administrator.</p>	trendadm
<p>HTTP Port The port number used for HTTP communication with the Web Access Server.</p>	80
<p>Web Access Server Host (used in distributed installs only)</p>	
<p>Web Access Server Port (used for distributed installations only) The HTTP port number used by the Web Access Server.</p>	80
<p>Remote Management Server Port (used for distributed installations only) The HTTP port number used by the database host system.</p>	80

4 Installing Oracle 10g Enterprise Edition

Install the Oracle RDBMS and it must be running, before you install PI. Make sure that the instance for the Oracle listener program created for PI is running.

Oracle Installation Prerequisites

- 1 Read the Oracle documentation.

Before installing the Oracle database, read the Oracle database installation guides, release notes, and readme files. Oracle documentation is on the Oracle Install CD. Oracle documents are also available online at **www.oracle.com**.


- 2 Consult database administrator.

Database administrator can help you design and set up the Oracle database and can help you with the creation of tablespaces for optimal use by PI.

- 3 Follow general performance guidelines, when installing Oracle for use with PI.

- Install Oracle and PI on separate physical devices.
- Keep minimum three active copies of the database control file on minimum three different physical devices.
- Use at least three groups of redo logs. Separate redo logs to the greatest extent possible onto devices with limited activity occurring when the database is in use. Shadow redo logs whenever possible.
- Put the system tablespace on a separate device.
- Put the datafile on separate devices from the index datafiles.

- Put the archive log files on a separate device.

 The intent of these recommendations is to reduce disk contention. In general, the more disk heads moving at the same time, the faster your database can operate.

4 Before installing Oracle, verify database size, storage, and memory.

- PI Database Size

You must consider the number of devices polled, the amount of data objects collected, and the length of time the data is stored to determine the size of the PI database. The total size is distributed across the various tablespaces.

A sizing spreadsheet can help you to estimate system requirements that is available on the latest version of the Report Packs CD. To determine the overall database size required, enter values for each Report Pack you install, and the number of objects (devices, interfaces, VPNs, and so on) that are managed.


Determining the size requirements enables you to accurately estimate the hardware resources necessary to support your configuration.

- Minimum Memory Requirement for PI Database

The PI database size is determined by many factors. If you completed the spreadsheet provided on the Report Packs CD, use it to guide you in estimating your database sizes and configuration.

If you are installing PI on the same system as the Oracle database server, you can allow the PI installation to create a database smaller than the total expected size because PI installation creates tablespaces that have the “autoextend” option enabled, allowing Oracle to add space as needed to the PI database.

After initial installation is complete, you can access the Oracle Enterprise Management console and use its suggestions for setting up memory regions (Cache, PGA, and so on).

 For instructions to increase the size of the PI database after PI is installed, see the *HP Performance Insight Administration Guide*.

- Minimum PI Database Storage

For the minimum storage requirements for the database server, see the *Oracle installation guide*.

Creating an Oracle Database for PI

This section does not provide step-by-step instructions for installing Oracle. For the complete information, see the *Oracle Installation Guide* and follow the procedures for your operating system.

This section provides information that you should consider when installing Oracle and creating an Oracle database for use with PI.

If you are installing the Oracle database server on the same system that holds the PI database, you should allow the PI installation to create the tablespaces. If you are installing the Oracle database server on a separate system from the PI database (called a remote database installation), you **MUST** run the [Pre-Create Schema](#) scripts. These scripts create the table definitions and tablespaces on the database server before installing PI. These scripts also create the PI user for Oracle database and its permissions.

After the Oracle database is installed, configured, and running, you can proceed to install PI. For information about how to install PI, see [Chapter 6, Installing PI on a Standalone Server](#) or [Chapter 7, Installing PI in a Distributed Environment](#).

Install the Oracle Database Server

Follow the instructions for installing Oracle on your operating system in the *Oracle Installation Guide*. During the installation process, you are required to decide what to install and what settings to specify.

General Oracle Installation Guidelines

- Install Oracle 10.2.0.1.0. You must apply an upgrade patch for 10.2.0.4.0 later in the process.
- Choose the **Custom** installation instead of installing the Enterprise Edition. This results in fewer components being installed and reduces the overhead and time to edit components.
- The following components are necessary for PI, when installing Oracle 10g, shown as grouped during the installation. Additional components can be installed to provide additional Oracle controls, but they are not required for PI. Several frequently used optional components are indicated for installation but may be omitted if space is an issue.

Select:

- Oracle 10.2.0.1.0
- Enterprise Edition Options 10.2.0.1.0
 - ORACLE OLAP 10.2.0.1.0
- Oracle Net Services 10.2.0.1.0
 - Oracle Net Listener 10.2.0.1.0
- Oracle Enterprise Manager Products 10.2.0.1.0
 - Oracle Management Server 10.2.0.1.0 (optional)
 - Oracle Intelligent Agent 10.2.0.1.0
 - Enterprise Manager Client 10.2.0.1.0
 - Oracle Change Management Pack 10.2.0.1.0 (optional)
 - Oracle Diagnostics Pack 10.2.0.1.0 (optional)
 - Oracle Tuning Pack 10.2.0.1.0 (optional)



PI does not use any feature related to Oracle OLAP, but recommends using Oracle with OLAP option. This is because of an error in Oracle Database. If you are deselecting ORACLE OLAP 10.2.0.1.0, make sure to disable the triggers OLAPISTARTUPTRIGGER and OLAPISHUTDOWNTRIGGER.

Deselect:

- Oracle HTTP Server 10.2.0.1.0 if possible. It may not be deselectable if another application requires it.

Some components are mandatory for Oracle to install and appear automatically selected or may be grayed out. Do not deselect them.

After you select and deselect the appropriate components, you can proceed with the installation.



You can install PI with or without database partitioning, however database partitioning improves performance.

Task 1: Create the Oracle Database

When the Create Database window opens, click **Yes**.

Task 2: Configure the Oracle Database

If you choose to allow Oracle to create the database for you, the following responses during the database configuration process creates a simple, functional database. Contact your Oracle Database Administrator for guidance in creating a more robust database.

- Protocol: specify TCP
- Port number: specify 1521
- Net Service Name: MUST match Oracle SID for the PI database. If your site does not permit you to do this, see [Editing the tnsnames.ora File](#) on page 61 for additional instructions.

When the Database Configuration Assistant Welcome window opens, follow these steps:

- 1 Operations: select **Create a database** and click **Next**.
- 2 Database Templates: select **General Purpose** and click **Next**.
- 3 Database Identification: type the Global Database Name and SID and click **Next**.
 - ▶ If the Global Database Name is different from the SID, you need to modify the resulting tnsnames.ora file later for PI. This is important because report packs do not install correctly unless the Global Database Name and the SID match or the tnsnames.ora file is modified.
- 4 Database Connection Options: select **Dedicated Server Mode** and click **Next**.
- 5 Initialization Parameters: determine the amount of physical memory.
 - Click **Typical**. Change the default setting from 60% to 70%. In general, assign as much memory as possible to the Oracle database.
 - Click the **Character Sets** tab. Click **Use Unicode (AL32UTF8)** and click **Next**. The information about character set cannot be changed at later point.
 - ⚠ Ensure that the following Oracle Configuration parameter is set: NLS_LENGTH_SEMANTICS= BYTE.
This is critical for the successful operation of PI.

- 6 Database Storage: click **Next**. This enables you to distribute the physical files that comprise the PI database across file systems. See the Oracle documentation for recommendations.
- 7 Creation Options: click to check **Create Database** and click **Finish**.
- 8 Review the database summary and finish the installation.
 - a The Summary window opens, showing a summary of the database to be created. Click **OK**.
 - b The Database Configuration Assistant window opens when database creation is completed. Type the SYS and SYSTEM account passwords and click **Exit**.
 - c The End of Installation window opens. Click **Exit**.

Task 3: Apply the Oracle 10.2.0.4 Patch Set

You must upgrade the installed Oracle version to 10.2.0.4.0 before you install or run PI. When you download the patch, open the README file and follow its directions for your operating system.

- 1 Install the Oracle 10.2.0.4 patch.
- 2 Log into the sqlplus as sysdba.
- 3 Start the DB program in upgrade mode by typing `startup upgrade`.
- 4 Run the command `@?/rdbms/admin/catupgrd.sql` to migrate the database and `@?/rdbms/admin/utlrlp.sql` to compile the invalid objects.

Task 4: Edit the listener.ora File

You must edit the listener.ora file to install PI. To edit the tnsnames.ora file, follow these steps:

- 1 Find the tnsnames.ora file, which is located in the following directory in your operating system:

```
oracle_install_dir/network/admin
```

In this instance, *oracle_install_dir* is the directory into which you installed the Oracle client.

- 2 Open the file using a text editor.
- 3 Add an entry for the GLOBAL_DBNAME for the system on which Oracle is installed.

In the following example, the GLOBAL_DBNAME for the system on which Oracle is installed is test. In the example, the bold text indicates lines you need to add.

```
# listener.ora Network Configuration File: /opt/oracle10g/  
network/admin/listener.ora  
# Generated by Oracle configuration tools.
```

```
SID_LIST_LISTENER =  
  (SID_LIST =  
    (SID_DESC =  
      (SID_NAME = PLSExtProc)  
      (ORACLE_HOME = /opt/oracle10g)  
      (PROGRAM = extproc)  
    )  
  )
```

```
SID_LIST_LISTENER =  
  (SID_LIST =  
    (SID_DESC =  
      (GLOBAL_DBNAME= test)  
      (SID_NAME = test)  
      (ORACLE_HOME = /opt/oracle10g)  
    )  
  )
```

```
LISTENER =  
  (DESCRIPTION_LIST =  
    (DESCRIPTION =  
      (ADDRESS_LIST =  
        (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC))  
      )  
      (ADDRESS_LIST =  
        (ADDRESS = (PROTOCOL = TCP) (HOST =  
db1.ackcat.com) (PORT = 1521))  
      )  
    )  
  )
```

- 4 Save the listener.ora file.
- 5 Restart listener. To restart the listener, follow these steps:

From the command prompt, restart the listener program by typing:

```
>lsnrctl stop  
> lsnrctl start
```

Task 5: Create Tablespaces

If you are installing the Oracle database server on the same system that holds the PI database, you can either create the tablespaces automatically when you install PI, or you can create them manually using Oracle. If you create the tablespaces during PI installation, you are limited to a subset of file system setup parameters, but the process is simpler. If you create them manually, you can use all Oracle options and have full control about how and where they are created, but the procedure is more complicated and should only be undertaken in cooperation with an Oracle database administrator.

If you are installing the Oracle database server on a separate system from the PI database, (a remote database installation) you **MUST** run the **pre-create schema** scripts to create the tablespaces on the database server before installing PI. For more information on how to use pre create schema, see [Pre-Create Schema](#) on page 59.



If you want to create the tablespaces manually, contact Support, or make sure an Oracle database administrator creates the tablespaces for use with PI. If you create the tablespaces manually, you must ensure that the tablespace names match the names listed below exactly.

Guidelines for Tablespace Sizing

The guidelines in this section are important to consider if you want to increase the entire PI database by a certain size.



You can change the size of the tablespaces later during the PI installation. See [\(Optional\) Change specific Oracle Configuration Parameters](#) on page 136 for details.

The following table shows the Oracle tablespaces and the percentage of the database that they should occupy, based on an 800 MB minimum size for the main database.

Tablespace	Percent of Total Database
dpipe_default_seg	2%
dpipe_property_ind_seg	2%
dpipe_property_seg	2%
dpipe_upload_ind_seg	3%
dpipe_upload_seg	3%
dpipe_rate_ind_seg	10%
dpipe_rate_seg	10%
dpipe_summary_ind_seg	10%
dpipe_summary_seg	10%
dpipe_overflow_seg	30%
dpipe_archive_ind_seg	6%
dpipe_archive_seg	6%
dpipe_event_ind_seg	2%
dpipe_event_seg	4%
Total Size of the Database	100%

On HP-UX and Solaris, you must create data and property tablespaces with 32K block size and index tablespaces with 8K block size. On Linux you must create data and property tablespaces with 16K block size and index tablespaces with 8K block size. The dpipe_default_seg tablespace also should be of the same block size as the data tablespace.

The following table lists the configuration parameters and the recommended value for each. You can obtain the current list of values for the parameters by querying the V\$SYSTEM_PARAMETER table.

Parameter and Description	Recommended Value
<p>SGA_MAX_SIZE</p> <p>The maximum amount of memory that is utilized by the Oracle database. This memory is shared memory and is used by all Oracle server processes.</p> <p>shared memory = 40% of SGA size buffer cache = 40% of SGA size large pool = 12% of SGA size java pool = 8% of SGA size</p>	70% of the total system memory
<p>PGA_AGGREGATE_TARGET (M)</p> <p>The target aggregate PGA memory available to all server processes associated with the instance.</p>	200M
<p>DB_FILE_MULTIBLOCK_READ_COUNT</p> <p>The maximum number of blocks that should be read in one I/O operation when a sequential scan occurs (allowing you to minimize I/O during table scans).</p>	stripe size (KB) ^a / DB_BLOCK_SIZE (KB) ^b
<p>WORKAREA_SIZE_POLICY</p> <p>The policy for sizing work areas and for controlling the mode in which work areas are tuned.</p>	AUTO
<p>DB_32K_CACHE_SIZE (UNIX)</p> <p>The size of the cache for 32K buffers.</p>	95% of available buffer cache ^c

- a. See [step 6](#) on page 59
- b. See [step 7](#) on page 59.
- c. See [step 8](#) on page 59.

6 Determine stripe size.

RAID arrays use *striping* to improve performance. Striping is a technique that splits up files into smaller pieces and spreads them across multiple disk drives. This enables you data to be retrieved faster from the disks.

Stripe size is the size of the blocks used in striping. This value can range from 2 KB to 512 KB (or higher) in powers of 2. Consult a Database Administrator for the stripe size.

7 Determine the database block size.

To determine DB_BLOCK_SIZE, type the following SQL*Plus command:

```
SELECT value
FROM   V$PARAMETER
WHERE  name = 'db_block_size';
```

8 Determine cache size.

To determine what 95% of the available buffer cache is, type the following SQL*Plus command:

```
SELECT (dc.CURRENT_SIZE + fm.CURRENT_SIZE) * 0.95
FROM   V$SGA_DYNAMIC_FREE_MEMORY fm,
       V$SGA_DYNAMIC_COMPONENTS dc
WHERE  dc.COMPONENT = 'buffer cache';
```

After you complete installing and configuring Oracle, you can install PI.

Pre-Create Schema

The pre-create schema scripts create the table definitions and tablespaces on the database server before installing PI. These scripts also create the PI user for Oracle database and its permissions. Pre-create schema scripts are present in your PI DVD under the folder **Extract**→**Util**.

You can edit the following in the pre_create_schema and upgrade_schema scripts:

- Password for dsi_dpipe schema (this is applicable only for new installations)
- Datafile path
- Datafile name

- Datafile size

For example, `dpipe_upload_seg.dbf` can be changed to `/usr/oracle_files/dpipe_upload_seg.dbf`.

For optimal PI 5.4 performance, pre-create schema tablespace block size should be the following:

For Linux

Data segment = 16k

Index segment = 8k

For HP-UX and Solaris

Data segment = 32k

Index segment = 8k

To determine `DB_BLOCK_SIZE`, type the following SQL*Plus command:

```
SELECT value
FROM V$PARAMETER
WHERE name = 'db_block_size';
```

If the `DB_BLOCK_SIZE` is different from the optimum value (mentioned above), then do the following, before running the `pre_create_schema`:

For Linux

```
ALTER SYSTEM SET db_16K_cache_size = 8M
```

For HP-UX and Solaris

```
ALTER SYSTEM SET db_32K_cache_size = 8M
```



You can change the cache value according to your requirement.

Running the Pre-Create Schema Scripts

▶ Before logging into the Pre-create schema you can change your password and datafiles.

- 1 Check the `DB_BLOCK_SIZE`.
- 2 Log into sqlplus as sysdba user.
- 3 Run the command `pre_create_schema_sun_hpux.sql` (for HP-UX and Solaris) and `pre_create_schema_win_lin.sql` (for Linux).

Editing the tnsnames.ora File

If the global database name and SID for the PI database do not match, you must edit the `tnsnames.ora` file as follows:

- 1 Find the `tnsnames.ora` file, which is located in one of the following directories depending on your operating system:

`oracle_install_dir/network/admin`

In this instance, `oracle_install_dir` is the directory where you installed the Oracle client.

- 2 Open the file using a text editor (or use Oracle Net Manager and create a service name).
- 3 Add an entry for the `SERVICE_NAME` for the system on which Oracle is installed.

▶ If `SERVICE_NAME` does not work, use `SID` to define the system entry.

In the following example, the `SERVICE_NAME` for the system on which Oracle is installed is `PI51` and the `HOST` is `dbl.ackcat.com`:

```
# This is a sample TNS entry in the tnsnames.ora file.  
# Note that the key is the same as the SERVICE_NAME; this  
# is necessary for PI applications to find the correct  
# server entry.
```

```
PI51 =  
  (DESCRIPTION =  
    (ADDRESS_LIST =  
      (ADDRESS = (PROTOCOL = TCP) (HOST =  
db1.ackcat.com) (PORT = 1521))  
    )  
    (CONNECT_DATA =  
      (SERVICE_NAME = PI51)  
    )  
  )
```

- 4 Save the tnsnames.ora file.

Configuring a Remote Oracle Database

The PI Database and PI Performance Manager are often installed on the same database server. If that is the case with your installation, skip this section.

When the PI database is installed independently of PI Performance Manager, it is termed a “remote Oracle database.” This section provides instructions for configuring an Oracle database for remote use.




You must use Oracle 10.2.0.4.0. Earlier versions of the Oracle database must be upgraded for use with PI 5.41. Install the 10.2.0.4.0 patch set where noted in the following procedure.

To configure a remote Oracle database, perform the following tasks.

Task 1: Start the Installation Program and Install the Oracle 10g Client

See the Oracle documentation for the installation procedure.

Task 2: Configure the Oracle Client to Point to the Remote Oracle Database

- 1 In the Net Configuration Assistant Welcome window, select **No** and click **Next**. The Net Service Name Configuration, Database Version window opens.
- 2 Click **Oracle9i or later database or service** (the default) and click **Next**. The Net Service Name Configuration, Service Name window opens.
- 3 Type the database’s service name in the Service Name field and click **Next**. The Net Service Name Configuration, Select Protocols window opens.
 -  If the Net Service name does not match the SID name, follow the procedures described in [Editing the tnsnames.ora File](#) on page 61.
- 4 Click **TCP** (the default) and click **Next**. The Net Service Name Configuration, TCP/IP Protocol window opens.
- 5 Type the host name for the computer on which the database is located, click **Use the standard port number of 1521**(the default), and click **Next**. The Net Service Name Configuration, Test window opens.

Task 3: Test the Connection to the Oracle Database

- 1 In the Net Service Name Configuration, Test window, select **Yes, perform a test**, and click **Next**. The Connecting window indicates whether the test was successful. Normally the test fails the first time.
 - a If the test is not successful, click **Back** to review information that you provided. Type the `dsi_dpipes` user name and password specified for the PI database previously created on the remote Oracle server.
 - b If the test is successful, click **Next**. The Net Service Name Configuration, Net Service Name window opens.

Task 4: Finish the Installation

- 1 In the Net Service Name Configuration, Net Service Name window, type the net service name and click **Next**. The Another Net Service Name window opens.
- 2 Click **No** and click **Next**. The Net Service Name Configuration Done window opens.
- 3 Click **Next**. The Oracle Net Configuration Assistant Done window opens.
- 4 Click **Finish**. The End of Installation window opens.
- 5 Click **Exit**. Continue to [Task 5](#) if you need to upgrade your Oracle database to 10.2.0.4.0. Otherwise continue to [Task 6](#).

Task 5: Upgrade to Oracle 10.2.0.4.0 by Applying the Patch Set to your Oracle Database

Follow the procedures described in [Apply the Oracle 10.2.0.4 Patch Set](#) on page 54 to install the patch.

Task 6: Test the Connection from Oracle Client System to the Remote Oracle Database

Type the following SQL*Plus command:

```
sqlplus system/password@oracle_SID_value
```

In this instance, *system* is the Oracle user, *password* is the password for the Oracle user, and *oracle_SID_value* is your Oracle SID value for the PI database.

Task 7: Run the Pre-Create Schema scripts.

Task 8: On the PI system, Install the PI Database

When you run the PI installation wizard on the system where Oracle Client is installed, you must at a minimum select the **PI Database Schema** and **Performance Manager** check boxes from the Component Selection window. This installs the schema to the remote database and properly configures PI to use the remote database.

You can select the other check boxes depending on the type of installation you are performing. For example, if this is a standalone installation, you must select all four of the check boxes in the window.

Turning off the Recycle Bin

To turn off the recycle bin:

- 1 Log into sqlplus as sys user.
- 2 Run the command

```
alter system set recyclebin=off scope=both;
```
- 3 Restart the Oracle if you have already started Oracle.

Post Installation

For information on post installation steps refer, release note. Oracle documentation is on the Oracle Install CD. Oracle documents are also available online at www.oracle.com.

Starting and Stopping Oracle

Start Oracle

To start Oracle on UNIX systems, follow these steps:

- 1 Log in as Oracle user, and from the Oracle home/bin directory, type
sqlplus
- 2 Type the username
sys as sysdba
- 3 Type the appropriate password.
- 4 Type the command
startup

This starts up the database specified by \$Oracle_SID.

Stop Oracle

- 1 Log in as Oracle user, and from the Oracle home/bin directory, type
sqlplus
- 2 Type the user name
`sys as sysdba`
- 3 Type the appropriate password.
- 4 Type one of the following commands:
 - **shutdown**
This performs a soft shutdown, allowing all running tasks to end normally.
 - **shutdown immediate**
This shuts down the system after users and tasks finish their current operations.
 - **shutdown abort**

This performs a hard shutdown, terminating all tasks as soon as possible.

- 5 Type **exit** to exit from sqlplus.

Troubleshooting an Oracle Installation Problem

The error log file in the Oracle installation directory can help you determine the cause of an installation failure. Oracle writes messages to the log file each time the system is booted and each time an Oracle error occurs.

See the *Oracle Installation Guide* for information about Oracle log files and how to access and use them. After you identify the cause of a problem, consult the Oracle documentation for additional procedures.

For UNIX systems, this error log file is located in `$ORACLE_BASE/oraInventory/logs`.

5 Installing Oracle 11g R2 Enterprise Edition

The Oracle RDBMS must be installed and running before installing PI. Make sure that the instance for the Oracle listener program created for PI is running.

Oracle Installation Prerequisites

- 1 Read the Oracle documentation.

Before installing the Oracle database, read the Oracle database installation guides, release notes, and readme files. Oracle documentation is on the Oracle Install CD. Oracle documents are also available online at **www.oracle.com**.


- 2 Consult database administrator.

Database administrator can help you design and set up the Oracle database and can help you with the creation of tablespaces for optimal use by PI.

- 3 Follow general performance guidelines, when installing Oracle for use with PI.

- Install Oracle and PI on separate physical devices.
- Keep minimum three active copies of the database control file on minimum three different physical devices.
- Use at least three groups of redo logs. Separate redo logs to the greatest extent possible onto devices with limited activity occurring when the database is in use. Shadow redo logs whenever possible.
- Put the system tablespace on a separate device.
- Put the datafile on separate devices from the index datafiles.

- Put the archive log files on a separate device.

 The intent of these recommendations is to reduce disk contention. In general, the more disk heads moving at the same time, the faster your database can operate.

4 Before installing Oracle, verify database size, storage, and memory.

- PI Database Size

You must consider the number of devices polled, the amount of data objects collected, and the length of time the data is stored to determine the size of the PI database. The total size is distributed across the various tablespaces.

A sizing spreadsheet can help you to estimate system requirements that is available on the latest version of the Report Packs CD. To determine the overall database size required, enter values for each Report Pack you install, and the number of objects (devices, interfaces, VPNs, and so on) that are managed.


Determining the size requirements enables you to accurately estimate the hardware resources necessary to support your configuration.

- Minimum Memory Requirement for PI Database

The PI database size is determined by many factors. If you completed the spreadsheet provided on the Report Packs CD, use it to guide you in estimating your database sizes and configuration.

If you are installing PI on the same system as the Oracle database server, you can allow the PI installation to create a database smaller than the total expected size because PI installation creates tablespaces that have the “autoextend” option enabled, allowing Oracle to add space as needed to the PI database.

After initial installation is complete, you can access the Oracle Enterprise Management console and use its suggestions for setting up memory regions (Cache, PGA, and so on).

 For instructions to increase the size of the PI database after PI is installed, see the *HP Performance Insight Administration Guide*.

- Minimum PI Database Storage

For the minimum storage requirements for the database server, see the *Oracle installation guide*.

Creating an Oracle Database for PI

This section does not provide step-by-step instructions for installing Oracle. For the complete information, see the *Oracle Installation Guide* and follow the procedures for your operating system.

This section provides information that you should consider when installing Oracle and creating an Oracle database for use with PI.

If you are installing the Oracle database server on the same system that holds the PI database, you should allow the PI installation to create the tablespaces. If you are installing the Oracle database server on a separate system from the PI database (called a remote database installation), you **MUST** run the [Pre-Create Schema](#) scripts. These scripts create the table definitions and tablespaces on the database server before installing PI. These scripts also create the PI user for Oracle database and its permissions.

After the Oracle database is installed, configured, and running, you can proceed to install PI. For information about how to install PI, see [Chapter 6, Installing PI on a Standalone Server](#) or [Chapter 7, Installing PI in a Distributed Environment](#).

Install the Oracle Database Server

Follow the instructions for installing Oracle on your operating system in the *Oracle Installation Guide*. During the installation process, you are required to decide what to install and what settings to specify.

General Oracle Installation Guidelines

- Install Oracle 11g R2 Enterprise Edition.
- Select default component list in the “Enterprise Edition”. This list includes:
 - Oracle Partitioning
 - OLAP
 - Real Application Testing

— Data Mining.



You can install PI with or without database partitioning, however database partitioning improves performance. Oracle Partitioning is optional, but recommended.

You can also install other features (OLAP, Real Application Testing, and Data Mining), but not required.

Task 1: Create the Oracle Database

When the Create Database window opens, click **Yes**.

Task 2: Configure the Oracle Database

If you choose to allow Oracle to create the database for you, the following responses during the database configuration process creates a simple, functional database. Contact your Oracle Database Administrator for guidance in creating a more robust database.

- Protocol: specify TCP
- Port number: specify 1521
- Net Service Name: **MUST** match Oracle SID for the PI database. If your site does not permit you to do this, see [Editing the tnsnames.ora File](#) on page 80 for additional instructions.


When the Database Configuration Assistant Welcome window opens, follow these steps:

- 1 Operations: select **Create a database** and click **Next**.
- 2 Database Templates: select **General Purpose** and click **Next**.
- 3 Database Identification: type the Global Database Name and SID and click **Next**.



If the Global Database Name is different from the SID, you need to modify the resulting tnsnames.ora file later for PI. This is important because report packs do not install correctly unless the Global Database Name and the SID match or the tnsnames.ora file is modified.

- 4 Database Connection Options: select **Dedicated Server Mode** and click **Next**.

- 5 Initialization Parameters: determine the amount of physical memory.
 - Click **Typical**. Change the default setting from 60% to 70%. In general, assign as much memory as possible to the Oracle database.
 - Click the **Character Sets** tab. Click **Use Unicode (AL32UTF8)** and click **Next**. The information about character set cannot be changed at later point.
-  Ensure that the following Oracle Configuration parameter is set: `NLS_LENGTH_SEMANTICS= BYTE`.
This is critical for the successful operation of PI.
- 6 Database Storage: click **Next**. This enables you to distribute the physical files that comprise the PI database across file systems. See the Oracle documentation for recommendations.
- 7 Creation Options: click to check **Create Database** and click **Finish**.
- 8 Review the database summary and finish the installation.
 - a The Summary window opens, showing a summary of the database to be created. Click **OK**.
 - b The Database Configuration Assistant window opens when database creation is completed. Type the SYS and SYSTEM account passwords and click **Exit**.
 - c The End of Installation window opens. Click **Exit**.

Task 3: Edit the listener.ora File

You must edit the listener.ora file to install PI. To edit the tnsnames.ora file, follow these steps:

- 1 Find the tnsnames.ora file, which is located in the following directory in your operating system:

```
oracle_install_dir/network/admin
```

In this instance, *oracle_install_dir* is the directory into which you installed the Oracle client.
- 2 Open the file using a text editor.
- 3 Add an entry for the GLOBAL_DBNAME for the system on which Oracle is installed.

In the following example, the GLOBAL_DBNAME for the system on which Oracle is installed is test. In the example, the bold text indicates lines you need to add.

```
# listener.ora Network Configuration File: /opt/oracle11g/  
network/admin/listener.ora  
# Generated by Oracle configuration tools.
```

```
SID_LIST_LISTENER =  
  (SID_LIST =  
    (SID_DESC =  
      (SID_NAME = PLSExtProc)  
      (ORACLE_HOME = /opt/oracle11g)  
      (PROGRAM = extproc)  
    )  
  )
```

```
SID_LIST_LISTENER =  
  (SID_LIST =  
    (SID_DESC =  
      (GLOBAL_DBNAME= test)  
      (SID_NAME = test)  
      (ORACLE_HOME = /opt/oracle11g)  
    )  
  )
```

```
LISTENER =  
  (DESCRIPTION_LIST =  
    (DESCRIPTION =  
      (ADDRESS_LIST =  
        (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC))  
      )  
      (ADDRESS_LIST =  
        (ADDRESS = (PROTOCOL = TCP) (HOST =  
db1.ackcat.com) (PORT = 1521))  
      )  
    )  
  )
```

- 4 Save the listener.ora file.
- 5 Restart listener. To restart the listener, follow these steps:

From the command prompt, restart the listener program by typing:

```
>lsnrctl stop  
> lsnrctl start
```

Task 4: Create Tablespaces

If you are installing the Oracle database server on the same system that holds the PI database, you can either create the tablespaces automatically when you install PI, or you can create them manually using Oracle. If you create the tablespaces during PI installation, you are limited to a subset of file system setup parameters, but the process is simpler. If you create them manually, you can use all Oracle options and have full control about how and where they are created, but the procedure is more complicated and should only be undertaken in cooperation with an Oracle database administrator.

If you are installing the Oracle database server on a separate system from the PI database, (a remote database installation) you **MUST** run the **pre-create schema** scripts to create the tablespaces on the database server before installing PI. For more information on how to use pre create schema, see [Pre-Create Schema](#) on page 79.



If you want to create the tablespaces manually, contact Support, or make sure an Oracle database administrator creates the tablespaces for use with PI. If you create the tablespaces manually, you must ensure that the tablespace names match the names listed below exactly.

Guidelines for Tablespace Sizing

The guidelines in this section are important to consider if you want to increase the entire PI database by a certain size.



You can change the size of the tablespaces later during the PI installation. See [\(Optional\) Change specific Oracle Configuration Parameters](#) on page 136 for details.

The following table shows the Oracle tablespaces and the percentage of the database that they should occupy, based on an 800 MB minimum size for the main database.

Tablespace	Percent of Total Database
dpipe_default_seg	2%
dpipe_property_ind_seg	2%
dpipe_property_seg	2%
dpipe_upload_ind_seg	3%
dpipe_upload_seg	3%
dpipe_rate_ind_seg	10%
dpipe_rate_seg	10%
dpipe_summary_ind_seg	10%
dpipe_summary_seg	10%
dpipe_overflow_seg	30%
dpipe_archive_ind_seg	6%
dpipe_archive_seg	6%
dpipe_event_ind_seg	2%
dpipe_event_seg	4%
Total Size of the Database	100%

On HP-UX and Solaris, you must create data and property tablespaces with 32K block size and index tablespaces with 8K block size. On Linux you must create data and property tablespaces with 16K block size and index tablespaces with 8K block size. The dpipe_default_seg tablespace also should be of the same block size as the data tablespace.

The following table lists the configuration parameters and the recommended value for each. You can obtain the current list of values for the parameters by querying the V\$SYSTEM_PARAMETER table.

Parameter and Description	Recommended Value
<p>MEMORY_TARGET MEMORY_TARGET specifies the Oracle system-wide usable memory. The database tunes memory to the MEMORY_TARGET value, reducing or enlarging the SGA and PGA as needed.</p>	70% of the available physical memory on the system.
<p>SGA_MAX_SIZE The maximum amount of memory that is utilized by the Oracle database. This memory is shared memory and is used by all Oracle server processes. shared memory = 40% of SGA size buffer cache = 40% of SGA size large pool = 12% of SGA size java pool = 8% of SGA size</p>	60% of the MEMORY_TARGET value.
<p>SHARED_POOL_SIZE This value represents the minimum memory size for the shared pool.</p>	400M
<p>PGA_AGGREGATE_TARGET (M) The target aggregate PGA memory available to all server processes associated with the instance.</p>	200M

Parameter and Description	Recommended Value
DB_FILE_MULTIBLOCK_READ_COUNT The maximum number of blocks that should be read in one I/O operation when a sequential scan occurs (allowing you to minimize I/O during table scans).	stripe size (KB) ^a / DB_BLOCK_SIZE (KB) ^b
WORKAREA_SIZE_POLICY The policy for sizing work areas and for controlling the mode in which work areas are tuned.	AUTO
DB_32K_CACHE_SIZE (UNIX) The size of the cache for 32K buffers.	95% of available buffer cache ^c

- a. See [step 6](#) on page 78
- b. See [step 7](#) on page 78.
- c. See [step 8](#) on page 78.

6 Determine stripe size.

RAID arrays use *striping* to improve performance. Striping is a technique that splits up files into smaller pieces and spreads them across multiple disk drives. This enables you data to be retrieved faster from the disks.

Stripe size is the size of the blocks used in striping. This value can range from 2 KB to 512 KB (or higher) in powers of 2. Consult a Database Administrator for the stripe size.

7 Determine the database block size.

To determine DB_BLOCK_SIZE, type the following SQL*Plus command:

```
SELECT value
FROM V$PARAMETER
WHERE name = 'db_block_size';
```

8 Determine cache size.

To determine what 95% of the available buffer cache is, type the following SQL*Plus command:

```

SELECT (dc.CURRENT_SIZE + fm.CURRENT_SIZE) * 0.95 as "95
% of POOL SIZE"
FROM V$SGA_DYNAMIC_FREE_MEMORY fm,
V$SGA_DYNAMIC_COMPONENTS dc
WHERE dc.COMPONENT like 'DEFAULT buffer cache';

```

After you complete installing and configuring Oracle, you can install PI.

Pre-Create Schema

The pre-create schema scripts create the table definitions and tablespaces on the database server before installing PI. These scripts also create the PI user for Oracle database and its permissions. Pre-create schema scripts are present in your PI DVD under the folder **Extract**→**Util**.

You can edit the following in the pre_create_schema:

- Password for dsi_dpipe schema (this is applicable only for new installations)
- Datafile path
- Datafile name
- Datafile size

For example, dpipe_upload_seg.dbf can be changed to /usr/oracle_files/dpipe_upload_seg.dbf.

For optimal PI 5.4 performance, pre-create schema tablespace block size should be the following:

For Linux

Data segment = 16k

Index segment = 8k

For HP-UX and Solaris

Data segment = 32k

Index segment = 8k

To determine DB_BLOCK_SIZE, type the following SQL*Plus command:

```
SELECT value
```

```
FROM V$PARAMETER
WHERE name = 'db_block_size';
```

If the `DB_BLOCK_SIZE` is different from the optimum value (mentioned above), then do the following, before running the `pre_create_schema`:

For Linux

```
ALTER SYSTEM SET db_16K_cache_size = 8M
```

For HP-UX and Solaris

```
ALTER SYSTEM SET db_32K_cache_size = 8M
```

► You can change the cache value according to your requirement.

Running the Pre-Create Schema Scripts

► Before logging into the Pre-create schema you can change your password and datafiles.

- 1 Check the `DB_BLOCK_SIZE`.
- 2 Log into `sqlplus` as `sysdba` user.
- 3 Run the command `pre_create_schema_sun_hpux.sql` (for HP-UX and Solaris) and `pre_create_schema_win_lin.sql` (for Linux).

Editing the `tnsnames.ora` File

If the global database name and SID for the PI database do not match, you must edit the `tnsnames.ora` file as follows:

- 1 Find the `tnsnames.ora` file, which is located in one of the following directories depending on your operating system:

oracle_install_dir/network/admin

In this instance, *oracle_install_dir* is the directory where you installed the Oracle client.

- 2 Open the file using a text editor (or use Oracle Net Manager and create a service name).
- 3 Add an entry for the `SERVICE_NAME` for the system on which Oracle is installed.



If `SERVICE_NAME` does not work, use `SID` to define the system entry.

In the following example, the `SERVICE_NAME` for the system on which Oracle is installed is `PI51` and the `HOST` is `dbl.ackcat.com`:

```
# This is a sample TNS entry in the tnsnames.ora file.
# Note that the key is the same as the SERVICE_NAME; this
# is necessary for PI applications to find the correct
# server entry.
PI51 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST =
db1.ackcat.com) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = PI51)
    )
  )
```

- 4 Save the `tnsnames.ora` file.

Configuring a Remote Oracle Database

The PI Database and PI Performance Manager are often installed on the same database server. If that is the case with your installation, skip this section.

When the PI database is installed independently of PI Performance Manager, it is termed a “remote Oracle database.” This section provides instructions for configuring an Oracle database for remote use.

To configure a remote Oracle database, perform the following tasks.

Task 1: Start the Installation Program and Install the Oracle 11g Client

See the Oracle documentation for the installation procedure.

Task 2: Configure the Oracle Client to Point to the Remote Oracle Database

- 1 In the Net Configuration Assistant Welcome window, select **Local Net Service Name configuration** and click **Next**. The Net Service Name Configuration window opens.
- 2 Select **Add** and click **Next**. The Net Service Name Configuration, Service Name window opens.
- 3 Type the database’s service name in the Service Name field and click **Next**. The Net Service Name Configuration, Select Protocols window opens.
 - ▶ If the Net Service name does not match the SID name, follow the procedures described in [Editing the tnsnames.ora File](#) on page 80.
- 4 Click **TCP** (the default) and click **Next**. The Net Service Name Configuration, TCP/IP Protocol window opens.
- 5 Type the host name for the computer on which the database is located, click **Use the standard port number of 1521**(the default), and click **Next**. The Net Service Name Configuration, Test window opens.

Task 3: Test the Connection to the Oracle Database

- 1 In the Net Service Name Configuration, Test window, select **Yes, perform a test**, and click **Next**. The Connecting window indicates whether the test was successful. Normally the test fails the first time.

- a If the test is not successful, click **Back** to review information that you provided. Type the `dsi_dpiped` user name and password specified for the PI database previously created on the remote Oracle server.
- b If the test is successful, click **Next**. The Net Service Name Configuration, Net Service Name window opens.

Task 4: Finish the Installation

- 1 In the Net Service Name Configuration, Net Service Name window, type the net service name and click **Next**. The Another Net Service Name window opens.
- 2 Click **No** and click **Next**. The Net Service Name Configuration Done window opens.
- 3 Click **Next**. The Oracle Net Configuration Assistant Done window opens.
- 4 Click **Finish**. The End of Installation window opens.
- 5 Click **Exit**.

Task 5: Test the Connection from Oracle Client System to the Remote Oracle Database

Type the following SQL*Plus command:

```
sqlplus system/password@oracle_SID_value
```

In this instance, *system* is the Oracle user, *password* is the password for the Oracle user, and *oracle_SID_value* is your Oracle SID value for the PI database.

Task 6: Run the Pre-Create Schema scripts.

Task 7: On the PI system, Install the PI Database

When you run the PI installation wizard on the system where Oracle Client is installed, you must at a minimum select the **PI Database Schema** and **Performance Manager** check boxes from the Component Selection window. This installs the schema to the remote database and properly configures PI to use the remote database.

You can select the other check boxes depending on the type of installation you are performing. For example, if this is a standalone installation, you must select all four of the check boxes in the window.

Turning off the Recycle Bin

You must turn off the recycle bin.

To turn off the recycle bin:

- 1 Log into sqlplus as sys user.
- 2 Run the command

```
alter system set recyclebin=off scope=both;
```
- 3 Restart the Oracle if you have already started Oracle.

Post Installation

For Oracle 11.2.0.1

For oracle 11.2.0.1, after all the report packs are installed and the collections are started, run the following commands on the sql prompt as sys user:

- 1

```
exec DBMS_STATS.GATHER_FIXED_OBJECTS_STATS(NO_INVALIDATE=> FALSE);
```
- 2

```
exec dbms_stats.gather_table_stats('SYS', 'X$KGLLK', cascade=>true);
```

For Oracle 11.2.0.2

Perform the following post installation steps for Oracle 11.2.0.2:

- 1 Apply the Oracle Patch **10411618**. This patch can be downloaded from the Oracle support Web site.
- 2 Log on to sqlplus as sys user and run the following commands:
 - a

```
alter system set "_partition_large_extents" = false  
comment = 'OVPI recommended setting for 11.2.0.2'  
scope = both;
```
 - b

```
alter system set deferred_segment_creation = false  
comment = 'OVPI recommended setting for 11.2.0.2'  
scope = both;
```

- c `alter system set "_mutex_wait_scheme"=1 comment = 'OVPI recommended setting for 11.2.0.2' scope = both;`
- d `alter system set "_mutex_wait_time"=8 comment = 'OVPI recommended setting for 11.2.0.2' scope = both;`
- e `alter system set "_optimizer_cartesian_enabled"=false comment = 'OVPI recommended setting for 11.2.0.2' scope = both;`

▶ These commands can also be executed post OVPI installation by running the following script:

```
$DPIPE_HOME/contrib/sql_scripts/
Oracle_11G_Config.sql
```

These commands must be executed before the report pack installation.

- 3 To verify the above settings, run the following command in the sql prompt:

```
select a.kspinm "Parameter", b.kspstvl "Session Value",
c.kspstvl "Instance Value", a.KSPDESC "Description"
from x$kspci a, x$ksppcv b, x$ksppsv c
where a.indx = b.indx and a.indx = c.indx
and a.kspinm in (
'deferred_segment_creation', '_partition_large_extents', '_
optimizer_cartesian_enabled', '_mutex_wait_scheme', '_mutex
_wait_time');
```

▶ The above command is a one line command. Copy and paste the command in a notepad and remove the extra lines before pasting it in the command prompt window.

- 4 After all the report packs are installed and the collections are started, run the following commands on the sql prompt as sys user:

- a `exec DBMS_STATS.GATHER_FIXED_OBJECTS_STATS(NO_INVALIDATE => FALSE);`
- b `exec dbms_stats.gather_table_stats('SYS', 'X$KGLLK', cascade=>true);`

For additional information on post installation steps for Oracle 11G R2, refer Oracle release notes. Oracle documentation is on the Oracle Install CD. Oracle documents are also available online at **www.oracle.com**.

Starting and Stopping Oracle

Start Oracle

To start Oracle on UNIX systems, follow these steps:

- 1 Log in as Oracle user, and from the Oracle home/bin directory, type
sqlplus
- 2 Type the username
sys as sysdba
- 3 Type the appropriate password.
- 4 Type the command
startup

This starts up the database specified by \$Oracle_SID.

Stop Oracle

- 1 Log in as Oracle user, and from the Oracle home/bin directory, type
sqlplus
- 2 Type the user name
`sys as sysdba`
- 3 Type the appropriate password.
- 4 Type one of the following commands:
 - **shutdown**
This performs a soft shutdown, allowing all running tasks to end normally.
 - **shutdown immediate**
This shuts down the system after users and tasks finish their current operations.
 - **shutdown abort**

This performs a hard shutdown, terminating all tasks as soon as possible.

- 5 Type **exit** to exit from sqlplus.

Troubleshooting an Oracle Installation Problem

The error log file in the Oracle installation directory can help you determine the cause of an installation failure. Oracle writes messages to the log file each time the system is booted and each time an Oracle error occurs.

See the *Oracle Installation Guide* for information about Oracle log files and how to access and use them. After you identify the cause of a problem, consult the Oracle documentation for additional procedures.

For UNIX systems, this error log file is located in `$ORACLE_BASE/oraInventory/logs`.

6 Installing PI on a Standalone Server

The PI installation program contains options for installing the PI components and remote pollers.

Perform the following steps, before installing PI:

- 1 Log on to the local system as root.
- 2 Insert the PI Installation DVD in the DVD-ROM drive.

Mount the DVD using the instructions provided in the following table:

Operating System	Command
Solaris	<p>The DVD should mount automatically when you insert it in the DVD-ROM drive, opening the File Manager window. If not, as root, type the following:</p> <pre>mkdir /dvdrom mount -r /dev/dsk/dvd_devicename /dvdrom</pre> <p>In this instance, <i>dvd_devicename</i> is the name of the DVD-ROM device.</p> <ul style="list-style-type: none">a Display the dvd_label by typing the command: <pre>ls -l /dvdrom</pre>b Change directory by typing the command: <pre>cd /dvdrom/dvd_label</pre> <p>In this instance, <i>dvd_label</i> identifies the DVD name.</p>
HP-UX	<p>Use the SAM utility to mount the DVD-ROM, or type the following commands:</p> <pre>mkdir /dvdrom mount /dev/dsk/dvd_devicename /dvdrom</pre> <p>In this instance, <i>dvd_devicename</i> is the name of the DVD-ROM device.</p>
Red Hat Linux	<p>The DVD should mount automatically when you insert it in the DVD-ROM drive, opening the File Manager window. If not, as root, type the following:</p> <pre>mount -r /dev/dvdrom <mount_directory></pre> <p>In this instance, <i>mount_directory</i> is the directory where contents of the DVD-ROM are stored.</p>

3 Start the installation program:

Locate the setup program and start it by typing the command:

```
./setup
```

The Setup Utilities window opens.

When you install PI in a standalone environment, you install *all* PI components on one system.

If you plan to install using a remote Oracle database, follow the instructions in [Chapter 7, Installing PI in a Distributed Environment](#).



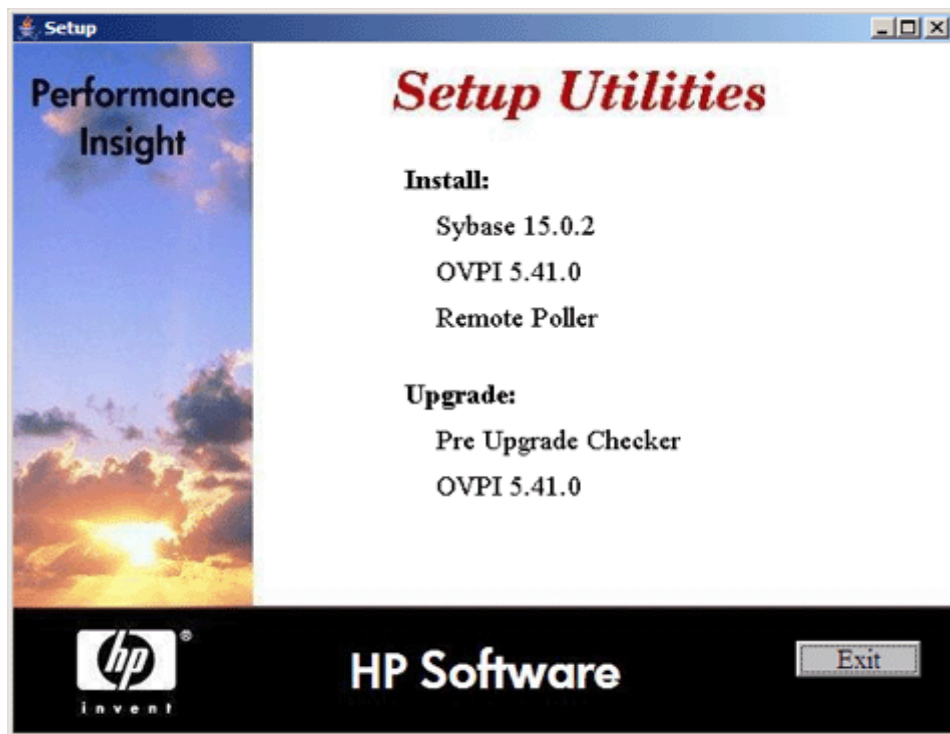
Before you start installing PI, you must stop the db console process in Oracle. Run the following:

```
$ORACLE_HOME/bin/emctl stop dbconsole
```

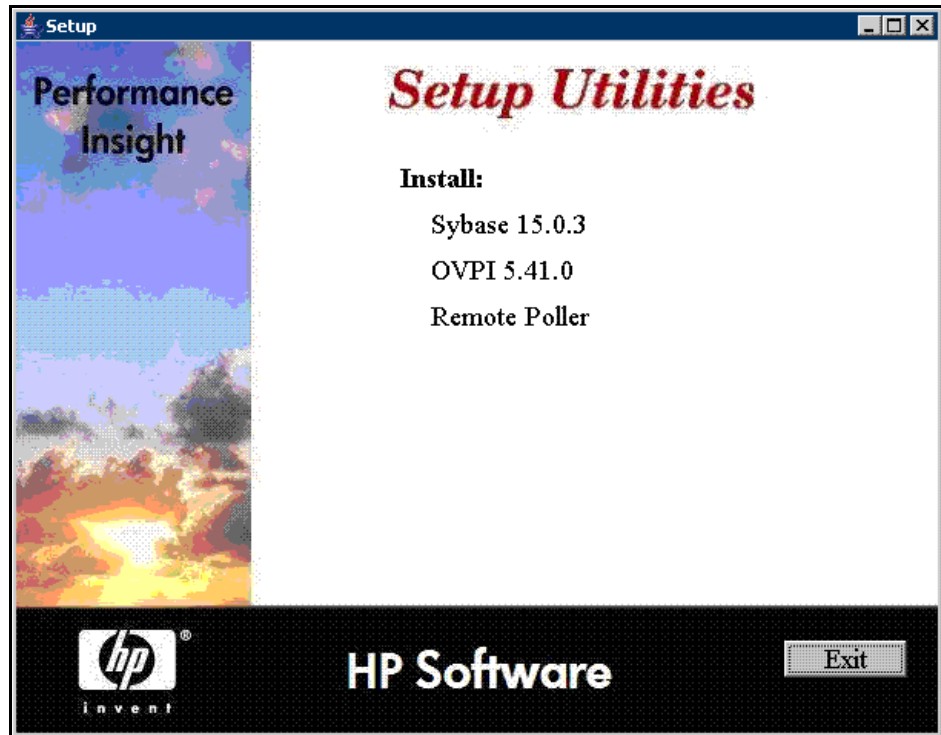
You must do this because the PI installer restarts the Oracle database during installation. If the dbconsole process is running, the PI install fails.

Task 1: Start the PI Installation Program

- 1 Start the PI installation program. The Setup Utilities window opens. For 32-bit Linux and other UNIX platforms, the following window opens:

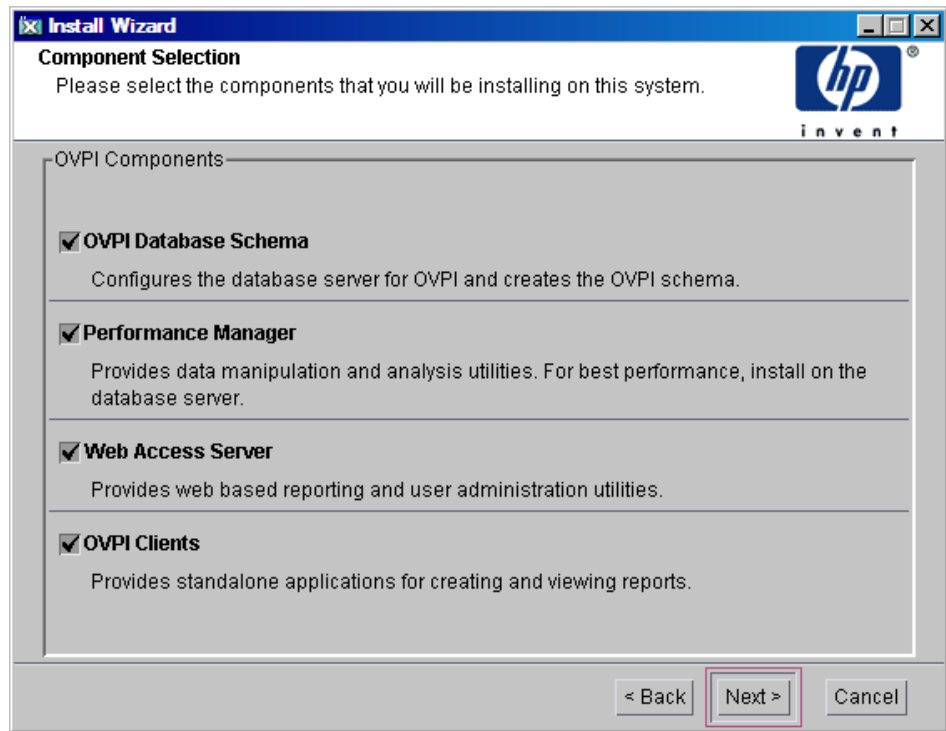


For 64-bit Linux platforms, the following window opens:



- 2 Select **OVPI 5.41.0** from the Install section of the window. The Welcome window opens.
- 3 Read the Welcome window and click **Next** to continue. The License Agreement window opens.

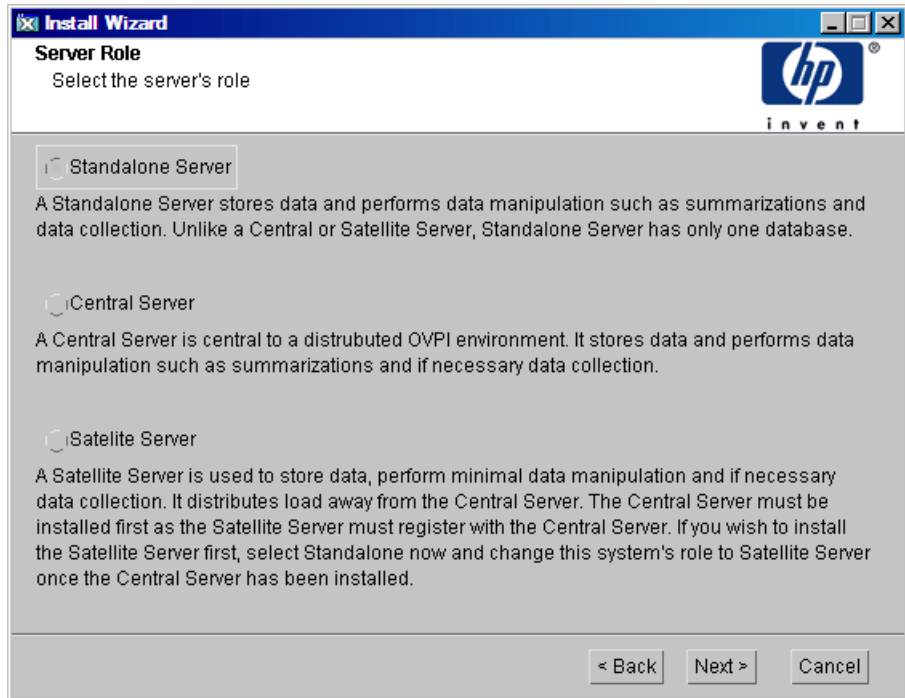
- 4 Accept the license agreement and click **Next** to continue. You must accept the license agreement to proceed. If you click **Cancel**, you are prompted to confirm your rejection of the license agreement and installation ends. The Component Selection window opens.



Task 2: Select *all* the PI Components to Install

- 1 In the Component Selection window, select *all* PI components to install. All the components are required for a standalone installation.

- 2 Click **Next** to continue. The Server Role window opens.

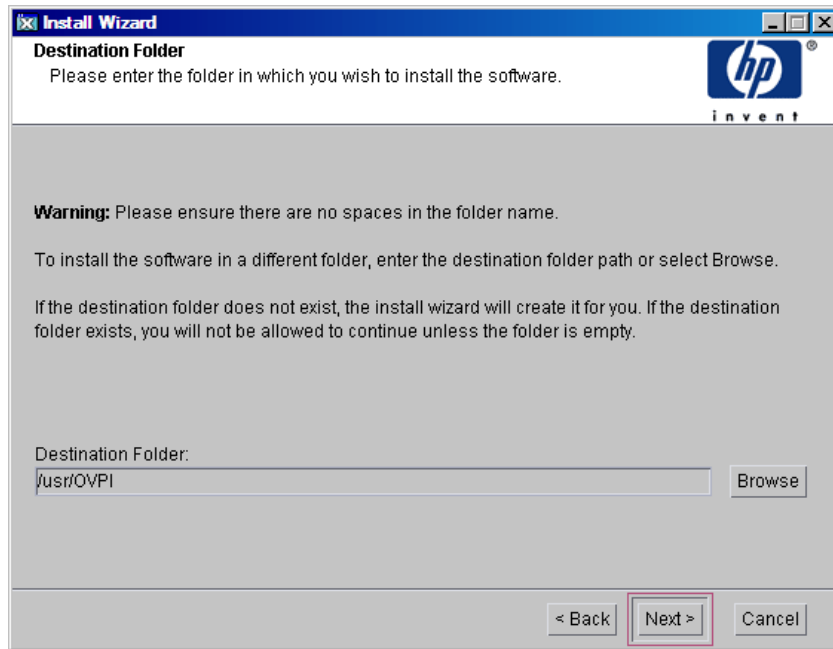


Task 3: Select a Role for the Database System

- 1 Select Standalone Server.

If you want to change the role at a later time, use the System and Network Administration application in the PI Management Console. For more information, see the *HP Performance Insight Administration Guide*.

- 2 Click **Next** to continue. The Destination Folder window opens.

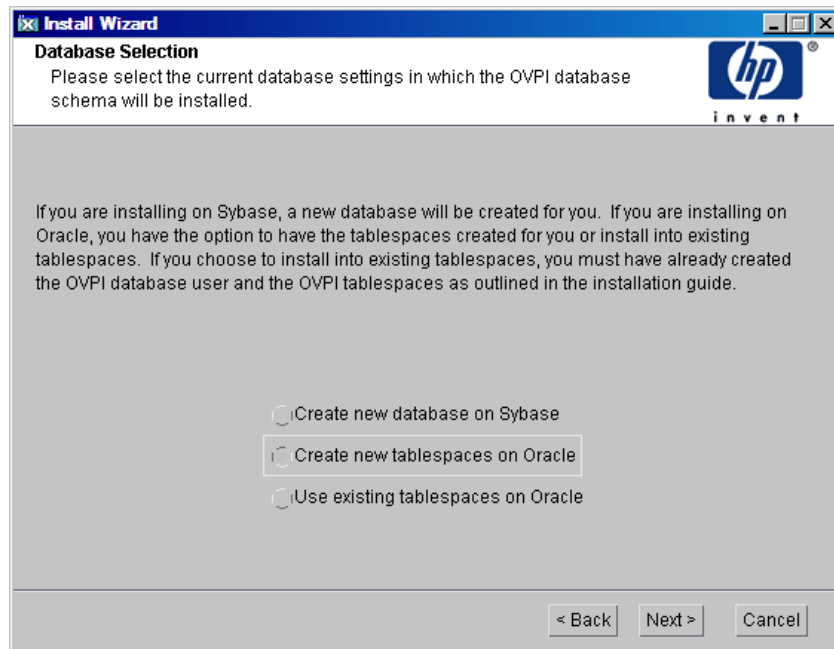


Task 4: Specify a Destination Directory for the PI Software

Specify the directory to which the PI software is installed. The destination directory can be an NFS mounted directory, a UNIX soft link, or a UNIX hard link.

- 1 Accept the default destination directory, or identify a different directory. The path cannot contain any spaces.
 - If the destination directory does not already exist, the Installation Program creates it.
 - If the destination directory does exist and contains data, a message warns you that the directory is not empty.
 - If the destination directory is located on a file system that the Installation Program cannot access, a message warns you. You cannot continue the installation until you supply a valid destination.

- 2 Click **Next** to continue. The Database Selection window opens.



Task 5: Select the RDBMS on which the PI Database Instance is Created

In the Database Selection window, identify the database onto which the PI Database instance is created and indicate whether to create new tablespaces or install into existing tablespaces.

- 1 Select one of the following options:

- **Create new tablespaces on Oracle**

Select this option if you did not create the database user account (dsi_dpip) and tablespaces, as described in [Guidelines for Tablespace Sizing](#) on page 56.

- **Use existing tablespaces on Oracle**

Select this option if either of the following is true:

- The system on which you are installing PI uses an Oracle Client to access a remote Oracle database.

Run the pre-create schema as described in [Pre-Create Schema](#) on page 59.

If you are unsure of which option to use, select **Create new tablespaces on Oracle**.

- 2 Click **Next** to continue. The Oracle Parameter Modify Selection window opens.

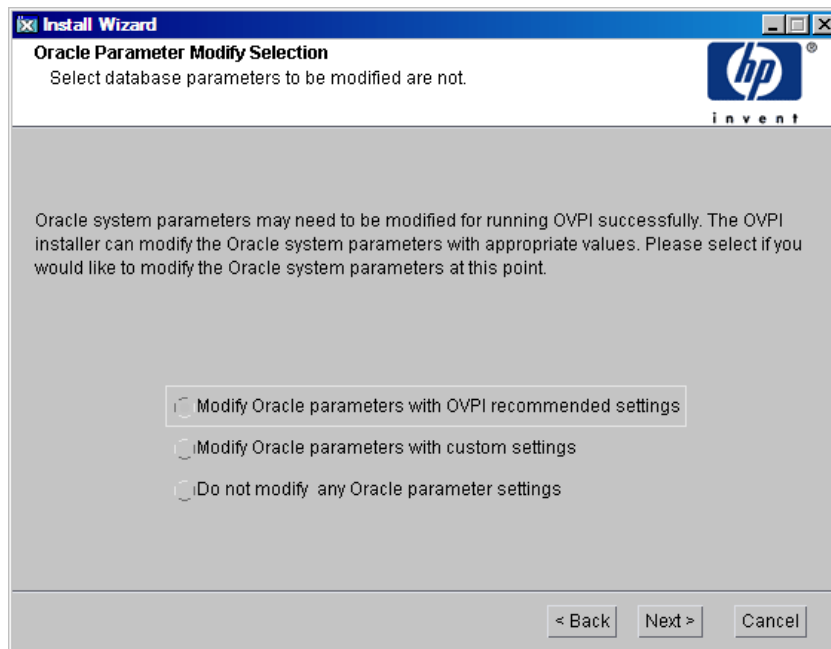
Task 6: (Optional) Change Specific Oracle configuration parameters

The Oracle Parameter Modify Selection window gives you three choices for changing your Oracle configuration.



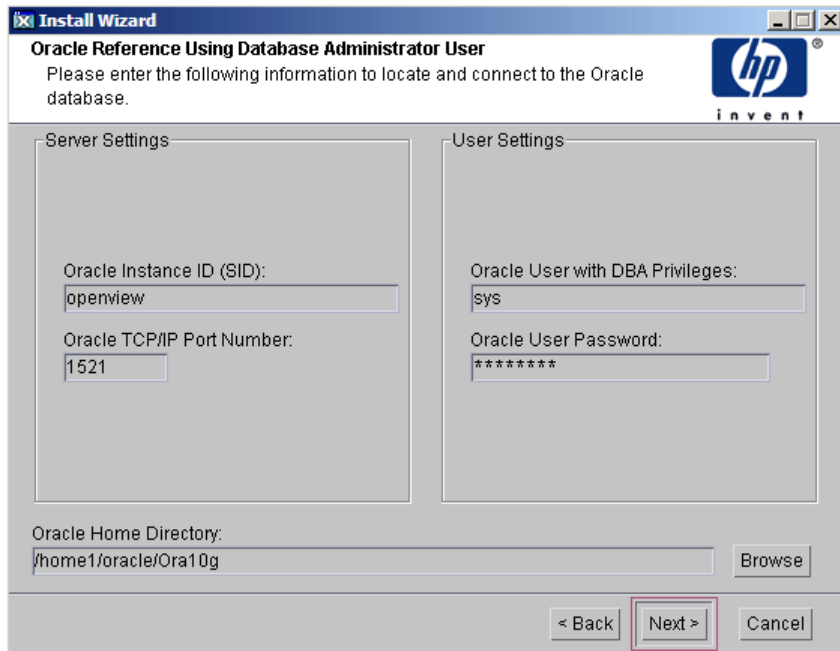
For Oracle 11g R2 installation on UNIX platforms other than Linux 64-bit, select the option **Do not modify any Oracle parameters settings**.

These options with their procedures are explained below:



Option 1:

Select Modify Oracle parameters with OVPI recommended settings and click **Next**. The Oracle Reference using Database Administrator User window opens.

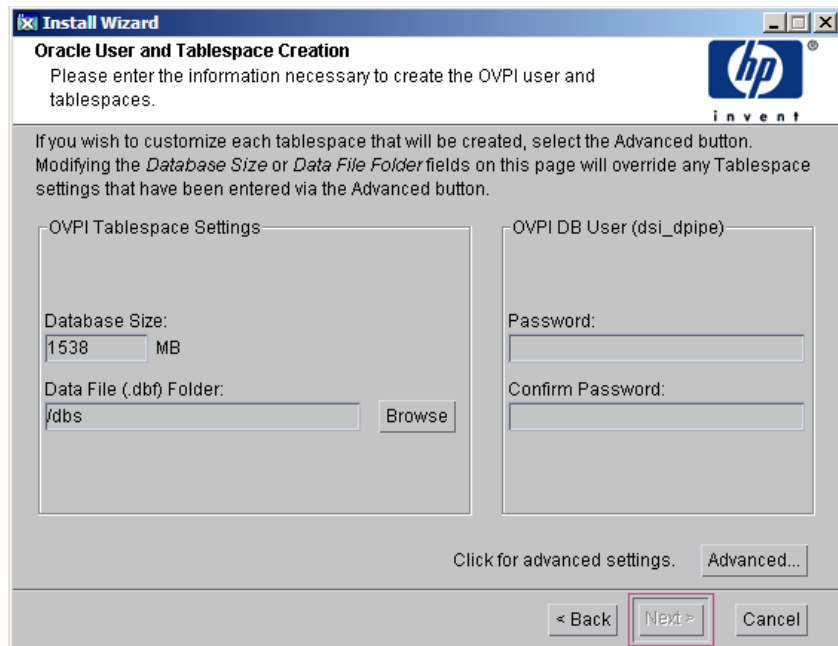


In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database.

Locate and connect to the Oracle database

- 1 Accept the default values or type new values for the following parameters:
 - **Oracle Instance ID (SID):** Type the name of the Oracle database instance.
A default is provided only if the Oracle environment variable ORACLE_SID is set. Verify that the SID shown is correct because you may have more than one database instance running.
 - **Oracle TCP/IP Port Number:** Type the TCP/IP port for Oracle. The default is 1521.

- **Oracle User with DBA Privileges:** The default is sys. Do not change it.
 - **Oracle User Password:** Type the password for the sys account that you created when you installed the Oracle RDBMS.
 - **Oracle Home Directory:** Identify the directory onto which you installed Oracle. If the installation program can determine the location of the Oracle Home directory, it is shown as the default.
- 2 Click **Next** to continue. The Oracle User and Tablespace Creation window opens.



Oracle User Account and Tablespace Creation



Tablespaces are created with autoextend turned on, which enables you Oracle to automatically extend a datafile to meet the needs of the data if sufficient free space does not currently exist in the tablespace. Monitor the system to make sure that the physical file system does not exceed 100%.

Before you change the values for the Database Size and Data File Folder parameters, decide whether you want to modify the data files for database segments using the Advanced button. Total Size and Data File Folder settings override any settings made using the Advanced PI Configuration window.

1 Accept the default values or type new values for the following parameters:

- **Database Size:** Type the database size. The default size is 1024 MB. The minimum size is 500 MB. The tablespaces are created with the space appropriately distributed.
- **Data File (.dbf) Folder:** Type the directory in which the database files (.dbf) are created.
- **Password:** Type a password for the PI database user account (dsi_dpibe).

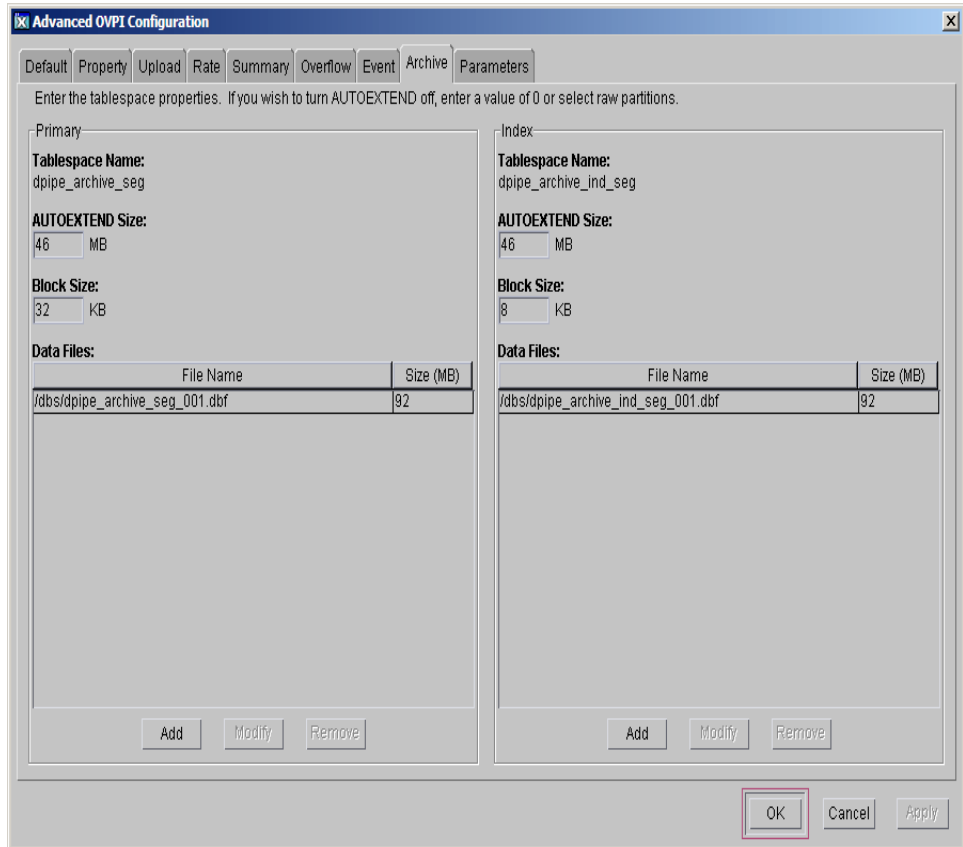
The password must start with an alphabetic character and must be between one and 30 characters in length. Valid characters are all alphanumeric characters and the underscore (_). The password is not case sensitive.

- **Confirm Password:** Retype the password.

2 Click **Next** to continue or click **Advanced...** to display the Advanced PI Configuration window. Use the window to add, modify, or remove the data files that comprise the tablespaces. The following window appears:



After you modify the database segments using the Advanced PI Configuration window, do **not** change the values for the Database Size and Data File Folder options in the Oracle User and Tablespace Creation window. If you change the values for these options, you cannot reset them; thus, they override the changes you made using the Advanced Configuration dialog box. There is no way to reset these options, unless you cancel the installation program and start the installation again.



For tablespace sizing guidelines, see [Chapter 4, Installing Oracle 10g Enterprise Edition](#) or [Chapter 5, Installing Oracle 11g R2 Enterprise Edition](#).

- a Select the tab associated with the tablespace you want to change. The tablespace tabs are:
 - Default: the dpipe_default_seg tablespace
 - Property: the dpipe_property_seg and dpipe_property_ind_seg tablespaces
 - Upload: the dpipe_upload_seg and dpipe_upload_ind_seg tablespaces
 - Rate: the dpipe_rate_seg and dpipe_rate_ind_seg tablespaces

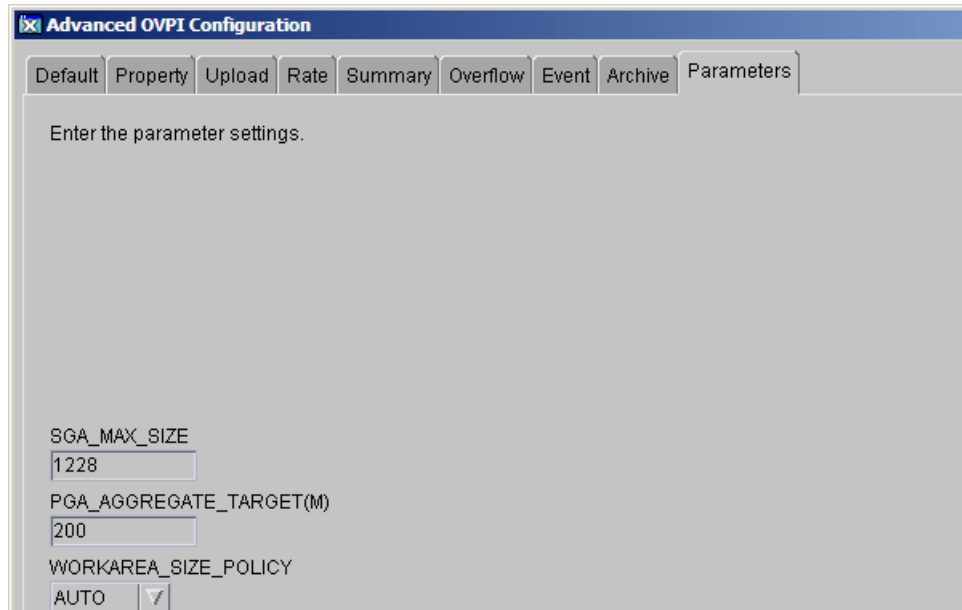
- Summary: the `dpipe_summary_seg` and `dpipe_summary_ind_seg` tablespaces
 - Overflow: the `dpipe_overflow_seg` tablespace
 - Archive: the `dpipe_archive_seg` tablespace
 - Event: the `dpipe_event_seg` tablespace
- b** Accept the default values or type values for the tablespace parameters. In each case, the parameters are:

AUTOEXTEND SIZE: Type the size of the extend in MB. Specifying 0 for the extend size disables the Oracle autoextend feature.

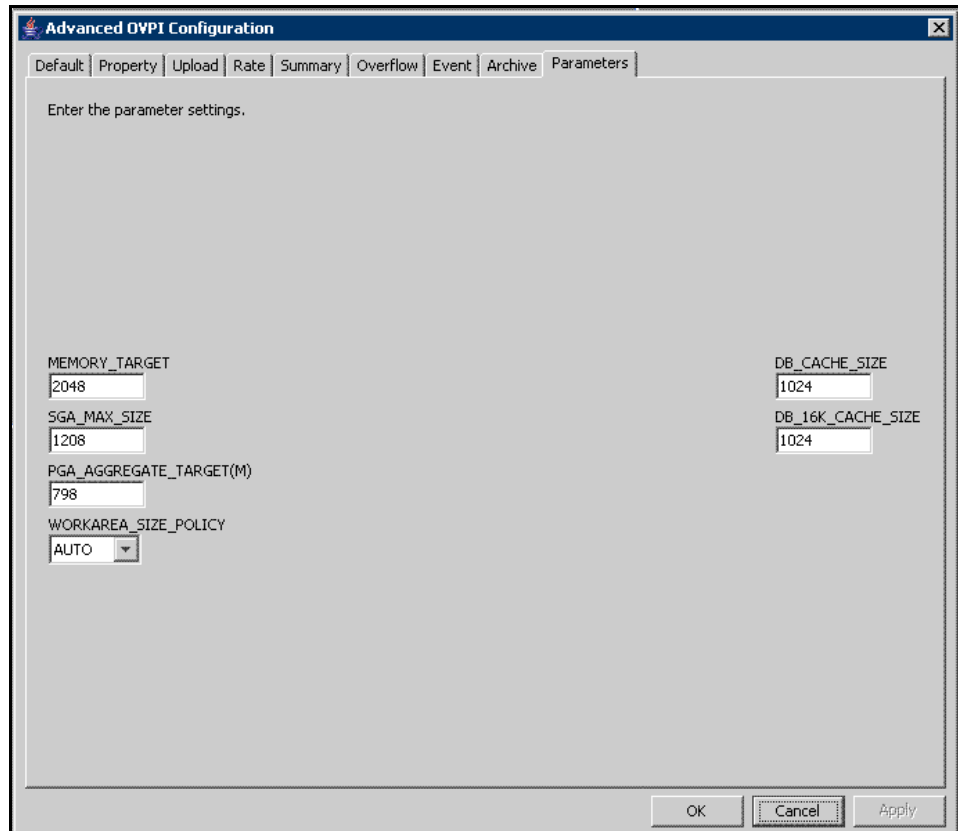
Data Files (File Name and Size (MB): You must create at least one data file for each tablespace. Use logical names and descriptions; operating system maximums apply.

- To add a data file, click **Add**. The DataFile Information window opens. Use the window to type the name of the data file and the size of the data file, and click **OK**.
- To modify a data file, select the data file, and click **Modify**. The DataFile Information window opens. Use the window to change the name of data file, its size, or both, and click **OK**.
- To remove a data file, select the data file, and click **Remove**.

- Click OK. For 32-bit Linux and other UNIX platforms, the following window opens:



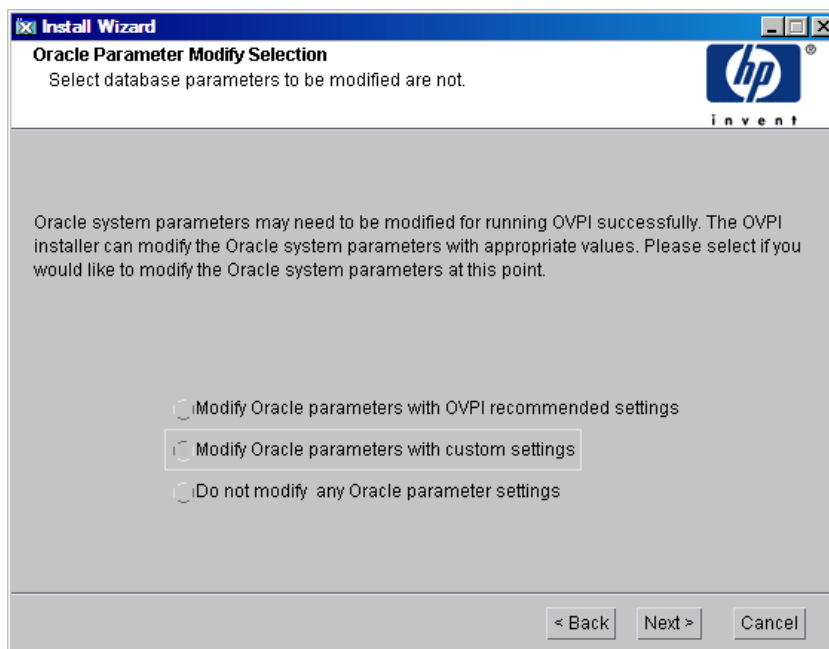
For 64-bit Linux platforms, the following window opens:



- c Click **OK** to return to the Oracle User and Tablespace Creation window.

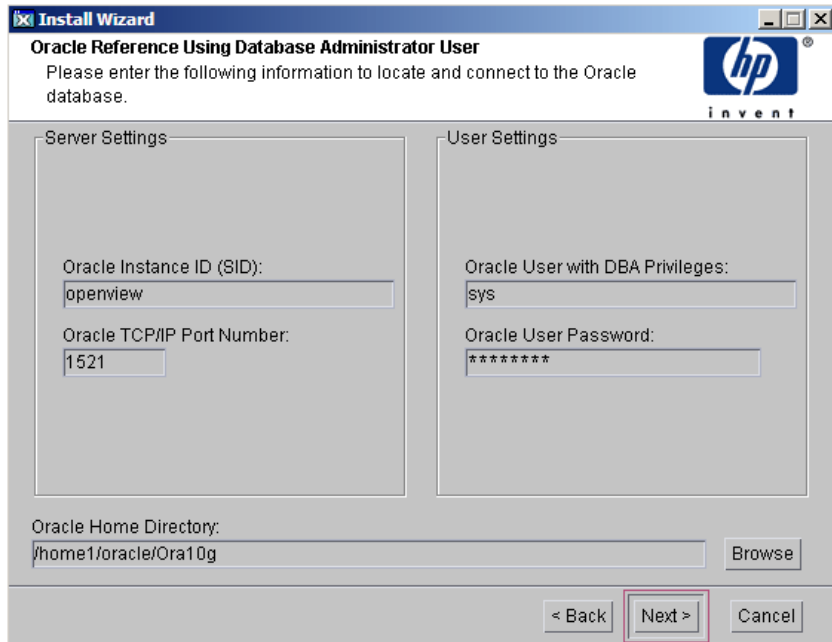
Option 2:

You can modify the parameters with custom settings. Select Modify Oracle parameters with custom settings.



- **MEMORY_TARGET:** Specify the Oracle system-wide usable memory. The database tunes memory to the MEMORY_TARGET value, reducing or enlarging the SGA and PGA as needed.
- **SGA_MAX_SIZE:** Determine the maximum amount of memory that is utilized by the Oracle database. This memory is shared memory and is used by all Oracle server processes.
- **PGA_AGGREGATE_TARGET (M):** Specify the target aggregate PGA memory available to all server processes associated with the instance. The default is 200M.
- **DB_FILE_MULTIBLOCK_READ_COUNT:** Specify the maximum number of blocks that should be read in one I/O operation when a sequential scan occurs in order to minimize I/O during table scans.
- **WORKAREA_SIZE_POLICY:** Specify the policy for sizing work areas to control the mode in which working areas are tuned. The default is AUTO. It is *not* recommended that you use MANUAL for the value.

- **DB_16K_CACHE_SIZE**: Specify the size of the DEFAULT buffer pool for buffers with the primary block size. The default is TRUE. It is *not* recommended that you use FALSE.
 - **DB_32K_CACHE_SIZE**: Specify the size of the cache for 32K buffers.
- 1 Click **Next** to continue. The Oracle Reference using Database Administrator User window opens.



In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database. For more information on locating and connecting to the Oracle database, see [Locate and connect to the Oracle database](#) on page 98.

- Click **Next** to continue. For 32-bit Linux and other UNIX platforms, the following window opens:

The screenshot shows a window titled "Install Wizard" with the subtitle "Configure Oracle Parameters". Below the subtitle is the instruction "Enter Oracle database parameters for setting" and the HP logo with the word "invent" underneath. The main area contains five parameter settings, each with a text input field:

- SGA_MAX_SIZE: 1228
- PGA_AGGREGATE_TARGET(M): 200
- WORKAREA_SIZE_POLICY: AUTO (with a dropdown arrow)
- DB_CACHE_SIZE: 512
- DB_32K_CACHE_SIZE: 512

At the bottom right, there are three buttons: "< Back", "Next >" (highlighted with a red box), and "Cancel".

For 64-bit Linux platforms, the following window opens:

The screenshot shows a window titled "Install Wizard" with the subtitle "Configure Oracle Parameters". Below the subtitle is the instruction "Enter Oracle database parameters for setting". In the top right corner, there is an HP logo and the word "invent". The main area of the window contains six parameter settings, each with a text input field:

- SGA_MAX_SIZE: 1208
- MEMORY_TARGET: 2048
- PGA_AGGREGATE_TARGET(M): 798
- DB_CACHE_SIZE: 512
- DB_16k/32K_CACHE_SIZE: 512
- WORKAREA_SIZE_POLICY: AUTO (dropdown menu)

At the bottom of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dotted border), and "Cancel".

- o Fill in the desired values (the graphic shows example values).

The values entered are recorded on the Advanced PI Configuration window as follows:

The screenshot shows a window titled "Advanced OVPI Configuration" with several tabs: Default, Property, Upload, Rate, Summary, Overflow, Event, Archive, and Parameters. The Parameters tab is active. The window contains the text "Enter the parameter settings." and several input fields for configuration parameters. The parameters and their values are:

Parameter Name	Value
SGA_MAX_SIZE	1228
PGA_AGGREGATE_TARGET(M)	200
WORKAREA_SIZE_POLICY	AUTO
DB_CACHE_SIZE	814
DB_32K_CACHE_SIZE	814

At the bottom right of the window, there are three buttons: "OK", "Cancel", and "Apply". The "OK" button is highlighted with a red rectangular box.

- b Click **Next**. The Oracle User and Tablespace Creation window opens.

Install Wizard

Oracle User and Tablespace Creation

Please enter the information necessary to create the OVPI user and tablespaces.

If you wish to customize each tablespace that will be created, select the Advanced button. Modifying the *Database Size* or *Data File Folder* fields on this page will override any Tablespace settings that have been entered via the Advanced button.

OVPI Tablespace Settings

Database Size:
1538 MB

Data File (.dbf) Folder:
/dbs

OVPI DB User (dsj_dpip)

Password:

Confirm Password:

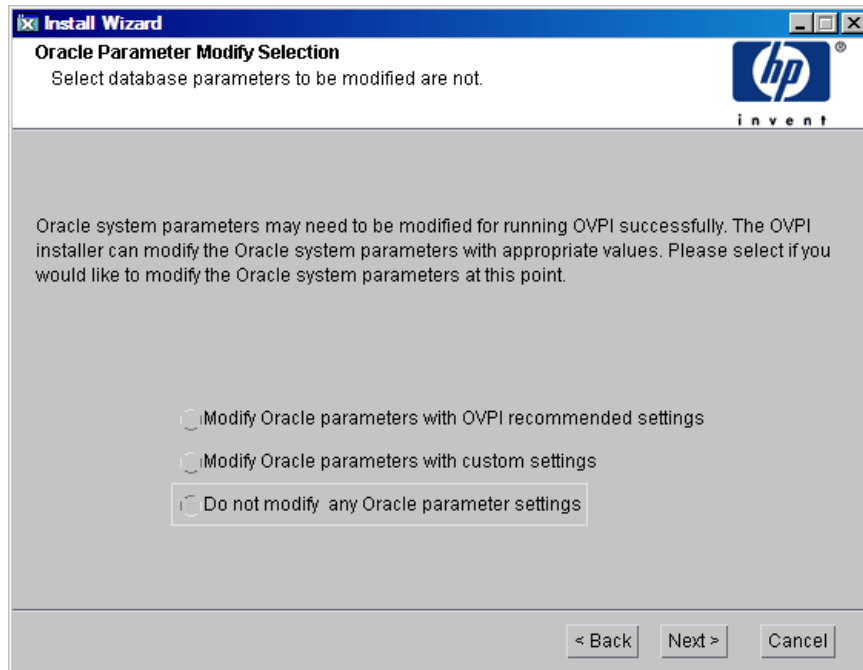
Click for advanced settings.

For more information on Oracle user and tablespace creation, see [Oracle User Account and Tablespace Creation](#) on page 99.

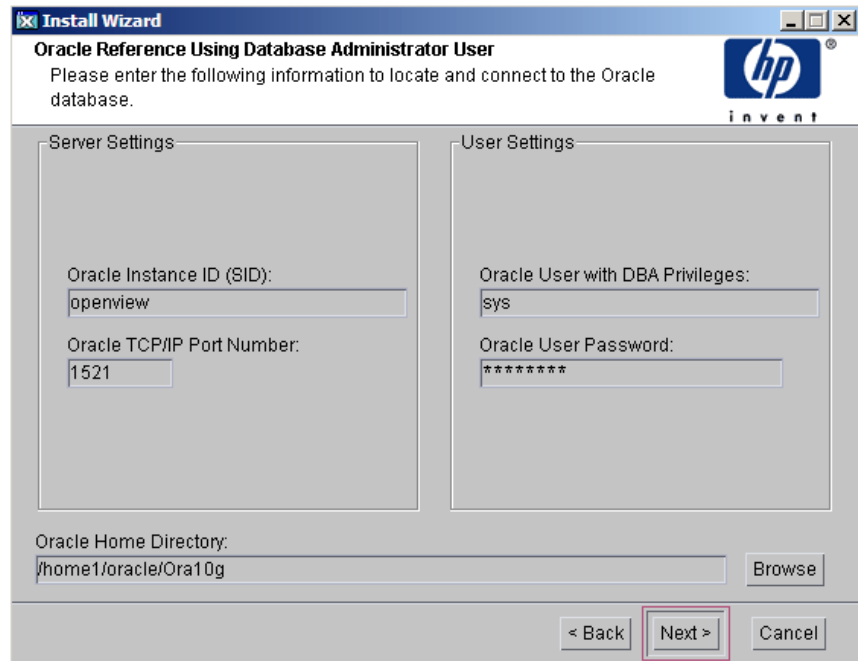
Option 3:

You can choose not to change any of the Oracle parameters.

Select Do not modify any Oracle parameters settings.

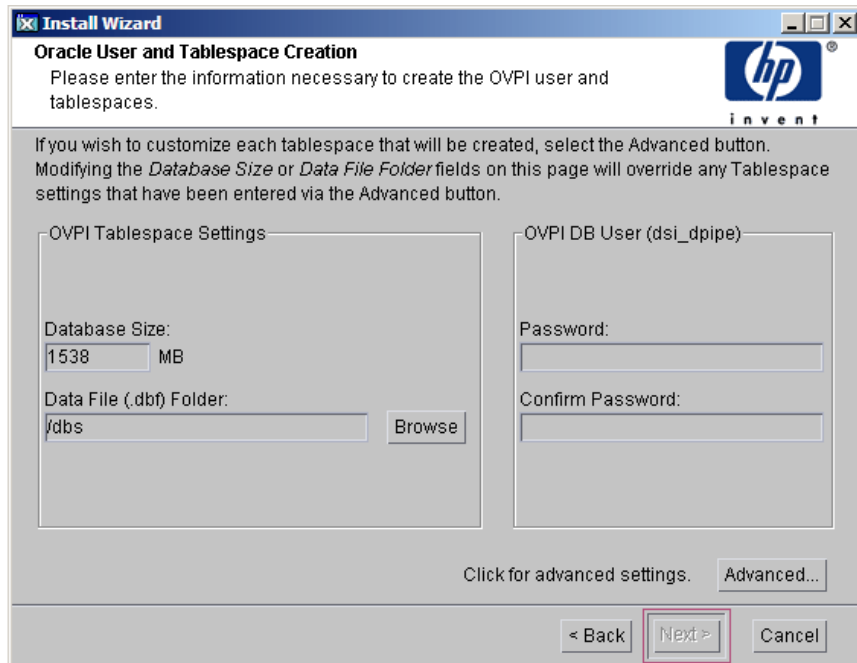


- 1 Click **Next** to continue. The Oracle Reference using Database Administrator User window opens.



In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database. For more information on locating and connecting to the Oracle database, see [Locate and connect to the Oracle database](#) on page 98.

- 2 Click **Next** to continue. The Oracle User and Tablespace Creation window opens.

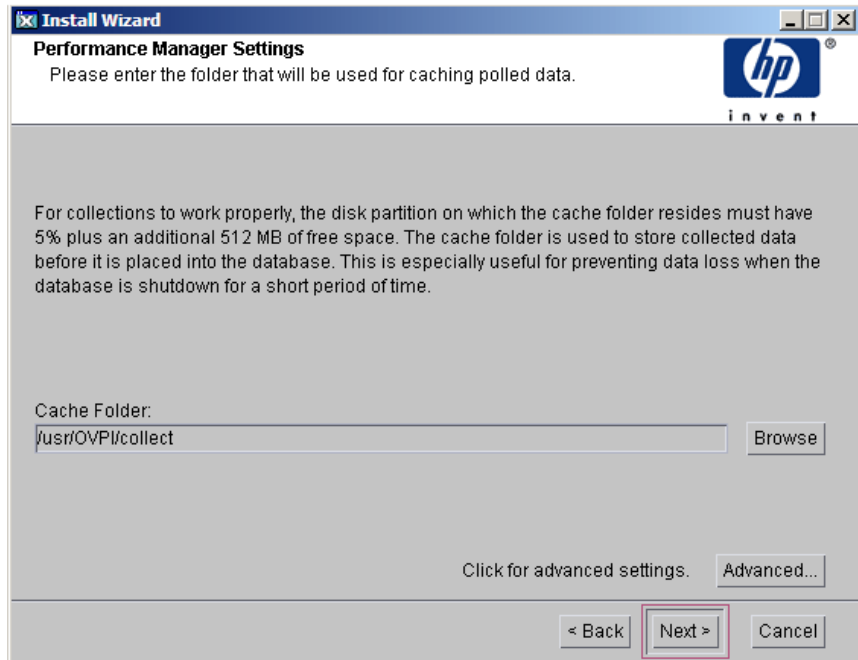


For more information on Oracle user and tablespace creation, see [Oracle User Account and Tablespace Creation](#) on page 99.

When the Oracle user account and tablespace creation is completed, click **Next**. The Performance Manager Settings window opens.

Task 7: Configure Polling Collections

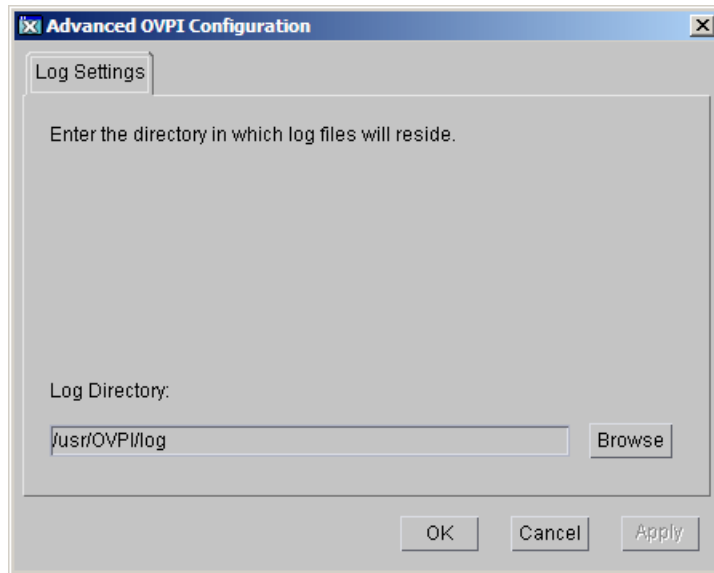
In the Performance Manager Settings window, identify the cache directory in which to store collected data before it is placed into the database. This can prevent data loss when the database is shut down for a short period.



- 1 Accept the default directory or type a fully-qualified directory path to be used for caching polled data.

For collections to work properly, the disk partition on which the cache directory resides must have 5% plus an additional 512 MB of free space. For example, if the disk partition is 10 GB, it must have 1 GB of free space.

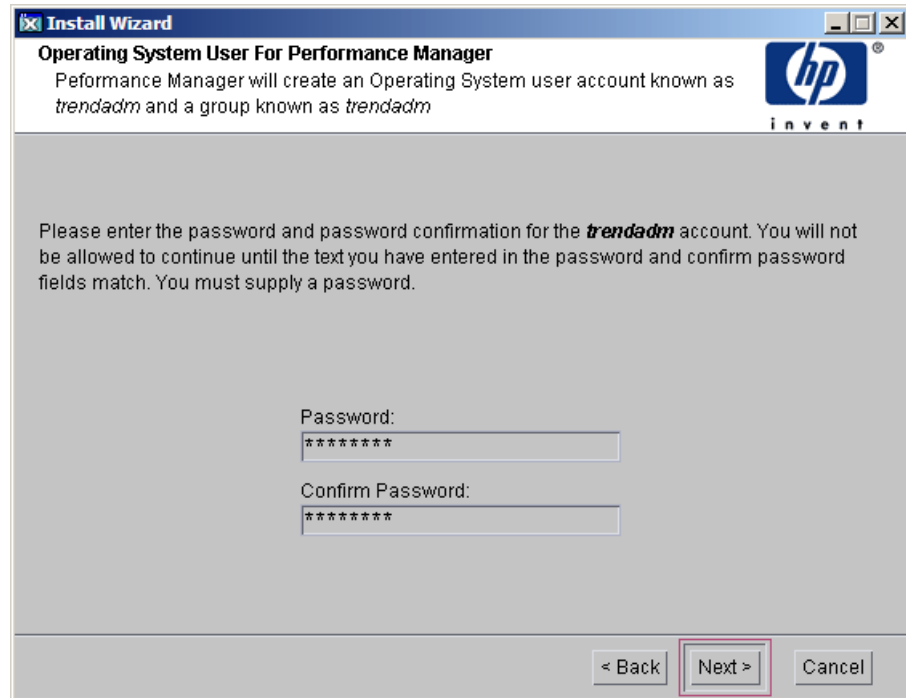
- 2 Click **Advanced...** to open the Advanced PI Configuration window, where you can specify the directory in which the log files reside.



- a Accept the default path, which creates a log directory under the directory to which you installed PI (log files are maintained there, regardless of the directory you specify), or type the directory path in which the log files reside.
 - b Click **OK** to apply changes and return to the Performance Manager Settings window.
- 3 Click **Next** to continue.

Task 8: Create or modify the Operating System Account

In the Operating System User for Performance Manager window, identify an operating system account and group named *trendadm*, the purpose of which is to preserve the environment in which PI runs.



Install Wizard
Operating System User For Performance Manager
Performance Manager will create an Operating System user account known as *trendadm* and a group known as *trendadm*

Please enter the password and password confirmation for the *trendadm* account. You will not be allowed to continue until the text you have entered in the password and confirm password fields match. You must supply a password.

Password:

Confirm Password:

< Back **Next >** Cancel

▶ Do not confuse the *trendadm* account used to log on to the operating system with the *trendadm* account created later, used to log on to the Web Access Server application. The window prompts you for different information depending on whether the operating system and group account already exists.

To create the operating system account and group:

- 1 Create a password for the *trendadm* account by typing values for the following:

- a **Password:** The password must be at least one character long. It can be any length and contain any character. Adhere to your company's policy for password creation.
 - b **Confirm Password:** Retype the password.
- 2 Click **Next** to continue.

To modify the operating system account user environment.

- 1 Click one of the following:
- **Modify user environment:** This parameter updates the trendadm account's .profile or .cshrc with the PI environment variables (COLLECT_HOME, DPIPE_HOME, DPIPE_TMP, and TREND_LOG).
 - **Do not modify user environment:** This parameter does not update the account's .profile or .cshrc with the PI environment variables. If you select this option, you must manually add the PI environment variables later.
- 2 Click **Next** to continue.

Task 9: Specify an Administrator and Port for the Web Access Server

In the Web Access Server Settings window, create a PI administrator account for the Web Access Server, as well as an HTTP port on which to listen.

Web Access Server Settings

The OVPI Web Access Server component requires an OVPI administrator user to be created on your Web Access Server and a HTTP port on which to listen.

User Settings

Please enter the username and password for the OVPI web access administrator.

Username: trendadm

Password: *****

Confirm Password: *****

Port Settings

Please enter the HTTP port on which the web access server will listen. If you choose a port other than 80, the port number must be used in the URL for accessing the web access server.

HTTP Port: 80

Click for advanced settings. **Advanced...**

< Back Next > Cancel

1 Type values for the following parameters:

- **Username:** Accept the default username for the Web Access Server administrator, or type a new name. This account is used to log on to the Web Access Server.

▶ Do not confuse this account with the trendadm account used for logging on the operating system, which is used to preserve the environment in which PI runs.

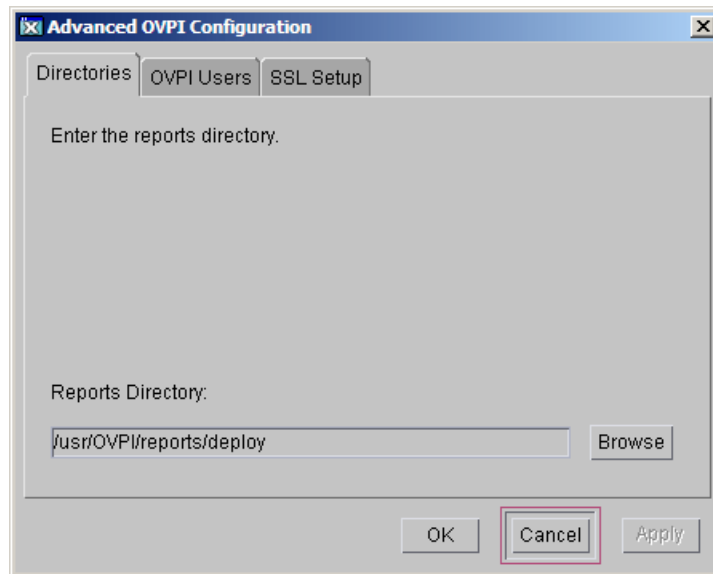
There are no restrictions on the minimum and maximum length or on the characters that can be used in the username and password. Adhere to your company's policy for username and password creation.

- **Password:** Type a password for the Web Access Server administrator account.

You can change password rules after you install PI using the Web Access Server application. See the *HP Performance Insight Administration Guide* for details.

- **Confirm Password:** Retype the password.
 - **HTTP Port:** Accept the default port (80) or type a new port number for the Web Access Server. Any open port can be used.
- 2 If necessary, click **Advanced...** to open the Advanced Configuration window, in which you can select the following tabs:

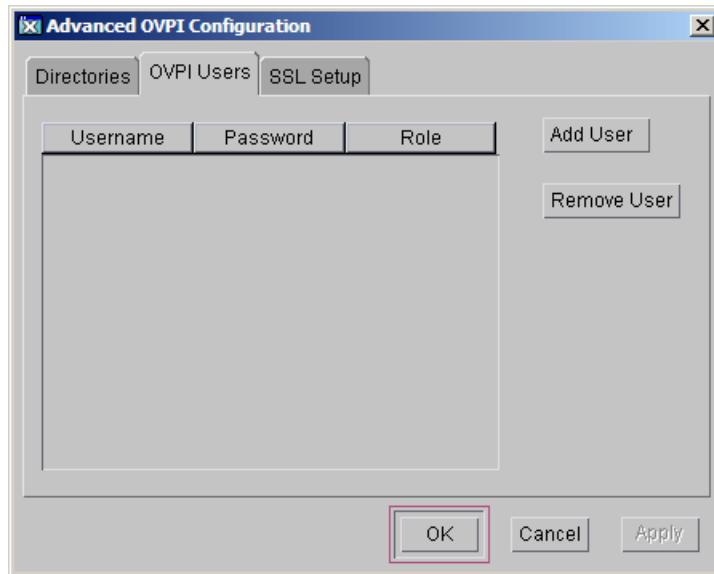
Directories: To change the location of report directories, in which all deployed reports are stored. To change the location of the reports directories:



- a Accept the default directory or identify a new directory.
- b Click **Apply**.
- c Click **OK** to return to the Web Access Server Settings window.

OVPI Users: To create and modify user accounts used to log on to PI clients. You can create regular user accounts or administrator accounts. Regular user accounts can access the PI clients. Administrator accounts

can access the administration features (Administration link) of the Web Access Server. See the *HP Performance Insight Administration Guide* for details.



To add or modify a user account:

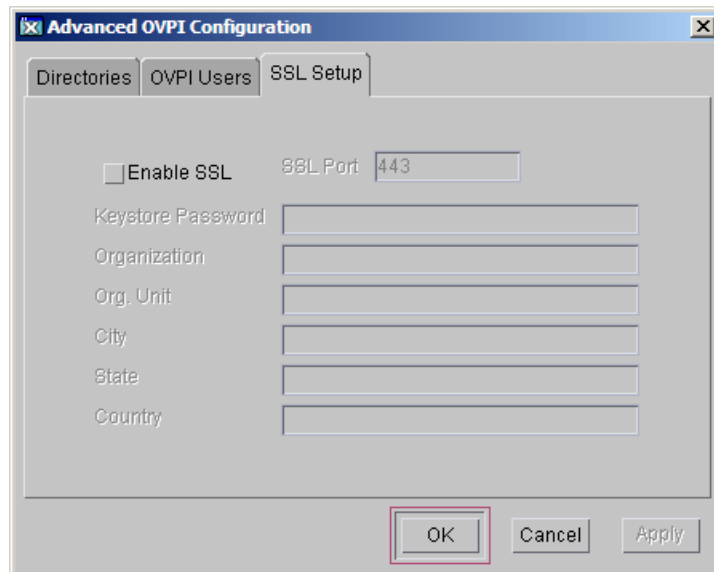
- a Click **Add User**. A default username (new-user), password (new-user), and role (user) displays, along with created user accounts.
- b Double-click the name or password, delete the value, and type a new value. Select either **user** or **admin** for Role.
- c Click **Apply**.

To remove a user account:

- a Select the user name and click **Remove User**.
- b Click **Apply** and then click **OK** to return to the Web Access Server Settings window.

You can also create, modify, and delete user accounts after you install PI using the Web Access Server. See the *HP Performance Insight Administration Guide* for details.

SSL Setup: To enable SSL communications, which you can use to enable secure communication between the Web Access Server and a supported web browser, Report Viewer, Report Builder, and the Management Console. To enable SSL, you create a self-signed certificate. This self-signed certificate enables you to enable SSL, however, it is only valid for 90 days. You should send this certificate to a certificate authority in order to receive a signed digital certificate or generate another self-signed certificate before the 90 days expires. After you sign a digital certificate, you must import it using the Web Access Server application. You can also use the Web Access Server to change SSL settings after you install PI. See the *HP Performance Insight Administration Guide* for details.



To enable SSL communications and create a self-signed certificate, click to select the **Enable SSL** check box.

By selecting this option, you will not disable the standard HTTP listener. Thus, the secured SSL port and the unsecured HTTP port are both enabled.

- o **SSL Port:** Accept the default value or type a new value.

- b **Keystore Password:** Type a password of six characters or more. Record the password and keep it in a secure place. You need it to generate a signed certificate. After you generate your self-signed certificate, it is stored in the certificate repository. This password lets the Web Access Server access the certificate repository.

The remaining fields request information that is necessary when you generate an SSL key that must be verified and signed by a certificate-signing authority. This information is used by the person who checks the certificate to ensure that the certificate is valid.

- a **Organization** (Optional): Type the name of your organization, for example, “ABC Systems, Inc.”
 - b **Org. Unit** (Optional): Type the name of your department or division, for example, “Northeast Sales”.
 - c **City** (Optional): Type the name of your city or locality, for example, “Los Angeles”.
 - d **State** (Optional): Type the name of your state or province, for example, “California”.
 - e **Country** (Required): Type your two-letter country code in the Country box, for example, “US”.
- 3 Click **Apply**.
 - 4 Click **OK** to return to the Web Access Server Settings window.
 - 5 Click **Next** to continue. The Summary window opens.

Task 10: Review the installation information

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Install** to continue. The Installation Progress window opens.

Task 11: Finish the installation

In the Installation Progress window you can view the status of the installation as it occurs. After the installation process is completed, information about whether the installation was successful is displayed.

- If the PI installation completes successfully, click **Done**.

- If the PI installation is unsuccessful:
 - 1 Click **Details** at the bottom of the Installation Progress window for additional information.
 - 2 Contact Support (see [Support](#) on page 5).

To install report packs and datapipes, see the instructions in the *HP Performance Insight Administration Guide*.

7 Installing PI in a Distributed Environment

The PI Installation Program contains options for installing the PI components and remote pollers. To upgrade the database (which you must do before upgrading PI), see [Chapter 9, Upgrading to Oracle 10g Enterprise Edition](#). To upgrade PI and the remote pollers, see [Chapter 11, Upgrading From PI 5.10 to PI 5.41](#).

Perform the following steps, before installing PI:

- 1 Log on to the local system as root.
- 2 Insert the PI Installation DVD in the DVD-ROM drive.

Mount the DVD using the instructions provided in the following table:

Operating System	Command
Solaris	<p>The DVD should mount automatically when you insert it in the DVD-ROM drive, opening the File Manager window. If not, as root, type the following:</p> <pre>mkdir /dvdrom mount -r /dev/dsk/dvd_devicename /dvdrom</pre> <p>In this instance, <i>dvd_devicename</i> is the name of the DVD-ROM device.</p> <ul style="list-style-type: none">a Display the dvd_label by typing the command: <pre>ls -l /dvdrom</pre>b Change directory by typing the command: <pre>cd /dvdrom/dvd_label</pre> <p>In this instance, <i>dvd_label</i> identifies the DVD name.</p>
HP-UX	<p>Use the SAM utility to mount the DVD-ROM, <i>or</i> type the following commands:</p> <pre>mkdir /dvdrom mount /dev/dsk/dvd_devicename /dvdrom</pre> <p>In this instance, <i>dvd_devicename</i> is the name of the DVD-ROM device.</p>
Red Hat Linux	<p>The DVD should mount automatically when you insert it in the DVD-ROM drive, opening the File Manager window. If not, as root, type the following:</p> <pre>mount -r /dev/dvdrom <mount_directory></pre> <p>In this instance, <i>mount_directory</i> is the directory where contents of the DVD-ROM are stored.</p>

3 Start the Installation Program:

Locate the setup program, and start it by typing the command:

```
./setup
```

The Setup Utilities window opens.

- ▶ Before you start installing PI, you must stop the db console process in Oracle. Run the following:

```
$ORACLE_HOME/bin/emctl stop dbconsole
```

You must do this because the PI installer restarts the Oracle database during installation. If the dbconsole process is running, the PI install fails.

If you plan to use a remote Oracle database, see [Configure the Oracle Database](#) on page 53 before beginning.

Perform the following steps to install the PI in a Distributed Environment:

Installing PI on a Central Server

In a distributed environment, you must first install PI on the Central Server. You can then install the Satellite Servers and register them with the Central Server. The procedure for installing PI on a Central Server is the same as for installing PI on a Standalone Server. For more information, follow the instructions in [Chapter 6, Installing PI on a Standalone Server](#).

- ▶ For the installation of PI on a Central Server, selecting **PI Database Schema** and **Performance Manager** is mandatory. Clear any other checkbox, if you do not want to install all the PI components on the central server. For more information, see [Task 2](#) on page 93.

In Central Server installation, instead of Standalone Server, select **Central Server** option (as described in [Task 3](#) on page 94) from the Server Role window.

Installing PI on a Satellite Server

This section describes the steps for installing the PI on the Satellite Server.



- Install PI Database Schema and PI Performance Manager on each satellite database server.

At this point, you can discover the network on the satellite database servers.

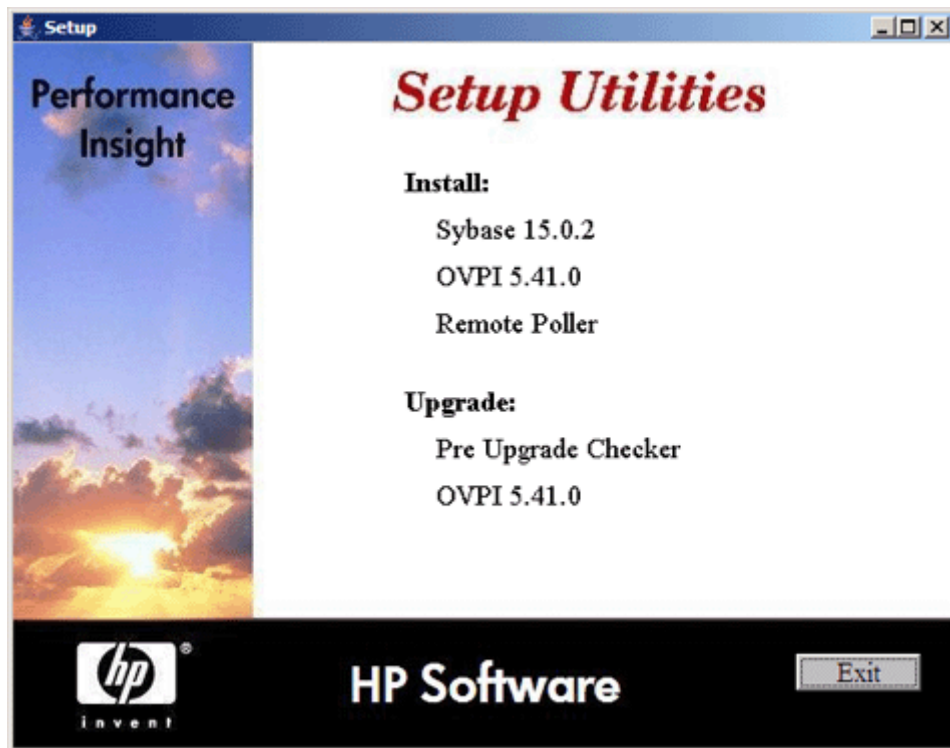
- Install report packs and datapipes on each satellite database server.
- Install the Remote Poller component on each remote polling system. If you have more than one remote polling system, you must repeat the installation procedure for each.

At this point, you can perform a type discovery of each satellite database server, configure report packs for operation in the distributed environment, and configure polling policies for remote polling systems. You can defer this task until the installation is complete.

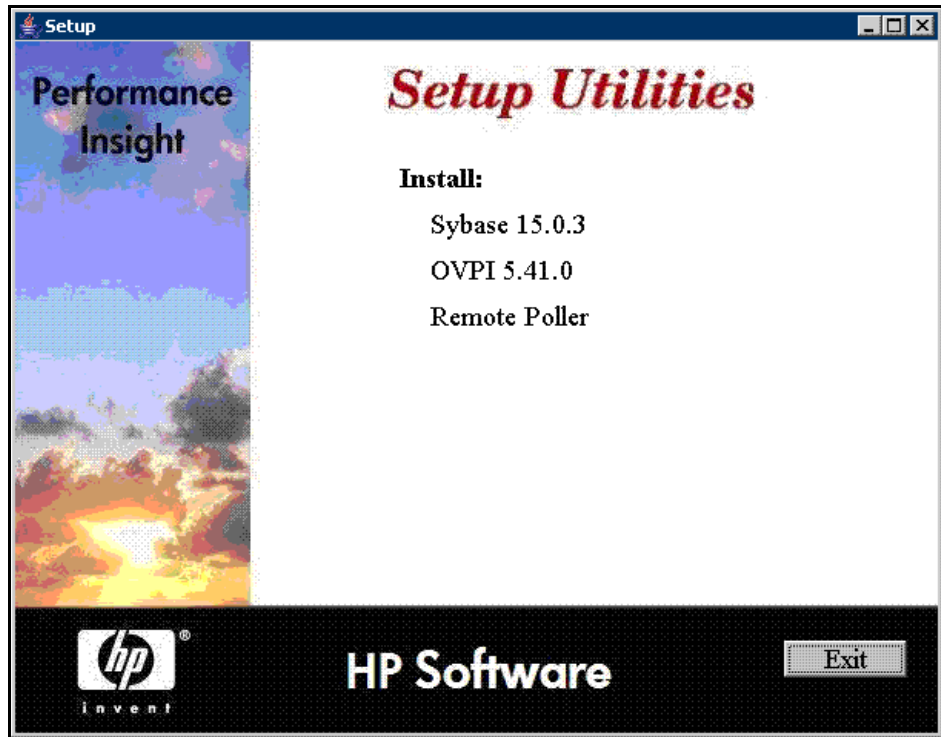
- Install the PI client applications on individual workstations whose users access the Web Access Server.

Task 1: Start the PI Installation Program

- 1 Start the PI installation program. For 32-bit Linux and other UNIX platforms, the following Setup Utilities window opens:

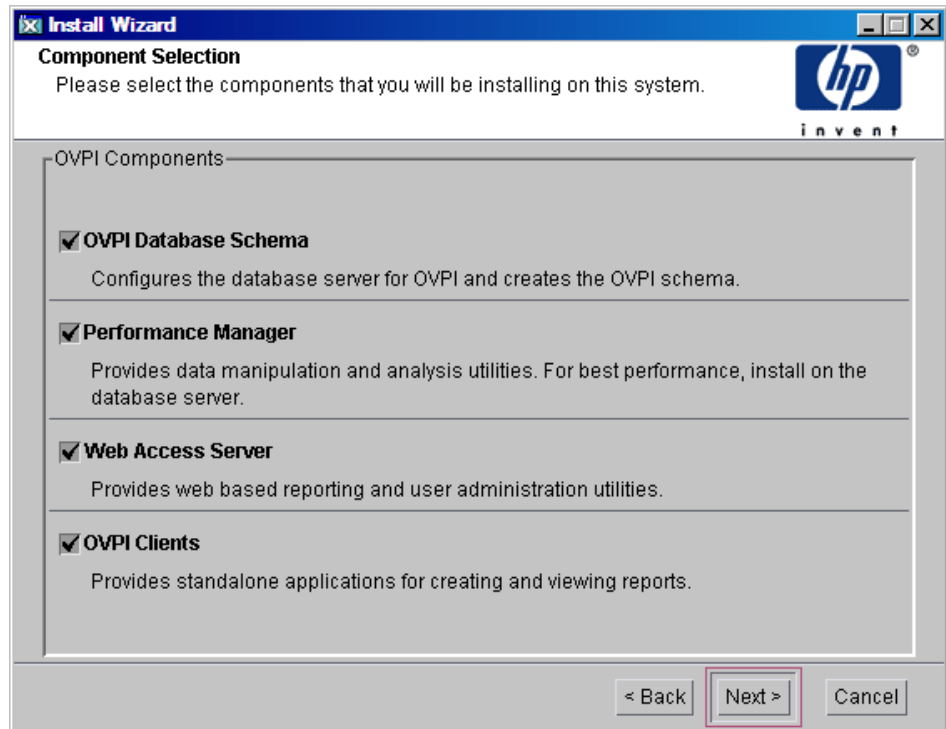


For 64-bit Linux platforms, the following Setup Utilities window opens:



- 2 Select **OVPI 5.41.0** from the Install section of the window. The Welcome window opens.
- 3 Read the Welcome window and click **Next** to continue. The License Agreement window opens.
- 4 Accept the license agreement and click **Next** to continue. You must accept the license agreement to proceed. If you click **Cancel**, you are prompted to confirm your rejection of the license agreement and installation ends.

The Component Selection window opens.



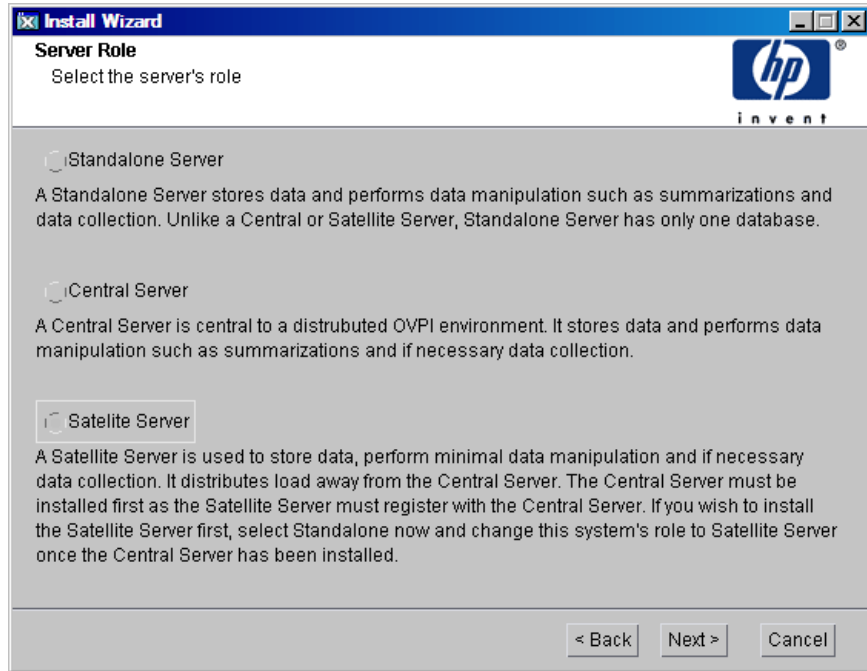
Task 2: Select the PI Components you want to Install

- 1 Select the components which you want to install from the Component Selection window.

▶ Selecting **PI Database Schema** and **Performance Manager** is mandatory.

Clear any other checkbox, if you do not want to install all the PI components on the satellite server.

- 2 Click **Next** to continue. The Server Role window opens.

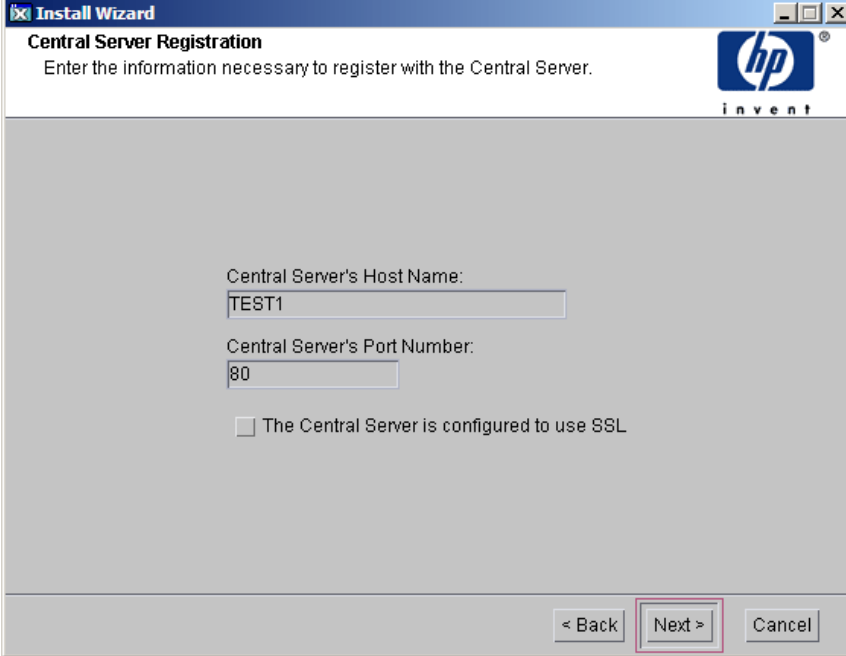


Task 3: Select a Role for the Database System

From the Server Role window, select **Satellite Server**.

If you want to change the role at a later time, use the System and Network Administration application in the PI Management Console. For more information, see the *HP Performance Insight Administration Guide*.

- 1 Click **Next** to continue. The Central Server Registration window opens.

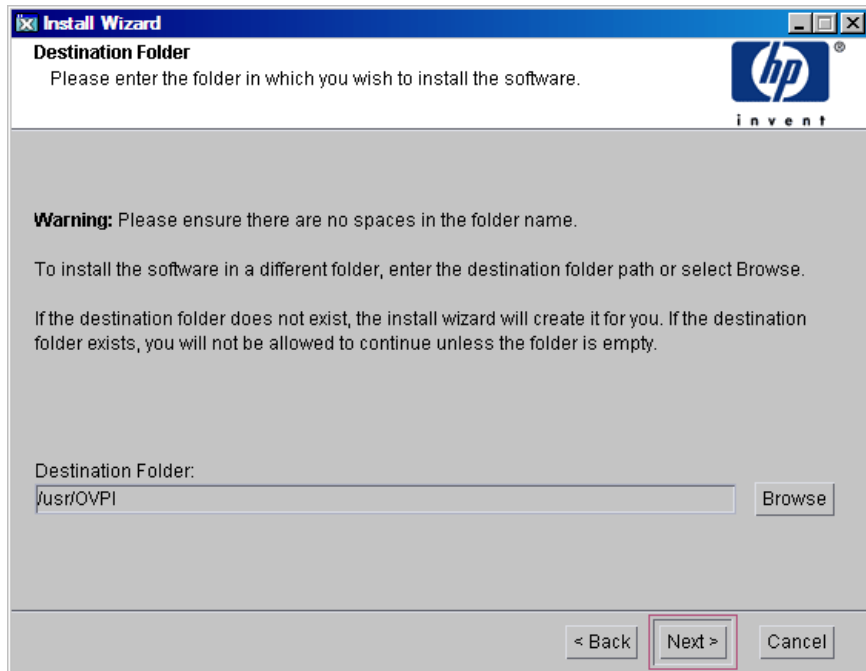


The screenshot shows a window titled "Install Wizard" with a sub-header "Central Server Registration". Below the sub-header is the instruction "Enter the information necessary to register with the Central Server." and the HP logo with the word "invent" underneath. The main area contains two text input fields: "Central Server's Host Name:" with the value "TEST1" and "Central Server's Port Number:" with the value "80". Below these fields is a checkbox labeled "The Central Server is configured to use SSL", which is currently unchecked. At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel". The "Next >" button is highlighted with a red rectangular box.

Task 4: Specify the Host Name and Port Number for the Satellite Server

Satellite Server provides an option to specify the host name and port number (default value is 80) of the central server to register with. This is required to synchronize the information stored in the systems.xml file. For secure communication, you can enable SSL. The registration is completed at the end of the installation process.

- 1 Click **Next** to continue. The Destination Folder window opens.



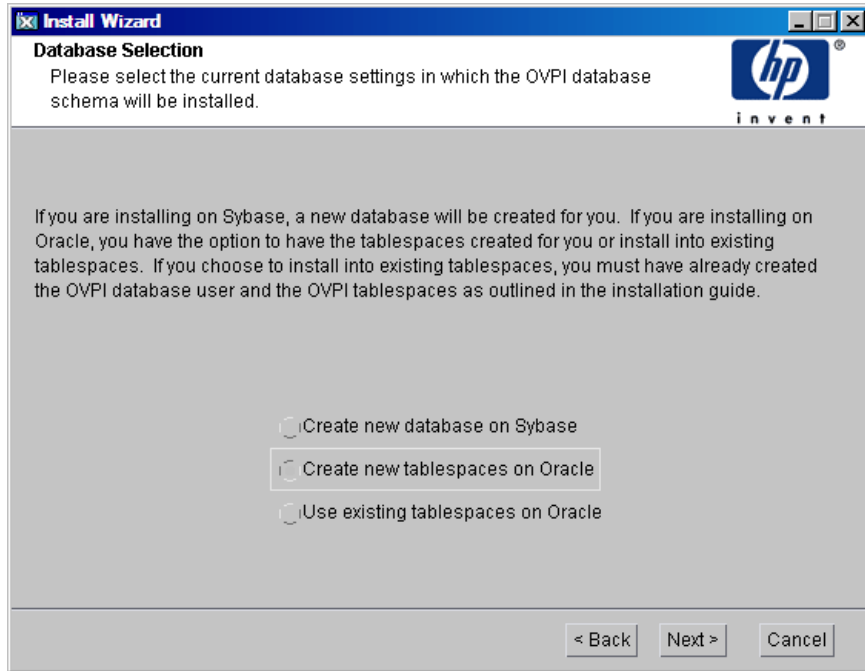
Task 5: Specify an Installation Directory for the PI Software

In the Destination Folder window, specify the directory to which the PI software is installed. The destination directory can be an NFS mounted directory, a UNIX soft link, or a UNIX hard link.

- 1 Accept the default destination directory, or identify a different directory. The path cannot contain any spaces.
 - If the destination directory does not already exist, the Installation Program creates it.

- If the destination directory exists and contains data, a message warns you that the directory is not empty.
- If the destination directory is located on a file system that the Installation Program cannot access, a message warns you. You cannot continue the installation until you supply a valid destination.

2 Click **Next** to continue. The Database Selection window opens.



Task 6: Select the RDBMS on which the PI Database Instance is Created

The Database Selection window opens. Use the window to identify the RDBMS on which the PI Database instance is created, and to indicate whether to create new tablespaces or install into existing tablespaces.

1 Select one of the following options:


- **Create new tablespaces on Oracle**

Select this option if you have not already created the database user account (dsi_dpipes) and tablespaces, as described in [Guidelines for Tablespace Sizing](#) on page 56.

- **Use existing tablespaces on Oracle**

Select this option if either of the following is true:

- The system on which you are installing PI uses Oracle Client to access a remote Oracle database.
- Run the pre-create schema as described in [Pre-Create Schema](#) on page 59.

 If you are unsure of which option to use, select **Create New Tablespaces on Oracle**.

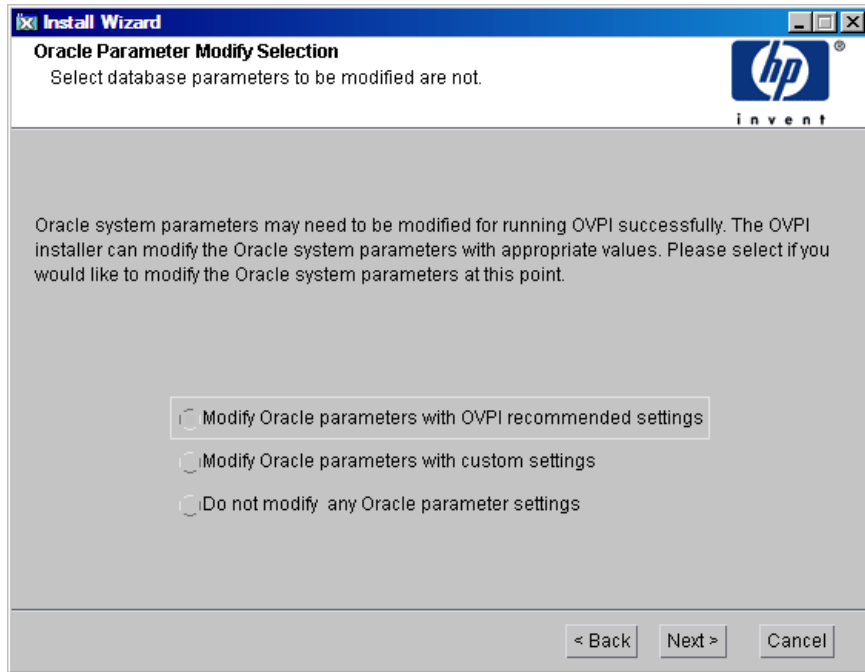
- 2 Click **Next** to continue. The Oracle Parameter Modify Selection window opens.

Task 7: [\(Optional\) Change specific Oracle Configuration Parameters](#)

The Oracle Parameter Modify Selection window gives you three choices for changing your Oracle configuration.

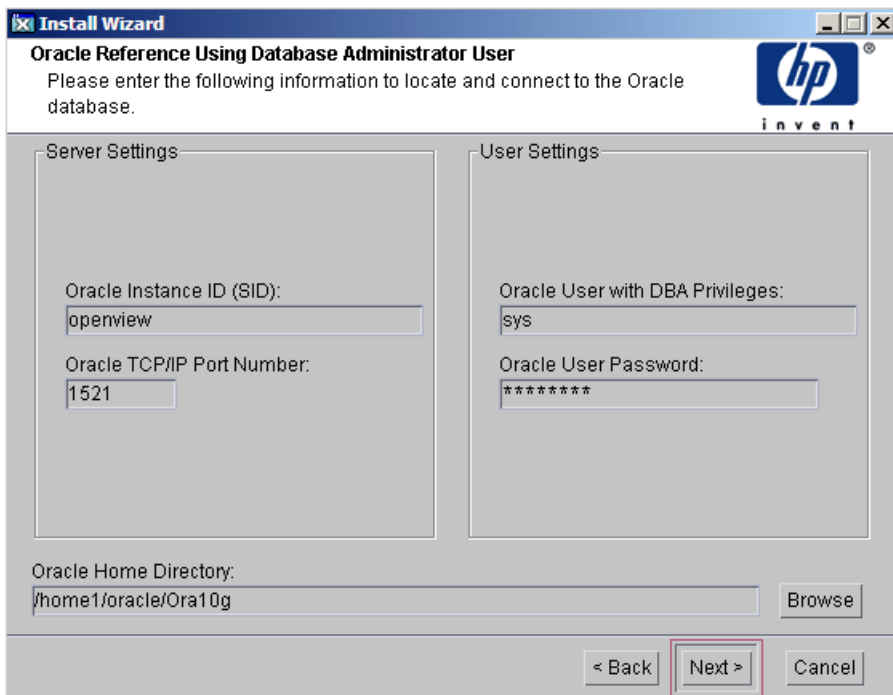
 For Oracle 11g R2 installation on UNIX platforms other than Linux 64-bit, select the option **Do not modify any Oracle parameters settings**.

These options with their procedures are explained below:



Option 1:

Select **Modify Oracle parameters with OVPI recommended settings** and click **Next**. The Oracle Reference using Database Administrator User window opens.



In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database.

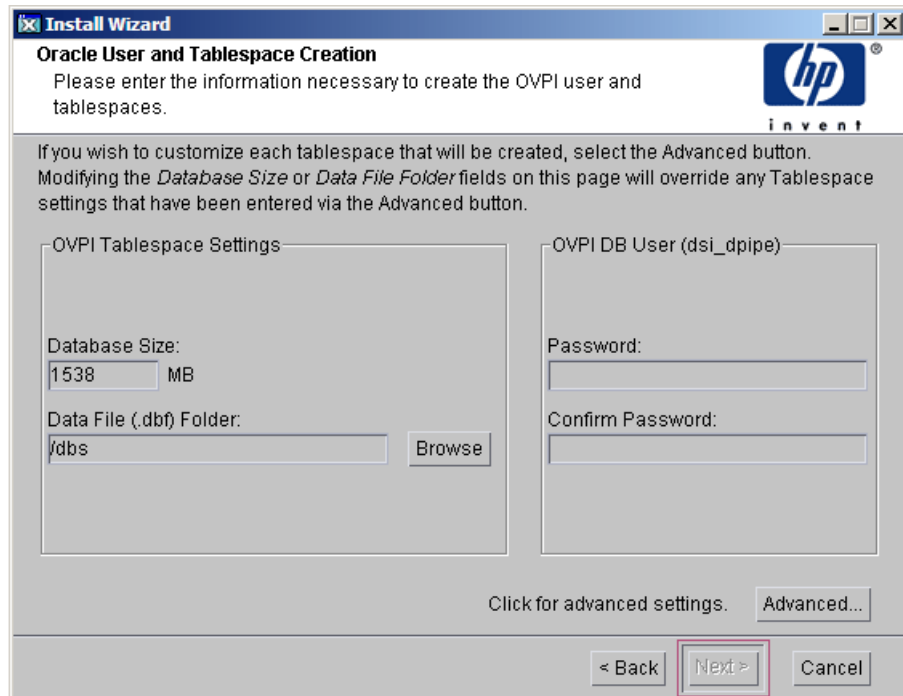
Locate and Connect to the Oracle Database

- 1 Accept the default values or type new values for the following parameters:
 - **Oracle Instance ID (SID):** type the name of the Oracle database instance.

A default is provided only if the Oracle environment variable ORACLE_SID is set. Verify that the SID shown is correct, because you may have more than one database instance running.
 - **Oracle TCP/IP Port Number:** type the TCP/IP port for Oracle. The default is 1521.
 - **Oracle User with DBA Privileges:** the default is sys. Do not change it.

- **Oracle User Password:** type the password for the sys account that you created when you installed the Oracle RDBMS.
- **Oracle Home Directory:** identify the directory onto which you installed Oracle. If the installation program can determine the location of the Oracle Home directory, it is shown as the default.

Click **Next** to continue. The Oracle User and Tablespace Creation window opens.



Oracle User Account and Tablespace Creation



Tablespaces are created with autoextend on, allowing Oracle to automatically extend a datafile to meet the needs of the data if sufficient free space does not currently exist in the tablespace. Monitor the system to make sure that the physical file system does not exceed 100%.

Before you change the values for the Database Size and Data File Folder parameters, decide whether you want to modify the data files for database segments using the Advanced button. Total Size and Data File Folder settings override any settings made using the Advanced PI Configuration window.

1 Accept the default values or type new values for the following parameters:

- **Database Size:** Type the database size. The default size is 1024 MB. The minimum size is 500 MB. The tablespaces are created with the space appropriately distributed.
- **Data File (.dbf) Folder:** Type the directory in which the database files (.dbf) are created.
- **Password:** Type a password for the PI database user account (dsi_dpibe).

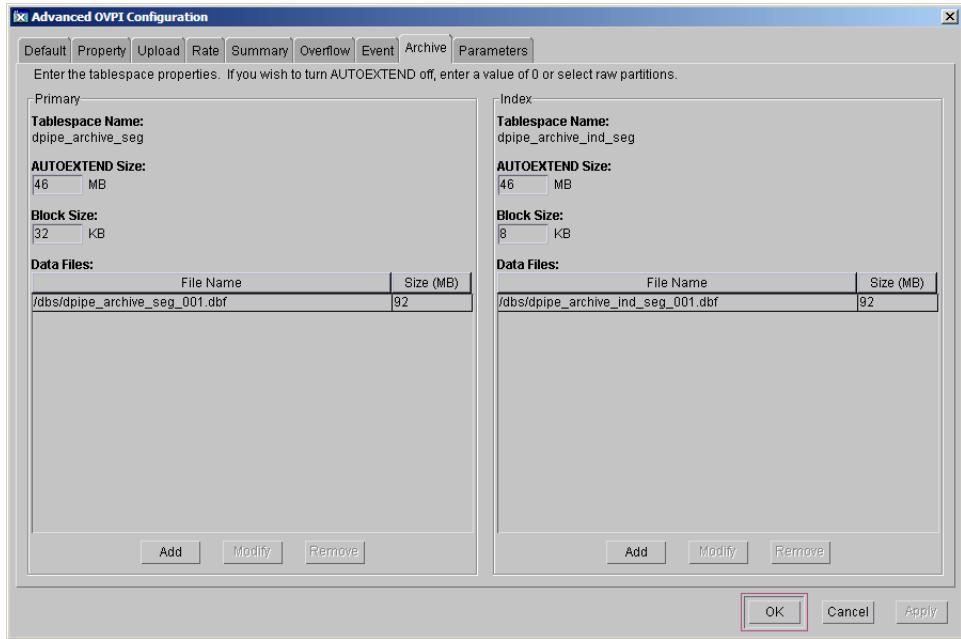
The password must start with an alphabetic character and must be between one and 30 characters in length. Valid characters are all alphanumeric characters and the underscore (_). The password is *not* case sensitive.

- **Confirm Password:** Retype the password.

2 Click **Next** to continue or click **Advanced...** to display the Advanced PI Configuration window. Use the window to add, modify, or remove the data files that comprise the tablespaces. The following window appears.



After you modify the database segments using the Advanced PI Configuration window, do **not** change the values for the Database Size and Data File Folder options in the Oracle User and Tablespace Creation window. If you change the values for these options, you cannot reset them; thus, they override the changes you made using the Advanced Configuration dialog box. There is no way to reset these options, unless you cancel the installation program and start the installation again.



For tablespace sizing guidelines, see [Chapter 4, Installing Oracle 10g Enterprise Edition](#) or [Chapter 5, Installing Oracle 11g R2 Enterprise Edition](#).

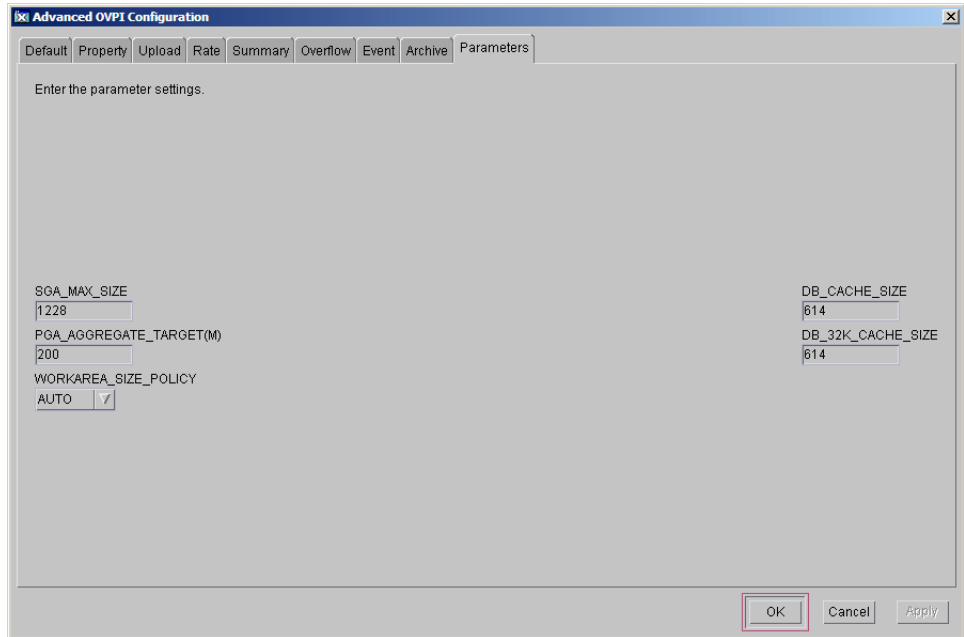
- a Select the tab associated with the tablespace you want to change. The tablespace tabs are:
 - Default: the dpipe_default_seg tablespace
 - Property: the dpipe_property_seg and dpipe_property_ind_seg tablespaces
 - Upload: the dpipe_upload_seg and dpipe_upload_ind_seg tablespaces
 - Rate: the dpipe_rate_seg and dpipe_rate_ind_seg tablespaces
 - Summary: the dpipe_summary_seg and dpipe_summary_ind_seg tablespaces
 - Overflow: the dpipe_overflow_seg tablespace
 - Archive: the dpipe_archive_seg tablespace

- Event: the dpipe_event_seg tablespace
- b Accept the default values or type values for the tablespace parameters. In each case, the parameters are:

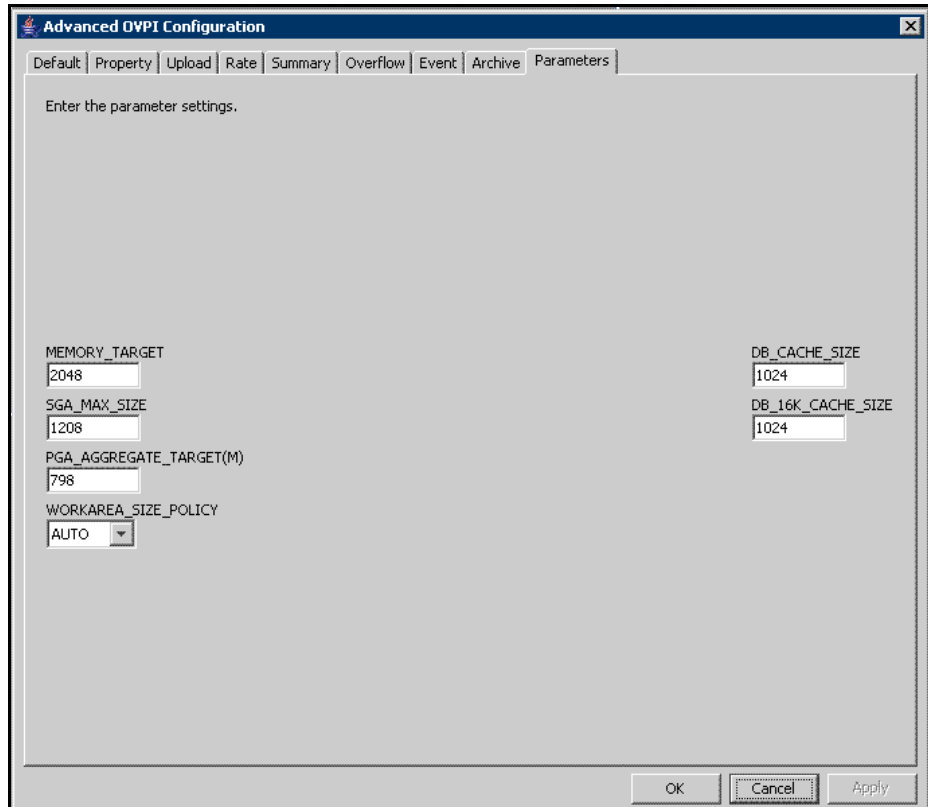
AUTOEXTEND SIZE: Type the size of the extend in MB. Specifying 0 for the extend size disables the Oracle autoextend feature.

Data Files (File Name and Size (MB): You must create at least one data file for each tablespace. Use logical names and descriptions; operating system maximums apply.

 - To add a data file, click **Add**. The DataFile Information window opens. Use the window to type the name of the data file and the size of the data file, and click **OK**.
 - To modify a data file, select the data file, and click **Modify**. The DataFile Information window opens. Use the window to change the name of data file, its size, or both, and click **OK**.
 - To remove a data file, select the data file, and click **Remove**.
 - Click **OK**. For 32-bit Linux and other UNIX platforms, the following window opens:



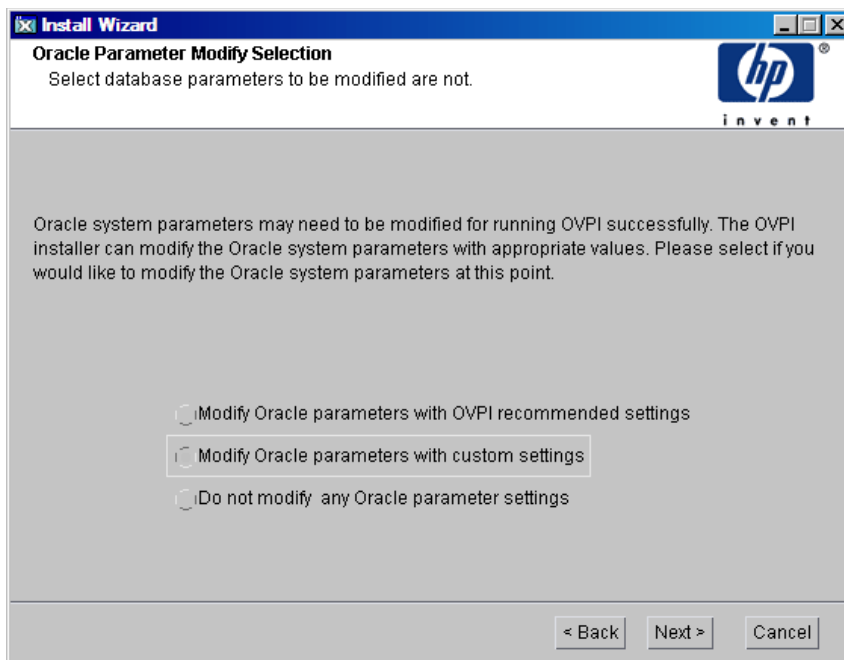
For 64-bit Linux platforms, the following window opens:



- c Click **OK** to return to the Oracle User and Tablespace Creation window.

Option 2:

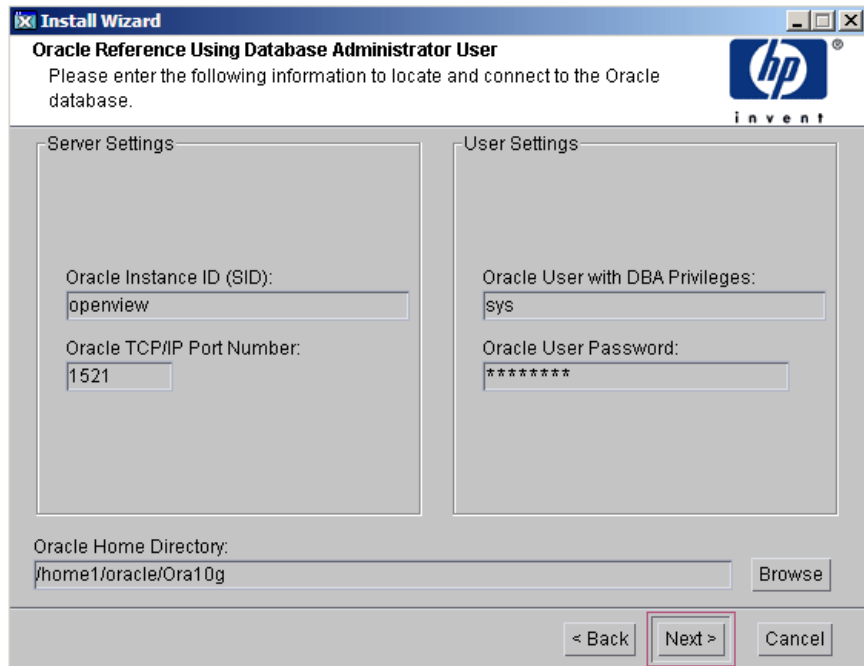
You can modify the parameters with custom settings. Select Modify Oracle parameters with custom settings.



- **MEMORY_TARGET:** Specify the Oracle system-wide usable memory. The database tunes memory to the MEMORY_TARGET value, reducing or enlarging the SGA and PGA as needed.
- **SGA_MAX_SIZE:** Determine the maximum amount of memory that is utilized by the Oracle database. This memory is shared memory and is used by all Oracle server processes.
- **PGA_AGGREGATE_TARGET (M):** Specify the target aggregate PGA memory available to all server processes associated with the instance. The default is 200M.
- **DB_FILE_MULTIBLOCK_READ_COUNT:** Specify the maximum number of blocks that should be read in one I/O operation when a sequential scan occurs in order to minimize I/O during table scans.
- **WORKAREA_SIZE_POLICY:** Specify the policy for sizing work areas to control the mode in which working areas are tuned. The default is AUTO. It is *not* recommended that you use MANUAL for the value.

- **DB_16K_CACHE_SIZE**: Specify the size of the DEFAULT buffer pool for buffers with the primary block size. The default is TRUE. It is *not* recommended that you use FALSE.
- **DB_32K_CACHE_SIZE**: Specify the size of the cache for 32K buffers.
- **PARALLEL_AUTOMATIC_TUNING**: Specify whether Oracle determines the default values for the parameters that control parallel execution.

- 1 Click **Next** to continue. The Oracle Reference using Database Administrator User window opens.



In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database. For more information on locating and connecting to the Oracle database, see [Locate and Connect to the Oracle Database](#) on page 138.

- 2 Click **Next** to continue. For 32-bit Linux and other UNIX platforms, the following Configure Oracle Parameters window opens:

The screenshot shows a window titled "Install Wizard" with a sub-header "Configure Oracle Parameters". Below the sub-header is the instruction "Enter Oracle database parameters for setting". In the top right corner, there is an HP logo and the word "invent" below it. The main area of the window contains several input fields for Oracle parameters:

- SGA_MAX_SIZE**: Input field containing "1228".
- PGA_AGGREGATE_TARGET(M)**: Input field containing "200".
- WORKAREA_SIZE_POLICY**: A dropdown menu currently set to "AUTO".
- DB_CACHE_SIZE**: Input field containing "512".
- DB_32K_CACHE_SIZE**: Input field containing "512".

At the bottom of the window, there are three buttons: "< Back", "Next >", and "Cancel". The "Next >" button is highlighted with a red rectangular border.

For 64-bit Linux platforms, the following Configure Oracle Parameters window opens:

The screenshot shows a window titled "Install Wizard" with the subtitle "Configure Oracle Parameters". Below the subtitle is the instruction "Enter Oracle database parameters for setting". The HP logo and the word "invent" are visible in the top right corner. The main area contains six parameter settings:

SGA_MAX_SIZE	1208	DB_CACHE_SIZE	512
MEMORY_TARGET	2048	DB_16k/32K_CACHE_SIZE	512
PGA_AGGREGATE_TARGET(M)	798	WORKAREA_SIZE_POLICY	AUTO

At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a dotted border), and "Cancel".

- Fill in the desired values (the graphic shows example values).

The values entered are recorded on the Advanced PI Configuration window as follows:

The screenshot shows a window titled "Advanced OVPI Configuration" with a tabbed interface. The "Parameters" tab is selected. The window contains a large text area with the instruction "Enter the parameter settings." Below this, several parameters are listed with their corresponding values entered in text boxes:

Parameter Name	Value
SGA_MAX_SIZE	1228
PGA_AGGREGATE_TARGET(M)	200
WORKAREA_SIZE_POLICY	AUTO <input checked="" type="checkbox"/>
DB_CACHE_SIZE	814
DB_32K_CACHE_SIZE	814

At the bottom right of the window, there are three buttons: "OK", "Cancel", and "Apply". The "OK" button is highlighted with a red rectangular box.

- b Click **Next**. The Oracle User and Tablespace Creation window opens.

Install Wizard

Oracle User and Tablespace Creation

Please enter the information necessary to create the OVPI user and tablespaces.

If you wish to customize each tablespace that will be created, select the Advanced button. Modifying the *Database Size* or *Data File Folder* fields on this page will override any Tablespace settings that have been entered via the Advanced button.

OVPI Tablespace Settings

Database Size: 1538 MB

Data File (.dbf) Folder: /dbs

OVPI DB User (dsi_dpiped)

Password:

Confirm Password:

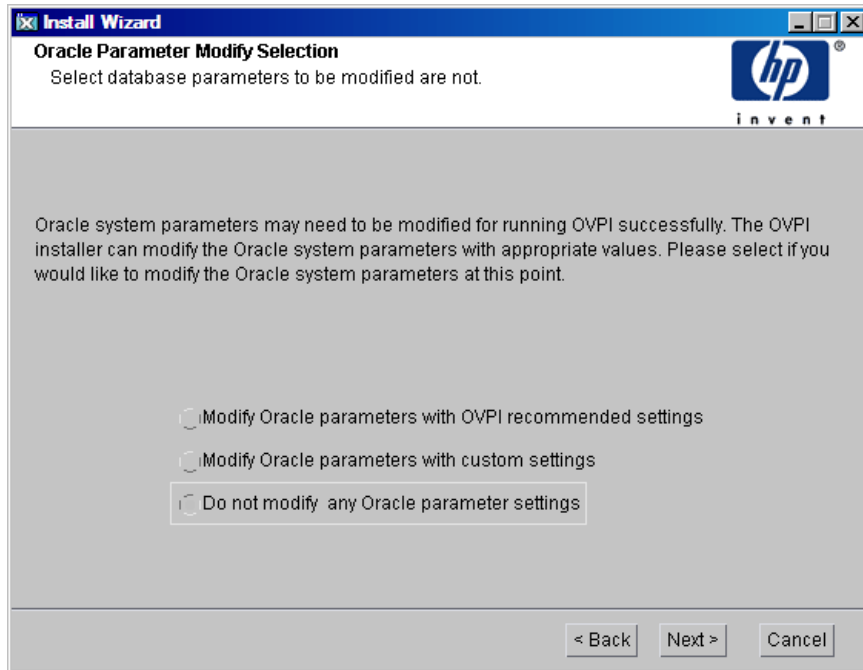
Click for advanced settings.

For more information on Oracle user and tablespace creation, see [Oracle User Account and Tablespace Creation](#) on page 139.

Option 3:

You can choose not to change any of the Oracle parameters.

Select **Do not modify any Oracle parameters settings**.



- 1 Click **Next** to continue. The Oracle Reference using Database Administrator User window opens.

Install Wizard
Oracle Reference Using Database Administrator User
Please enter the following information to locate and connect to the Oracle database.

Server Settings

Oracle Instance ID (SID):
openview

Oracle TCP/IP Port Number:
1521

User Settings

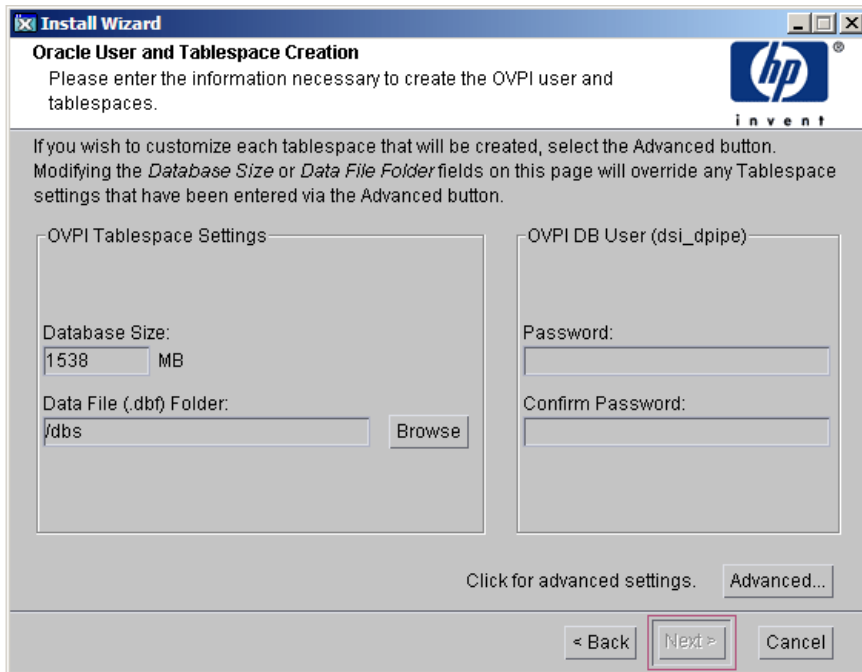
Oracle User with DBA Privileges:
sys

Oracle User Password:

Oracle Home Directory:
/home1/oracle/Ora10g

In the Oracle Reference Using Oracle Administrator User window, locate and connect to the Oracle database. For more information on locating and connecting to the Oracle database, see [Locate and Connect to the Oracle Database](#) on page 138.

- 2 Click **Next** to continue. The Oracle User and Tablespace Creation window opens.

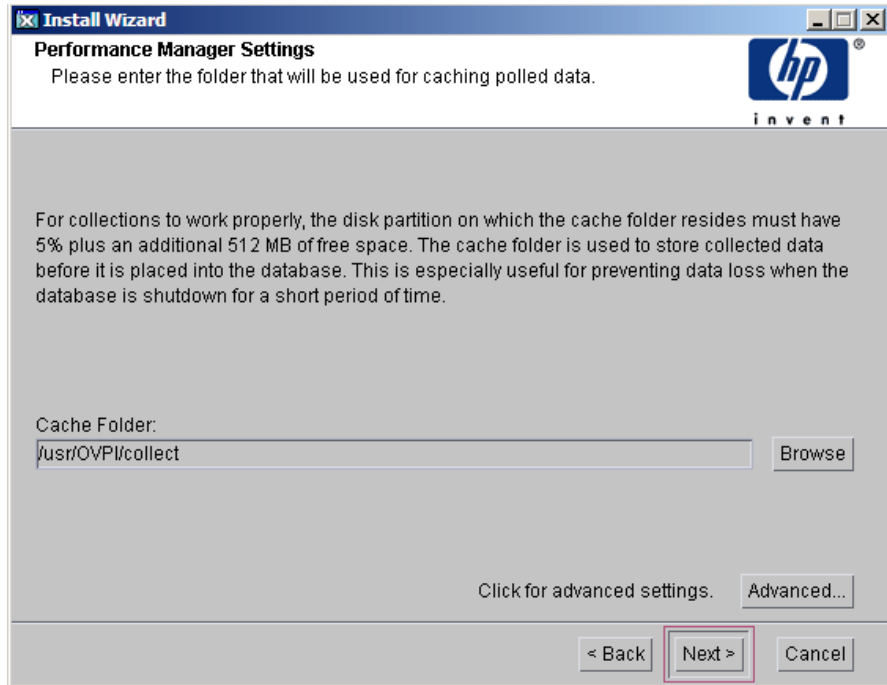


For more information on Oracle user and tablespace creation, see [Oracle User Account and Tablespace Creation](#) on page 139.

When the Oracle user account and tablespace creation is completed, click **Next**. The Performance Manager Settings window opens.

Task 8: Configure Polling Collections

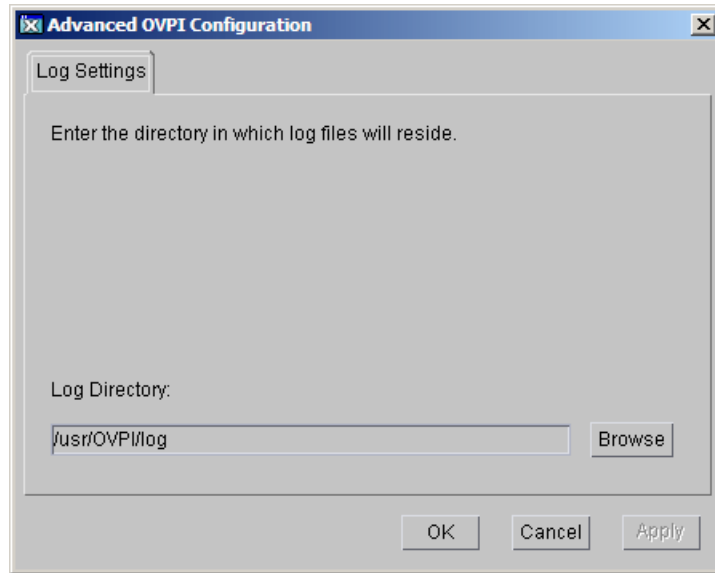
In the Performance Manager Settings window, identify the cache directory in which to store collected data before it is placed into the database. This can prevent data loss when the database is shut down for a short period.



- 1 Accept the default directory or type a fully-qualified directory path to be used for caching polled data.

For collections to work properly, the disk partition on which the cache directory resides must have 5% plus an additional 512 MB of free space. For example, if the disk partition is 10 GB, it must have 1 GB of free space.

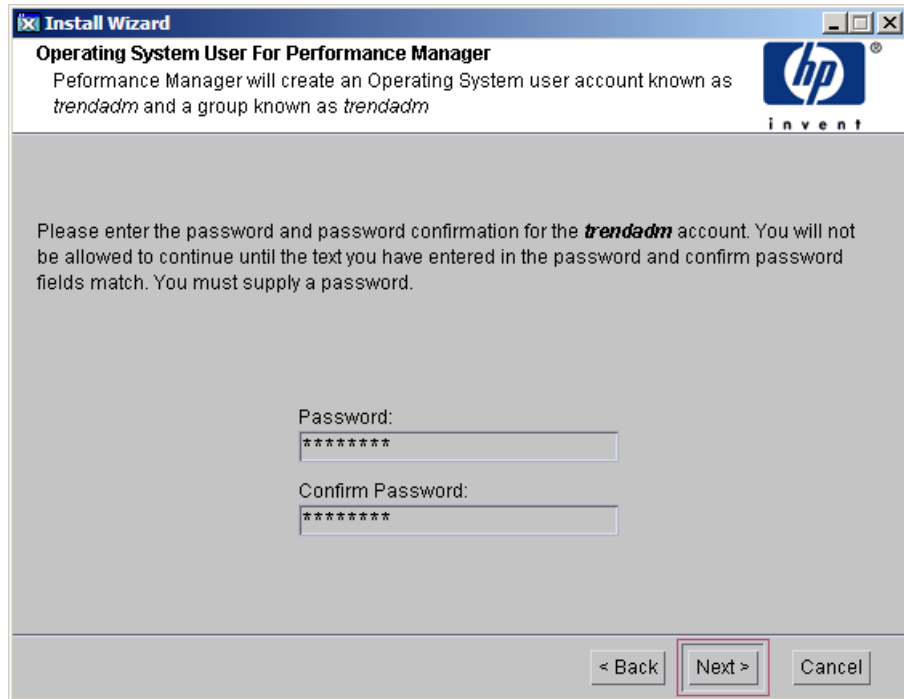
- 2 If needed, click **Advanced...** to open the Advanced PI Configuration window, where you can specify the directory in which the log files reside.



- a Accept the default path, which creates a log directory under the directory into which you installed PI (certain log files are maintained there, regardless of the directory you specify), or type the directory path in which the log files reside.
 - b Click **OK** to apply changes and return to the Performance Manager Settings window.
- 3 Click **Next** to continue.

Task 9: Create or Modify the Operating System Account

In the Operating System User for Performance Manager window, identify an operating system account and group named `trendadm`, whose purpose is to preserve the environment in which PI runs.



Install Wizard

Operating System User For Performance Manager

Performance Manager will create an Operating System user account known as `trendadm` and a group known as `trendadm`

Please enter the password and password confirmation for the `trendadm` account. You will not be allowed to continue until the text you have entered in the password and confirm password fields match. You must supply a password.

Password:

Confirm Password:

< Back **Next >** Cancel

Do not confuse the `trendadm` account used to log on to the operating system with the `trendadm` account created later, used to log on to the Web Access Server application.

The window prompts you for different information depending on whether the operating system and group account already exists.

- If the operating system account and group do not exist, the Create OS user window opens.

To create the operating system account and group:

- a Create a password for the `trendadm` account by typing values for the following:

- **Password:** The password must at minimum be one character in length, has no limit on maximum length, and may contain any character. Adhere to your company's policy for password creation.
- **Confirm Password:** Retype the password.
- b Click **Next** to continue.
- If the operating system account and group exist, the Existing OS User window opens.

To modify the operating system account's user environment:

- a Click one of the following:
 - **Modify user environment:** This parameter updates the trendadm account's .profile or .cshrc with the PI environment variables (COLLECT_HOME, DPIPE_HOME, DPIPE_TMP, and TREND_LOG).
 - **Do not modify user environment:** This parameter do not update the account's .profile or .cshrc with the PI environment variables. If you select this option, you must manually add the PI environment variables later.
- b Click **Next** to continue.

Task 10: Specify an Administrator and Port for the Web Access Server

In the Web Access Server Settings window, create a PI administrator account for the Web Access Server, as well as an HTTP port on which to listen.

The screenshot shows the 'Web Access Server Settings' window. The 'User Settings' section contains three input fields: 'Username' with the value 'trendadm', 'Password' with '*****', and 'Confirm Password' with '*****'. The 'Port Settings' section contains one input field: 'HTTP Port' with the value '80'. A red box highlights the 'Advanced...' button at the bottom right. Below the 'Advanced...' button are three buttons: '< Back', 'Next >', and 'Cancel'.

1 Type values for the following parameters:

- **Username:** Accept the default username for the Web Access Server administrator, or type a new name. This account is used to log on to the Web Access Server.

▶ Do not confuse this account with the trendadm account used for logging on the operating system (UNIX installations only), which is used to preserve the environment in which PI runs.

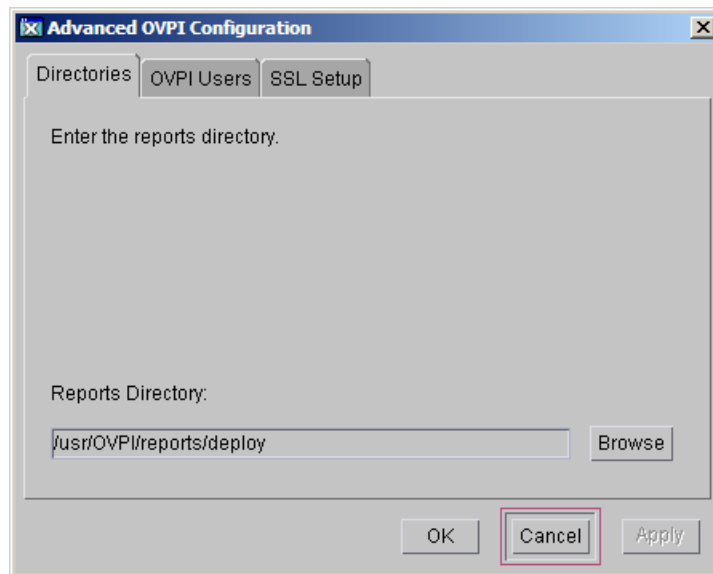
There are no restrictions on the minimum and maximum length or on the characters that can be used in the username and password. Adhere to your company's policy for username and password creation.

- **Password:** Type a password for the Web Access Server administrator account.

You can change password rules after you install PI using the Web Access Server application. See the *HP Performance Insight Administration Guide* for details.

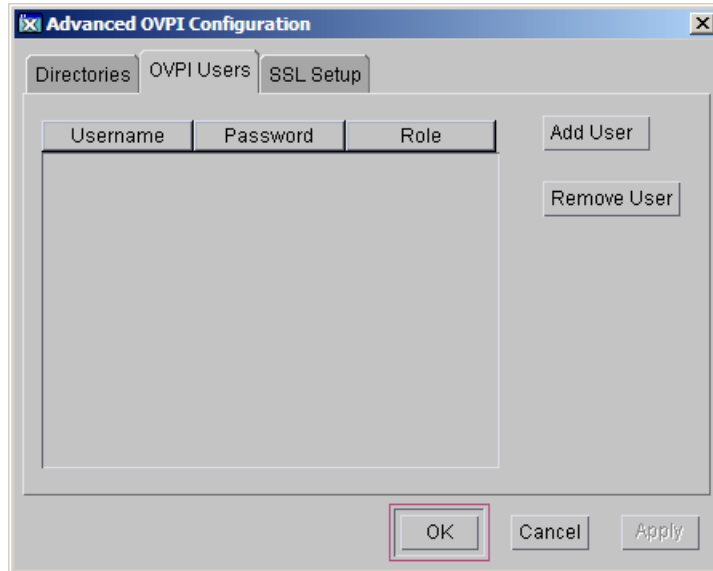
- **Confirm Password:** Retype the password.
 - **HTTP Port:** Accept the default port (80) or type a new port number for the Web Access Server. Any open port can be used.
- 2 If necessary, click **Advanced...** to open the Advanced Configuration window, in which you can select the following tabs:

Directories: Change the location of report directories in which all deployed reports are stored.



- a Accept the default directory or identify a new directory.
- b Click **Apply**.
- c Click **OK** to return to the Web Access Server Settings window.

OVPI Users: Create and modify user accounts used to log on to PI clients. You can create regular user accounts or administrator accounts. Regular user accounts can access the PI clients. Administrator accounts can access the administration features (Administration link) of the Web Access Server. See the *HP Performance Insight Administration Guide* for details.



To add or modify a user account:

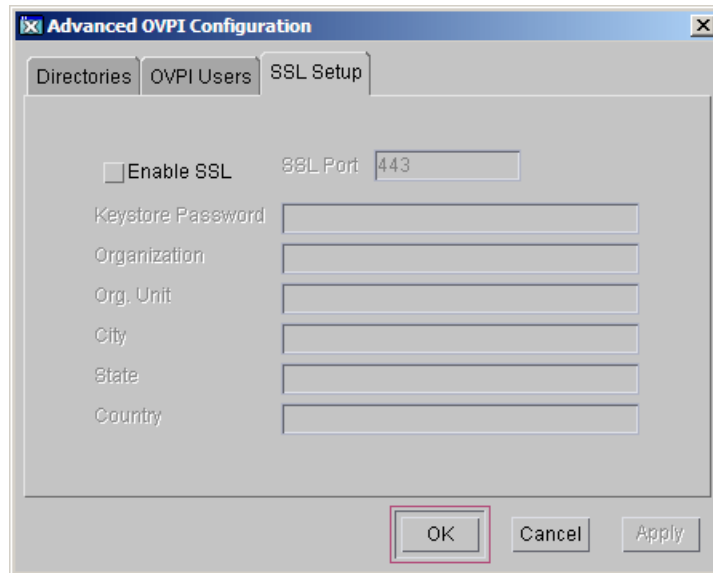
- a Click **Add User**. A default username (new-user), password (new-user), and role (user) displays, along with created user accounts.
- b Double-click the name or password, delete the value, and type a new value. Select either **user** or **admin** for Role.
- c Click **Apply**.

To remove a user account:

- a Select the user name and click **Remove User**.
- b Click **Apply** and then click **OK** to return to the Web Access Server Settings window.

You can also create, modify, and delete user accounts after you install PI using the Web Access Server. See the *HP Performance Insight Administration Guide* for details.

SSL Setup: Enable SSL communications to enable secure communication between the Web Access Server and a supported web browser, Report Viewer, Report Builder, and the Management Console. To enable SSL, you create a self-signed certificate. This self-signed certificate enables you to enable SSL, however, it is only valid for 90 days. You should send this certificate to a certificate authority in order to receive a signed digital certificate or generate another self-signed certificate before the 90 days expires. After you sign a digital certificate, you must import it using the Web Access Server application. You can also use the Web Access Server to change SSL settings after you install PI. See the *HP Performance Insight Administration Guide* for details.



To enable SSL communications and create a self-signed certificate:

- Click to select the **Enable SSL** check box.

By selecting this option, you will not disable the standard HTTP listener. Thus, the secured SSL port and the unsecured HTTP port are both enabled.

- **SSL Port:** Accept the default value or type a new value.
- **Keystore Password:** Type a password of six characters or more. Record the password and keep it in a secure place. You need it to generate a signed certificate.

After you generate your self-signed certificate, it is stored in the certificate repository. This password lets the Web Access Server access the certificate repository.

- b The remaining fields request information that is necessary when you generate an SSL key that must be verified and signed by a certificate-signing authority. This information is used by the person who checks the certificate to ensure that the certificate is valid.
 - **Organizations:** Optional. Type the name of your organization, for example, “ABC Systems, Inc.”
 - **Org. Unit:** Optional. Type the name of your department or division, for example, “Northeast Sales”.
 - **City:** Optional. Type the name of your city or locality, for example, “Los Angeles”.
 - **State:** Optional. Type the name of your state or province, for example, “California”.
 - **Country:** Required. Type your two-letter country code in the Country box, for example, “US”.
 - c Click **Apply**.
 - d Click **OK** to return to the Web Access Server Settings window.
- 3 Click **Next** to continue. The Summary window opens.

Task 11: Review the Installation Information

In the Summary window, review the installation selections.

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Install** to continue. The Installation Progress window opens.

Task 12: Finish the Installation

In the Installation Progress window you can view the status of the installation as it occurs. After the installation process is completed, information about whether the installation was successful is displayed.

- If the PI installation completed successfully, click **Done**.
- If the PI installation was unsuccessful:

- a Click **Details** at the bottom of the Installation Progress window for additional information.
- b Contact Support.

Task 13: Install other PI Components as Necessary

To install the Web Access Server, go to [Installing the Web Access Server](#) on page 162.

To install Remote Pollers, go to [Installing the Remote Poller Component](#) on page 171.

To install Client Applications, go to [Installing the PI Clients](#) on page 168.

Installing the Web Access Server

The database should be installed and running before you install the Web Access Server.


During installation, you are asked to provide the remote management server host name and port number. This enables the Installation Program to download database information from the database system. If you did not install the database, the installation continues. However, you must use the Management Console to configure the database system after the install.

Much of the procedure is the same as for installing the Web Access Server on a standalone system.

Task 1: Start the PI Installation Program

- 1 If you have not already started the PI installation program, start it now.
- 2 The Setup window opens. Select **PI 5.41** from the Install section of the window.
- 3 The Welcome window opens. Read the Welcome window and click **Next** to continue.

- 4 The License Agreement window opens. Accept the license agreement and click **Next** to continue.

 You must accept the license agreement to proceed. If you click **Cancel**, you are prompted to confirm your rejection of the license agreement and installation ends.

Task 2: Select the PI Components to Install

The Component Selection window opens. Use the window to select the components to install.

- 1 Click to select **Web Access Server** from the Install section of the window. Deselect any other components.
- 2 Click **Next** to continue.

Task 3: Specify an Installation Directory for the PI Components

If you already installed another PI component on this system, you have provided directory information. Continue to [Task 4](#) on page 164.

In the Destination Folder window, specify the directory to which the PI software is installed. The destination directory can be an NFS mounted directory, a UNIX soft link, or a UNIX hard link.


- 1 Accept the default destination directory, or identify a different directory. The path cannot contain any spaces.
 - If the destination directory does not already exist, the Installation Program creates it.
 - If the destination directory does exist and contains data, a message warns you that the directory is not empty.
 - If the destination directory is located on a file system that the Installation Program cannot access, a message warns you. You cannot continue the installation until you supply a valid destination.
- 2 Click **Next** to continue. The Database Selection window opens.

Task 4: Specify an Administrator and Port for the Web Access Server

The Web Access Server Settings window opens. Use the window to create a PI administrator account for the Web Access Server, as well as an HTTP port on which to listen.

1 Type values for the following parameters:

- **Username:** Accept the default username for the Web Access Server administrator, or type a new name. This account is used to log on to the Web Access Server.

 Do not confuse this account with the `trendadm` account used for logging on the operating system (UNIX installations only), which is used to preserve the environment in which PI runs.

There are no restrictions on the minimum and maximum length or on the characters that can be used in the username and password. Adhere to your company's policy for username and password creation.

- **Password:** Type a password for the Web Access Server administrator account.

You can change password rules after you install PI using the Web Access Server application. See the *HP Performance Insight Administration Guide* for details.

- **Confirm Password:** Retype the password.
- **HTTP Port:** Accept the default port (80) or type a new port number for the Web Access Server. Any open port can be used.

2 If needed, click **Advanced...** to open the Advanced Configuration window, where you can select the following tabs:

- **Directories:** To change the location of report directories, go to [Directories](#) on page 165.
- **PI Users:** To create and modify user accounts, go to [PI Users](#) on page 165.
- **SSL Setup:** To enable SSL communications, go to [SSL Setup](#) on page 165.

3 Click **Next** to continue.

Directories

The reports directory is where all deployed reports are stored. To change the location of the reports directories:

- 1 Accept the default directory or identify a new directory.
- 2 Click **Apply**.
- 3 Click **OK** to return to the Web Access Server Settings window.

PI Users

User accounts are used to log on to the following PI Clients: Management Console, Report Builder, Report Viewer, and Web Access Server.

You can create regular user accounts or administrator accounts. Regular user accounts can access the PI Clients. Administrator accounts can access the administration features (Administration link) of the Web Access Server. See the *HP Performance Insight Administration Guide* for details.

To add or modify a user account:

- 1 Click **Add User**. A default username (new-user), password (new-user), and role (user) displays, along with created user accounts.
- 2 Double-click the name or password, delete the value, and type a new value. Select either **user** or **admin** for Role.
- 3 Click **Apply**.

To remove a user account:

- 1 Select the user name.
- 2 Click **Remove User**.
- 3 Click **Apply**.
- 4 Click **OK** to return to the Web Access Server Settings window.

You can also create, modify, and delete user accounts after you install PI using the Web Access Server. See the *HP Performance Insight Administration Guide* for details.

SSL Setup

You can use SSL to enable secure communication between the Web Access Server and a supported Web browser, Report Viewer, Report Builder, and the Management Console.

To enable SSL, you create a self-signed certificate. This self-signed certificate enables you to enable SSL, however, it is only valid for 90 days. You should send this certificate to a certificate authority in order to receive a signed digital certificate or generate another self-signed certificate before the 90 days expires.

After you have a signed digital certificate, you must import it using the Web Access Server application. Additionally, you can use the Web Access Server to change SSL settings after you install PI. See the *HP Performance Insight Administration Guide* for details.

To enable SSL communications and create a self-signed certificate:

- 1 Click to select the **Enable SSL** check box.

By selecting this option, you will not disable the standard HTTP listener, which means that the secured SSL port and the unsecured HTTP port are both enabled.

- **SSL Port:** Accept the default value or type a new value.
- **Keystore Password:** Type a password of six characters or more. Record the password and keep it in a secure place; you need it to generate a signed certificate.

After you generate your self-signed certificate, it is stored in the certificate repository. This password lets the Web Access Server access the certificate repository.

The remaining fields request information that is necessary when you generate an SSL key that must be verified and signed by a certificate-signing authority. This information is used by the person who checks the certificate to ensure that the certificate is valid.

- **Organization:** Optional. Type the name of your organization, for example, “ABC Systems, Inc.”
- **Org. Unit:** Optional. Type the name of your department or division, for example, “Northeast Sales”.
- **City:** Optional. Type the name of your city or locality, for example, “Los Angeles”.
- **State:** Optional. Type the name of your state or province, for example, “California”.
- **Country:** Required. Type your two-letter country code in the Country box, for example, “US”.

- 2 Click **Apply**.
- 3 Click **OK** to return to the Web Access Server Settings window.

Supply information about the remote database.

The Remote Management Server Settings window opens. Use the window to supply information necessary to locate and download system information necessary to connect to your remote PI database.

- 1 Specify information for the following parameters:
 - **Remote Management Server Host:** Type the name of the database host.
 - **Remote Management Server Port:** Type the HTTP port number for the database host.

If the system fails to connect to the database to obtain database information, a warning message displays. The PI database and the Oracle Listener program must be running before you continue. (If you continue the installation, you must use the Management Console to set up the database connection after the installation finishes.)

- 2 Click **Next** to continue.

Task 5: Review the Installation Information

In the Summary window, review the installation selections.

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Install** to continue. The Installation Progress window opens.

Task 6: Finish the Installation

In the Installation Progress window you can view the status of the installation as it occurs. After the installation process is completed, information about whether the installation was successful is displayed.

- If the PI installation completed successfully, click **Done**.
- If the PI installation was unsuccessful:
 - Click **Details** at the bottom of the Installation Progress window for additional information.

- b Contact Support. See [Support](#) on page 5.

Task 7: [Install other PI Components as Necessary](#)

To install Client Applications, see [Installing the PI Clients](#) on page 168.

To install Remote Pollers, see [Installing the Remote Poller Component](#) on page 171.

Installing the PI Clients

PI Clients provide the interface between PI and its users, and are installed as a group on any system connected to the network. For a list of the PI Clients, see [PI Clients](#) on page 21.

Task 1: [Start the PI Installation Program](#)

- 1 If you have not already started the PI Installation Program, start it now.
- 2 The Setup window opens. Select **PI 5.41** from the Install section of the window.
- 3 The Welcome window opens. Read the Welcome window and click **Next** to continue.
- 4 The License Agreement window opens. Accept the license agreement and click **Next** to continue.



You must accept the license agreement to proceed. If you click **Cancel**, you are prompted to confirm your rejection of the license agreement and installation ends.

Task 2: [Select the PI Components to Install](#)

The Component Selection window opens. Use the window to select the components to install.

- 1 Click to select **PI Clients** from the Install section of the window. Deselect any other components.
- 2 Click **Next** to continue.

Task 3: Specify an Installation Directory for the PI Software



If you have already installed another PI component on this system, you have provided directory information. Continue to [Task 4](#) on page 169.

In the Destination Folder window, specify the directory to which the PI software is installed. The destination directory can be an NFS mounted directory, a UNIX soft link, or a UNIX hard link.

- 1 Accept the default destination directory, or identify a different directory. The path cannot contain any spaces.
 - If the destination directory does not already exist, the Installation Program creates it.
 - If the destination directory does exist and contains data, a message warns you that the directory is not empty.
 - If the destination directory is located on a file system that the Installation Program cannot access, a message warns you. You cannot continue the installation until you supply a valid destination.
- 2 Click **Next** to continue. The Database Selection window opens.

Task 4: Specify the Information Needed to Access the Web Access Server

The Remote Web Access Server Settings window opens. Use the window to enter information about where the Web Access Server is installed.

- 1 Accept the defaults or specify values for the following parameters:
 - **Web Access Server Host:** Type the name of the Web Access Server.
 - **Web Access Server Port:** Type the port number for the Web Access Server.
- 2 Click **Next** to continue.

Task 5: Review the Installation Information

In the Summary window, review the installation selections.

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Install** to continue. The Installation Progress window opens.

Task 6: Finish the Installation

In the Installation Progress window you can view the status of the installation as it occurs. After the installation process is completed, information about whether the installation was successful is displayed.

- If the PI installation completed successfully, click **Done**.
- If the PI installation was unsuccessful:
 - a Click **Details** at the bottom of the Installation Progress window for additional information.
 - b Contact Support.

Task 7: Install other PI Components as Necessary

To install Remote Pollers, go to [Installing the Remote Poller Component](#) on page 171.

Installing the Remote Poller Component

If you already installed PI Performance Manager on *this* system, you do not need to install the Remote Poller component. It is installed with PI Performance Manager. **Remote Poller systems do not use Performance Manager.**

Task 1: Start the PI Installation Program

- 1 If you have not already started the PI installation program, start it now.
- 2 The Setup window opens. Select **Remote Poller** from the Install section of the window.
- 3 The Welcome window opens. Read the Welcome window and click **Next** to continue.

The License Agreement window opens. Accept the license agreement and click **Next** to continue. You must accept the license agreement to proceed. If you click **Cancel**, you are prompted to confirm your rejection of the license agreement and installation ends.

Task 2: Specify an Installation Directory for the PI Components



If you already installed another PI component on this system, you provided directory information. Continue to [Task 3](#) on page 172.

In the Destination Folder window, specify the directory to which the PI software is installed. The destination directory can be an NFS mounted directory, a UNIX soft link, or a UNIX hard link.

- 1 Accept the default destination directory, or identify a different directory. The path cannot contain any spaces.
 - If the destination directory does not already exist, the Installation Program creates it.
 - If the destination directory does exist and contains data, a message warns you that the directory is not empty.
 - If the destination directory is located on a file system that the Installation Program cannot access, a message warns you. You cannot continue the installation until you supply a valid destination.
- 2 Click **Next** to continue. The Database Selection window opens.

Task 3: Supply Information About the Database

The Remote Management Server Settings window opens. Use the window to supply information necessary to locate and download system information necessary to connect to your remote PI database.

- 1 Specify information for the following parameters:
 - **Remote Management Server Host:** Type the name of the database host.
 - **Remote Management Server Port:** Type the HTTP port number for the database host.

This information is used to allow the remote poller system to automatically connect with the PI server running Performance Manager. The first time they connect, an information block is downloaded from the PI server and saved.

Task 4: Configure Polling Collections

The Performance Manager Settings window opens. Use this window to identify the cache directory used to store collected data before it is placed into the database. This can prevent data loss when the database is shut down for a short period.

- 1 Accept the default directory or type a fully-qualified directory path to be used for caching polled data.
 - ▶ For collections to work properly, the disk partition on which the cache directory resides must have 5% plus an additional 512 MB of free space. For example, if the disk partition is 10 GB, it must have 1 GB of free space.
- 2 If needed, click **Advanced** to open the Advanced PI Configuration window, where you can specify the directory in which the log files reside.
 - a Accept the default path, which creates a log directory under the directory into which you installed PI (certain log files are maintained there, regardless of the directory you specify), or type the directory path in which the log files reside.
 - b Click **OK** to apply changes and return to the Performance Manager Settings window.
- 3 Click **Next** to continue.

Task 5: Create or Modify the Operating System Account

The Operating System User for Performance Manager window opens. Use the window to identify the operating system account and group named trendadm, whose purpose is to preserve the environment in which PI runs.



Do not confuse the trendadm account used to log on to the operating system with the trendadm account created later, used to log on to the Web Access Server application.

The window prompts you for different information depending on whether the operating system and group account already exist.

- If the operating system account and group do not exist, the Create OS user window opens.

To create a password for the trendadm account by typing values for the following:

- Password:** The password must at minimum be one character in length, has no limit on maximum length, and may contain any character. Adhere to your company's policy for password creation.
- Confirm Password:** Retype the password.

Click **Next** to continue.

- If the operating system account and group exist, the Existing OS User window opens.

Click one of the following:

- **Modify user environment:** This parameter updates the trendadm account's .profile or .cshrc with the PI environment variables (COLLECT_HOME, DPIPE_HOME, DPIPE_TMP, and TREND_LOG).
- **Do not modify user environment:** This parameter do not update the account's .profile or .cshrc with the PI environment variables. If you select this option, you must manually add the PI environment variables later.

Click **Next** to continue.

Task 6: Review the Installation Information

In the Summary window, review the installation selections.

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Install** to continue. The Installation Progress window opens.

Task 7: Finish the Installation

In the Installation Progress window you can view the status of the installation as it occurs. After the installation process is completed, information about whether the installation was successful is displayed.

- If the PI installation completed successfully, click **Done**.
- If the PI installation was unsuccessful:
 - a Click **Details** at the bottom of the Installation Progress window for additional information.
 - b Contact Support. See, [Support](#) on page 5.

The Remote Poller does not poll devices until you configure its polling policy. To configure the polling policy, use the Polling Policies application in the Management Console. For more information, see the *HP Performance Insight Administration Guide*.

Installing PI Clients Only

You can install only the PI Clients on any system in a standalone or distributed environment without installing any other PI components on that system. This type of install is termed a client-only install, and gives users the ability to access the Web Access Server for reporting and administration capabilities from local workstations.

In a client-only installation, you cannot use the following applications from the Management Console Tools menu: Catalog Manager, MIB Browser, SNMP Discovery, Type Discovery, and Package Manager. You cannot register a new data table, property table, or automatically add a collection to the database. For full functionality, PI Performance Manager must also be installed.

To install the clients only, follow the instructions provided at [Installing the PI Clients](#) on page 168.

8 Post-Installation

Apply Patch

After you install PI, you should check for the patches required for your PI system.

You must have an HP Passport ID to access patch. For information about how to obtain an HP Passport ID, see [Support](#) on page 5.

To locate the most recent patch for this release

- 1 Go to the following url:

www.hp.com/go/hpsoftwaresupport

- 2 Click **Software patches**.

The HP Passport sign-in window opens.

- 3 Type your HP Passport ID and log on.

- 4 Navigate to the Performance Insight software patches and download the appropriate patch version depending on your operating system.

Use a Common Character Set Across Distributed Systems

In a distributed configuration, the central database server, satellite database servers, and polling systems can be different platforms. Because the default database character sets may differ between operating systems, make sure that all database instances and PI clients use a common character set.

Root Permission for Certificate Management Application

The Certificate Management application uses `ovcert` and `ovconfchg` programs present in the `/opt/OV/bin` directory. These programs are used for managing security certificates on the system. For more information, see the *HP Performance Insight 5.41 Administration Guide*. Root privilege is required to run these programs. Because the Certificate Management application is typically launched by **trendadm** user who has no root privileges, run the `ovswitchuser.sh` script using the command,

```
/opt/OV/bin/ovswitchuser.sh -existinguser trendadm  
-existinggroup trendadm
```

If you plan to run the programs manually, you do not need to run the script.

Tasks to perform before installing Report Packs



Perform these tasks only for Oracle 10g.

On Unix platform, before installing Report Packs, you must run the `changePerm.sh` script using the steps:

- 1 Login as Oracle user.
- 2 Change to the directory `{ORACLE_HOME}/install`.
- 3 Run the script `changePerm.sh`.



Perform the following tasks only for Linux 64-bit platform.

Some report packs require a few additional 64-bit compiled perl modules. These modules are shipped with OVPI and are available at the location, `$DPIPE_HOME/data`. Extract these modules manually and place them under appropriate perl modules locations.

To do this, perform the following steps:

- 1 Login as **root** user.
- 2 Unzip the additional perl module bundle:

```
cd $DPIPE_HOME/data  
gunzip HPPI_perl_addon.tar.gz
```
- 3 Extract the perl modules under appropriate perl install location:

```
cd /opt/OV  
tar -xvf $DPIPE_HOME/data/HPPI_perl_addon.tar
```

Perform Configuration Tasks

The immediate configuration tasks you must perform include the following:

- 1 Install the report packs on the central database server and deploy them to the Web Access Server.

A report pack is a collection of reports that analyze performance data. A datapipe contains directives for PI to use when collecting the data. Installing the datapipe configures PI to collect a specific type of performance data at a specific polling interval. Installing the report pack configures PI to summarize and aggregate the data collected by the datapipe. To install report packs and datapipes, use the PI Package Manager, an application supplied by the Management Console client application. There are many types of reports to choose from. Advanced users also have the option of creating their own reports. Before installing any report pack, see the user guide for the report pack.

Each report pack creates some tables to store and analyze collected data. If Oracle partitioning option is enabled, each table contains a number of partitions. Number of partition depends upon type of data that is stored in the table. For example, raw or rate or hourly tables have partitions for each hour. Similarly, daily tables have partitions for each day. Therefore, when you install report packs, even if no data is collected, considerable amount of database space is utilized for partition creation. Make sure sufficient database space is available before installing report packs. After Performance Insight starts collecting data, the system comes to an equilibrium in terms of space when `db_delete_data` ages or deletes older data and partitions.

If your configuration has more than one Web Access Server, deploy the reports to each one. Do not install datapipes on the central database server unless the central server is polling.

- 2 Discover the network on the satellite database servers for those nodes that you plan to poll. The discovery process involves running a utility that determines if there is a device at a specific IP address, if the device is SNMP-manageable, and if so, what kind of device it is (router, hub, or switch). This information is used to populate and update tables in the PI database instance.

- 3 Install report packs and datapipes on the satellite database servers, but do not deploy them. Make sure to install the same report packages on the satellite database servers that you installed on the central database server. Disable polling if a satellite database server is not going to be polling devices.
- 4 Run type discovery on the satellite database servers.
- 5 In a distributed configuration, configure report packs and polling policies for the distributed configuration. For example, you must modify the report package polling policies, located on the satellite database servers, so that the policies are collecting data from the system on which the remote poller component is located.
- 6 Disable GATHER_STATS_JOB. (Applicable only for Oracle 10g)

GATHER_STATS_JOB is created automatically by Oracle when you create the database. It is managed by the Scheduler.

GATHER_STATS_JOBS can result in poor performance of trendpm, cause PI processes to hang, index corruption and overall poor performance.

PI has a similar but more robust function called indexmaint. To obtain better performance from PI, you must disable GATHER_STATS_JOB.

To verify whether GATHER_STATS_JOB is enabled, run the following query:

```
SELECT STATE FROM DBA_SCHEDULER_JOBS WHERE JOB_NAME =  
'GATHER_STATS_JOB' ;
```

If the state returned is SCHEDULED, disable GATHER_STATS_JOB using the `dbms_scheduler.disable` procedure as follows:

```
EXEC dbms_scheduler.disable('GATHER_STATS_JOB');
```



You can re-enable the GATHER_STATS_JOB using the `dbms_scheduler.enable` procedure as follows:

```
EXEC dbms_scheduler.enable('GATHER_STATS_JOB');
```

- 7 Other types of configuration tasks include the following:
 - Configuring the trendtimer utility to schedule activities to run at specific times
 - Creating data collections (types and sources of data)
 - Configuring polling policies

- Configuring users and groups
- Creating views for presenting data
- Configuring the Web Access Server
- Configuring the PI database
- Scheduling and generating reports

All configuration tasks are explained in detail in the *HP Performance Insight Administration Guide*. You should read this guide immediately following PI installation.

Back Up Your System

After you install PI, you should back up both the database and the PI installation. For instructions, see the *HP Performance Insight Administration Guide*.

Confirm that PI is Running and Collecting Data

To verify that PI is running and collecting data:

Type the following at the command line:

```
ps -ef | grep trendtimer
```

The output looks similar to the following:

```
trendadm 1755      1  0  Apr 13  ?           0:10 /usr/OVPI/bin/  
trendtimer -s /usr/OVPI/lib/trendtimer.sched
```

If the process is not listed, trendtimer is not running. The path of program depends on where PI is installed.

You can also verify the jboss process (OVPI HTTP Server service on Windows). Although jboss is not required for PI to collect data successfully, it is required for activities using the web server. For example, to view reports.

Type either of the following commands:

```
ps -ef | grep java
```

The output looks similar to the following:

```
root 22284 22271 0 06:28:04 ? 10:11 /opt/OV/nonOV/jdk/b/bin/java  
-Dprogram.name=run.sh -server -Xms32m -Xmx256m .....
```

```
ps -ef | grep -i jboss
```

The output looks similar to the following:

```
root 11250 11191 0 Jul10 pts/1 00:06:30 /opt/OV/nonOV/jdk/b/bin/  
java -Dprogram.name=run.sh -server -Xms32m -Xmx256m  
-Dtrend.home=/usr/OVPI -Dfile.encoding=UTF-8  
-Djava.awt.headless=true .....
```

If the process is not listed, the web server is not running. The path of program depends on where PI is installed.

Install JBoss 4.2.3



For 64-bit Linux platform, you do not have to install JBoss version 4.2.3 as it is installed by default.

PI 5.41 installs JBoss version 4.0.5 by default for 32-bit Linux and other UNIX platforms. After installing PI 5.41, install JBoss version 4.2.3 to ensure that the latest JBoss security fix is applied.

You can retain the JBoss 4.0.5 folders and files. These will not impact the performance of PI.

To install JBoss 4.2.3, log in as root user and run the following command from the command prompt:

```
/opt/OV/nonOV/jdk/b/bin/java -cp $DPIPE_HOME/lib/piweb.jar
-Djava.library.path="$DPIPE_HOME/bin;$DPIPE_HOME/lib"
-Dtrend.home="$DPIPE_HOME" -Dinstaller.home="<Installation
Directory>" com.trinagy.config.install.JBoss423Setup
```



The above command is a one line command. Copy and paste the command in a notepad and remove the extra lines before pasting it in the command prompt window.

In this instance, *<Installation_Directory>* is the directory where the PI installables are located and *\$DPIPE_HOME* is the directory where you installed PI.

Example:

```
/opt/OV/nonOV/jdk/b/bin/java -cp $DPIPE_HOME/lib/piweb.jar
-Djava.library.path="$DPIPE_HOME/bin;$DPIPE_HOME/lib"
-Dtrend.home="$DPIPE_HOME" -Dinstaller.home="/pidepot"
com.trinagy.config.install.JBoss423Setup
```

JBoss 4.2.3 is installed in the `/opt/OV/nonOV/PiJBoss/4.23.000` folder.

Troubleshooting PI Installation Problems

PI Log Files

All PI log files are located at `$TREND_LOG/`.

The log file used during installation is named `install.log`. If you have problems during installation, check this log.

9 Upgrading to Oracle 10g Enterprise Edition

If you are using Oracle 9i, you must upgrade to Oracle 10g version 10.2.0.4 by following these steps:

- 1 Install Oracle10g in different folder from the home folder of Oracle 9i.
 - a Select the Unicode (AL32UTF8) character set during the installation.
 - b Apply the 10.2.0.4 patch.
 - c Upgrade the Oracle 9i database to Oracle 10g using the Oracle Database Upgrade Assistant.

See the *Oracle Database Upgrade Guide 10g Release 2* for complete installation and upgrade instructions.

- 2 Edit the `config.prp` file.
 - a Find the `config.prp` file, which is located in the `$DPIPE_HOME/data/` directory.
 - b Open the file using a text editor and change the `oracle.home` entry to point to the directory where Oracle 10g is installed.
 - c Save the `config.prp` file.

- 3 Verify path.

Edit the environment variable `PATH` to ensure that the Oracle10g install path is the one referenced instead of the install path used for Oracle 9i.

Open the `env.properties` file and change the value of `ORACLE_HOME`.

The environment variable `ORACLE_HOME` should reference the Oracle10g home.

- 4 Run the `changePerm.sh` script located in the `ORACLE_HOME/install` directory.
- 5 Restart the PI Timer.

- 6 Stop the Oracle 9i listener and start the Oracle 10g listener.
- 7 Verify that the `$ORACLE_HOME/network/admin/sqlnet.ora` has the following entry:


```
NAMES.DIRECTORY_PATH= (TNSNAMES, HOSTNAME, ONAMES)
```
- 8 Close all sql sessions before upgrading to PI 5.41. Otherwise, the PI 5.41 Upgrade Wizard returns a pop-up asking you to close all open sql sessions and then retry.
- 9 Stop the 10g Database Control service.
- 10 Turn off the recycle bin.

To turn off the recycle bin:

 - a Log into sqlplus as sys user.
 - b Run the command


```
alter system set recyclebin=off scope=both;
```
 - c Restart the Oracle if you have already started Oracle.

Upgrading a Remote Oracle Database

Perform steps 1 through 7 as provided above. After the database is upgraded, perform the following steps to create the new tablespaces specific to PI 5.41.

Create tablespaces for Archive and Event on the remote Oracle database explicitly. For a remote Oracle installation, you must create tablespaces for Archive and Event on the Remote Oracle database explicitly. To create the Archive and Event tablespaces on the remote Oracle database run the **Upgrade scripts**. Upgrade scripts are present in your PI DVD under the folder **Extract**→**Util**.

Running the Upgrade Schema Scripts

- 1 Log into sqlplus as dsi_dpipe user.
- 2 Run the command `upgrade_schema_sun_hpux.sql` (for HP-UX and Solaris) and `upgrade_schema_win_lin.sql` (for Linux).

The upgrade schema scripts create the following tablespaces:

- `dpipe_archive_seg`
- `dpipe_archive_ind_seg`

- dpipe_event_seg
- dpipe_event_ind_seg

Verify Connection before Upgrading to PI 5.41

Open a sqlplus session on the remote Oracle machine to verify the setup. The version should be Oracle 10.2.

Verify connectivity from the Oracle client to the remote database by starting a sqlplus session.

10 Upgrading to Oracle 11gR2 Enterprise Edition

If you are using Oracle 10G (10.2.0.3 or later patches), you must upgrade to Oracle 11gR2 version (11.2.0.1) by following these steps:

- 1 Install Oracle11gR2 in a different folder from the home folder of Oracle 10g.



Before you upgrade the database, ensure that you have stopped all `ovpi` processes and the `trendtimer`.

- 2 Upgrade the Oracle 10g database to Oracle 11gR2 using the Oracle Database Upgrade Assistant.

See the *Oracle Database Upgrade Guide 11g Release 2* for complete installation and upgrade instructions.

- 3 Edit the `config.prp` file.

- a Find the `config.prp` file, which is located in the `$DPIPE_HOME/data/` directory.
- b Open the file using a text editor and change the `oracle.home` entry to point to the directory where Oracle 11g R2 is installed.
- c Save the `config.prp` file.

- 4 Verify path.

Edit the environment variable `PATH` to ensure that the Oracle11g install path is the one referenced instead of the install path used for Oracle 10g.

Open the `env.properties` file and change the value of `ORACLE_HOME`.

The environment variable `ORACLE_HOME` should reference the Oracle11g home.

- 5 Copy the pre-upgrade (oracle 10g) version of the `listener.ora` and `tnsnames.ora` files from the pre-upgrade (oracle 10g) `ORACLE_HOME` location to the new (oracle 11gR2) `ORACLE_HOME` location.

- 6 Stop the Oracle 10g listener and start the Oracle 11g listener.
- 7 Verify that the `$ORACLE_HOME/network/admin/sqlnet.ora` has the following entry:

```
NAMES.DIRECTORY_PATH= (TNSNAMES, HOSTNAME, ONAMES)
```

- 8 Restart the PI Timer.

11 Upgrading From PI 5.10 to PI 5.41

You can upgrade to PI 5.41 if you currently have the following version of PI:

- PI 5.10.010 or above

You can upgrade to PI 5.41 if you have a standalone or a distributed environment. The installation process provided in this section applies to all environments. However, if you have a distributed environment, you must first upgrade your database schema. The instructions can be found in [Chapter 9, Upgrading to Oracle 10g Enterprise Edition](#). After you have upgraded your database, you can install the distributed components in any order.

The remote poller is upgraded separately from PI but the procedure is the same.



You must upgrade to Oracle 10g before you upgrade PI.

Pre-Upgrade Tasks

Task 1: Install Java Patches

You must install the appropriate Java patches required for your operating system. PI 5.41 includes Java 1.5, which automatically gets installed on your system during PI installation in a separate folder. (See [Install all the Patches Required for Java](#) on page 35).

Task 2: Stop the OVPI Timer

Stop the OVPI Timer on all systems (including remote pollers) connected to the PI server or database being upgraded. For details on how to stop and start the Timer, see *HP Performance Insight Administration Guide*.

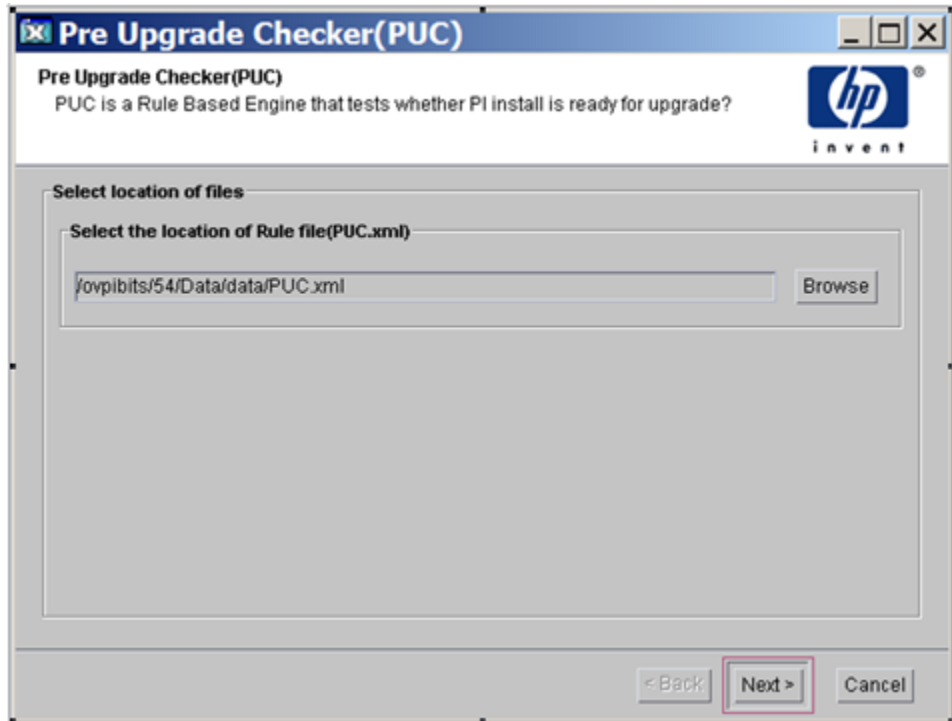
Task 3: (Optional) Run the Pre Upgrade Checker

The Pre Upgrade Checker (PUC) is a new functionality introduced with PI 5.41 upgrade. This is not a mandatory task, but running the PUC helps you to avoid possible errors during upgrade.

PUC is a rule-based engine that can perform some pre-defined tests detailed in an XML file. These tests check for the existence or non-existence of pre-defined conditions and show the status of your environment's suitability for upgrade.

To run the PUC:

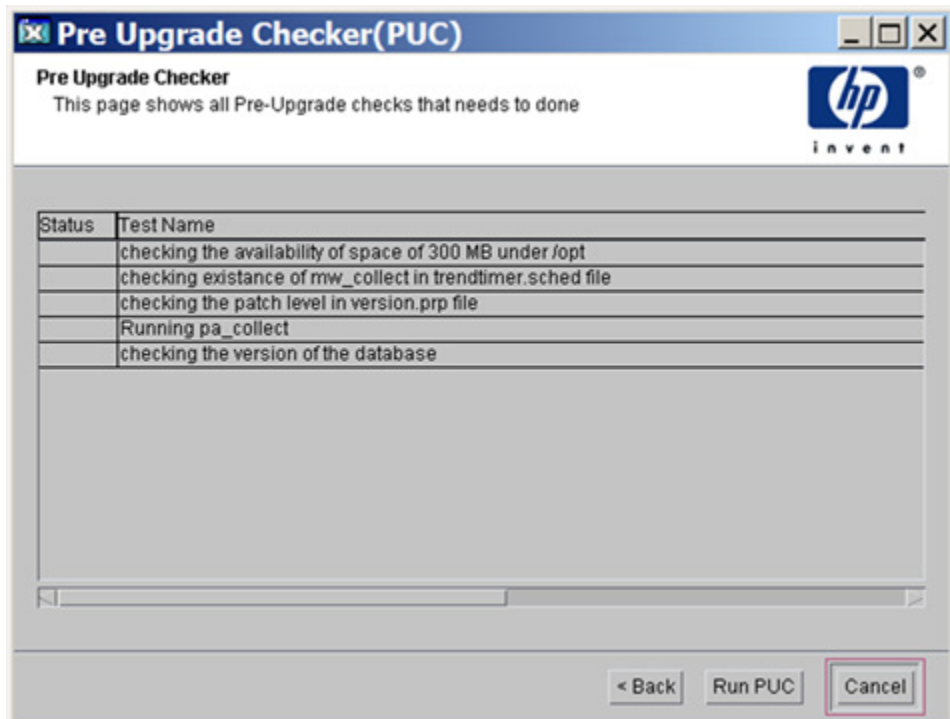
- 1 Start the PI installation program. The Setup Utilities window opens.
- 2 Select **Pre Upgrade Checker** from the Upgrade section of the Setup Utilities window. The Pre Upgrade Checker (PUC) window opens.



- 3 Click browse to locate the PUC .xml file on your local system.

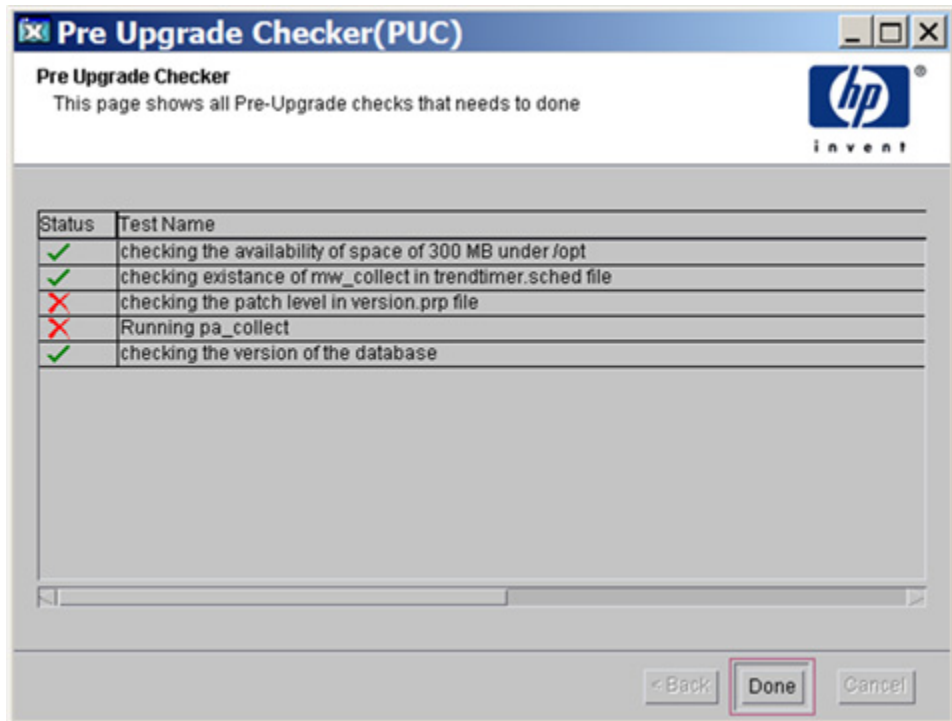
PUC.xml contains a set of pre-defined tests that are run to validate your setup. Download PUC.xml from www.hp.com/go/hpsoftwaresupport (search for id number **KM528404**) and save it on your local system.

- 4 Click **Next**. A window with the list of tests to be performed appears.

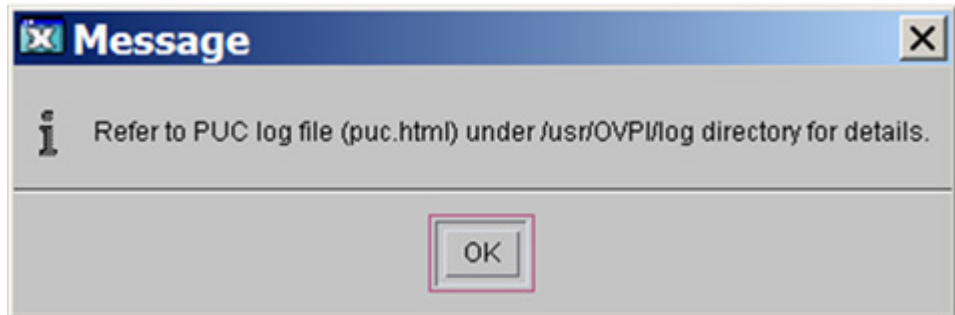


- The tests that are listed depend on your setup and might differ from the ones listed in the previous image.

- 5 Click **Run PUC**. The status of each tests appears.



- 6 Click **Done**. A message window appears with information about the log file to refer for details of the tests.



- 7 Click **OK**.

Open the `puc.html` file from the `/usr/OVPI/log` directory to find out the errors (if any) and correct them before upgrading PI.

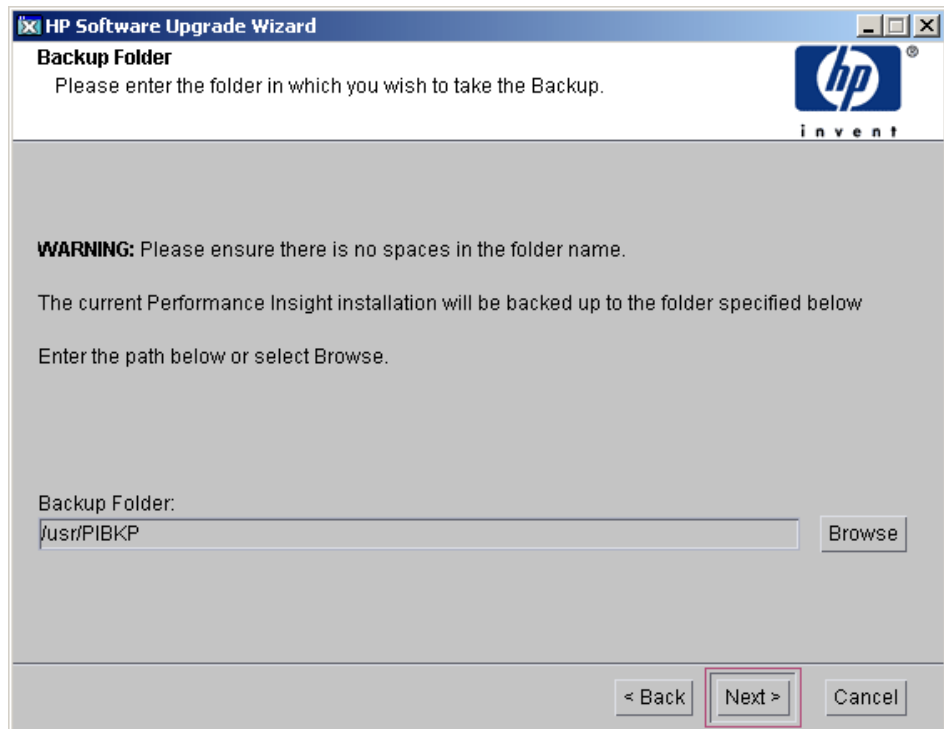
Prerequisites for Upgrading PI on a Remote Oracle Installation

If you are using a remote Oracle installation, before upgrading to PI 5.41 follow these steps:

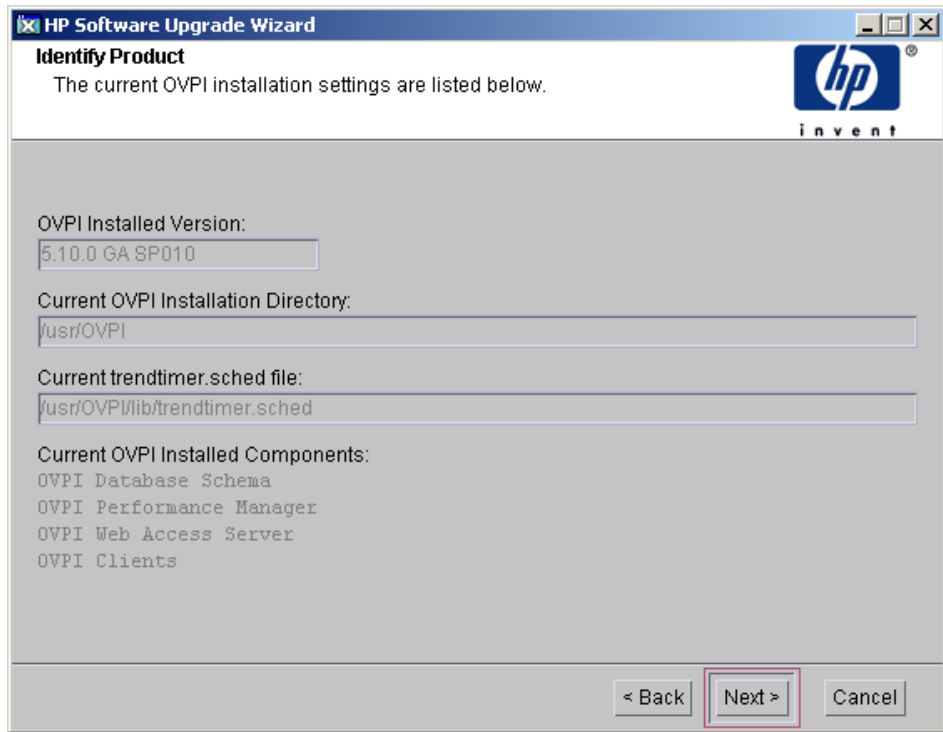
- 1 Log into sqlplus as sysdba user.
- 2 Run the command **ALTER SYSTEM SET db_32k_cache_size = 8M**
- 3 Run the script `upgrade_schema_sun_hpux.sql` (for HP-UX and Solaris). This script is available in the `util` folder.

Using the Wizard to Upgrade PI

- 1 Run the Setup Utilities program from the product DVD. The following screen appears.
- 2 Select **OVPI 5.41.0** from the Upgrade section of the Setup Utilities window. The welcome window opens.
- 3 Click **Next**. The License Agreement window opens.
- 4 Accept the terms of the license agreement and click **Next**. The Backup Folder window opens.

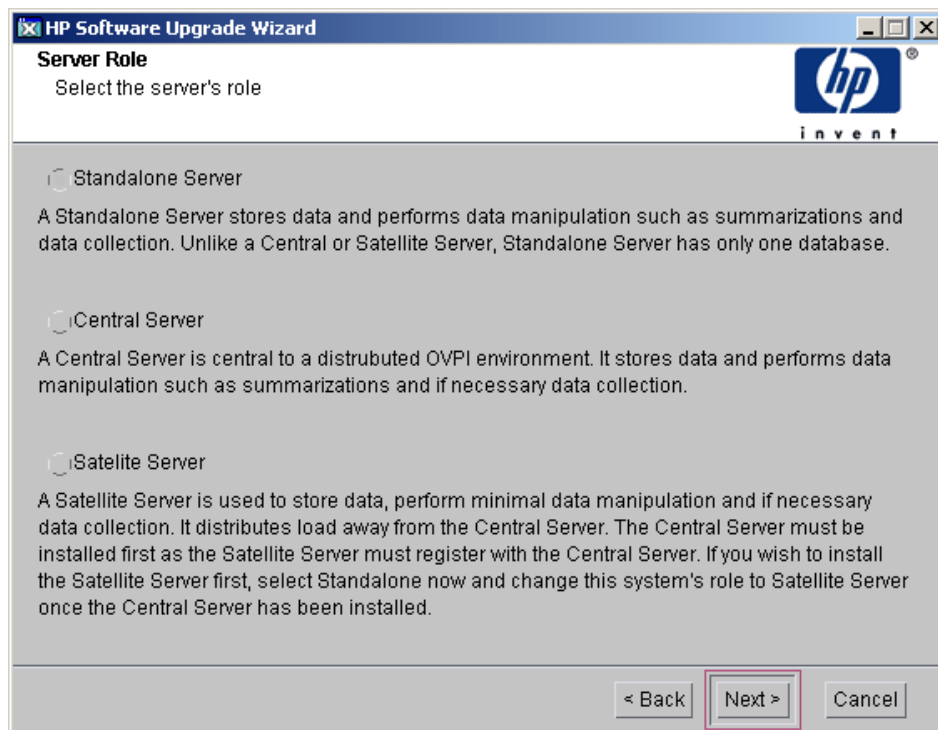


- 5 Type the Backup folder destination and click **Next**. The Identify Product window opens.



The Identify Product window displays information for the product currently installed, including the existing installed components.

- 6 Click **Next**. The Server Role window opens.



Select the environment on which you want to install PI.

- 7 Click **Next**. The Oracle Reference Using PI Database User window opens.

HP Software Upgrade Wizard

Oracle Reference Using OVPI Database User

Please enter the following information to locate and connect to the Oracle database.

Server Settings

Oracle Instance ID (SID):
HPPI

Oracle Database Host:
pisunt28.ind.hp.com

Oracle TCP/IP Port Number:
1521

User Settings

OVPI Database User:
dsi_dpape

Password:

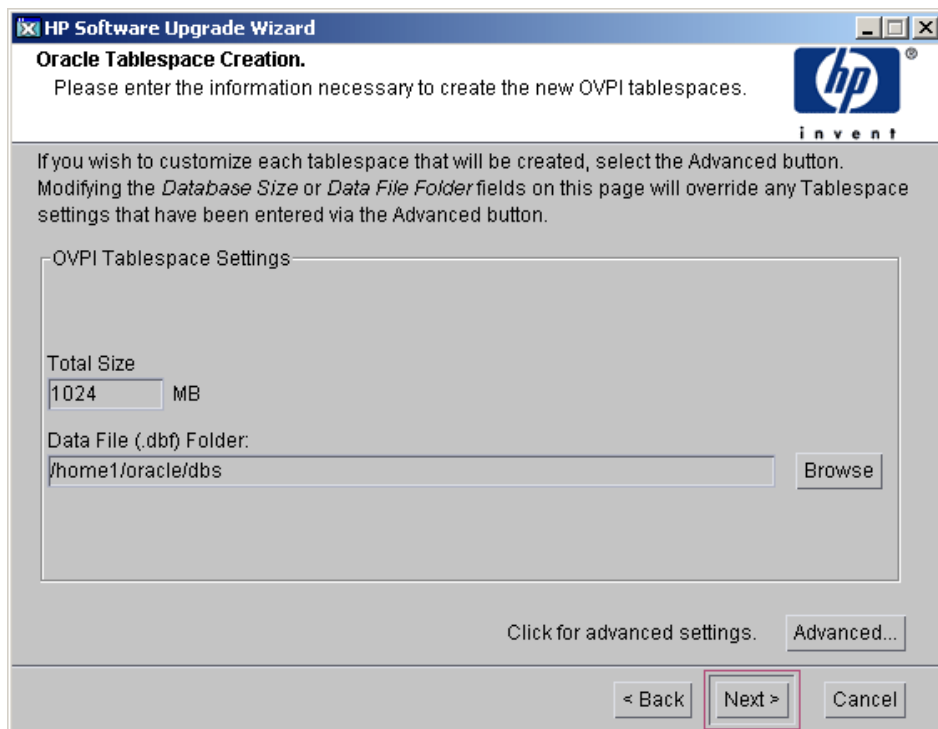
Oracle Home Directory:
/10goracle/product

Browse

< Back Next > Cancel

Type the Oracle Home Directory (Oracle must first be upgraded to version 10g).

- 8 Click **Next**. The Oracle Tablespace Creation window opens.



This window displays only when Oracle is installed on the local machine.



For a **remote Oracle installation**, you must create tablespaces for Archive and Event on the Remote Oracle database explicitly. To create the Archive and Event tablespaces on the remote Oracle database run the Upgrade scripts. Upgrade scripts are present in your PI DVD under the folder `Util`.

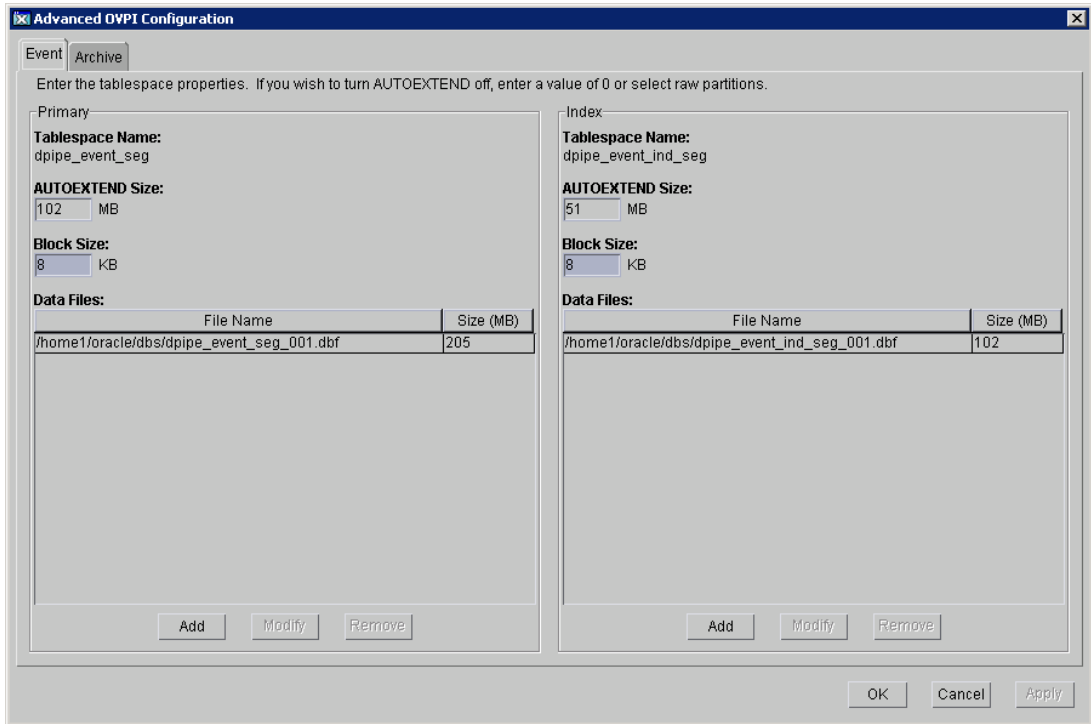
To run the upgrade schema scripts:

- 1 Log into `sqlplus` as `dsi_dpipe` user.
- 2 Run the command `upgrade_schema_sun_hpux.sql` (for HP-UX and Solaris) and `upgrade_schema_win_lin.sql` (for Linux).

The upgrade schema scripts creates the following tablespaces:

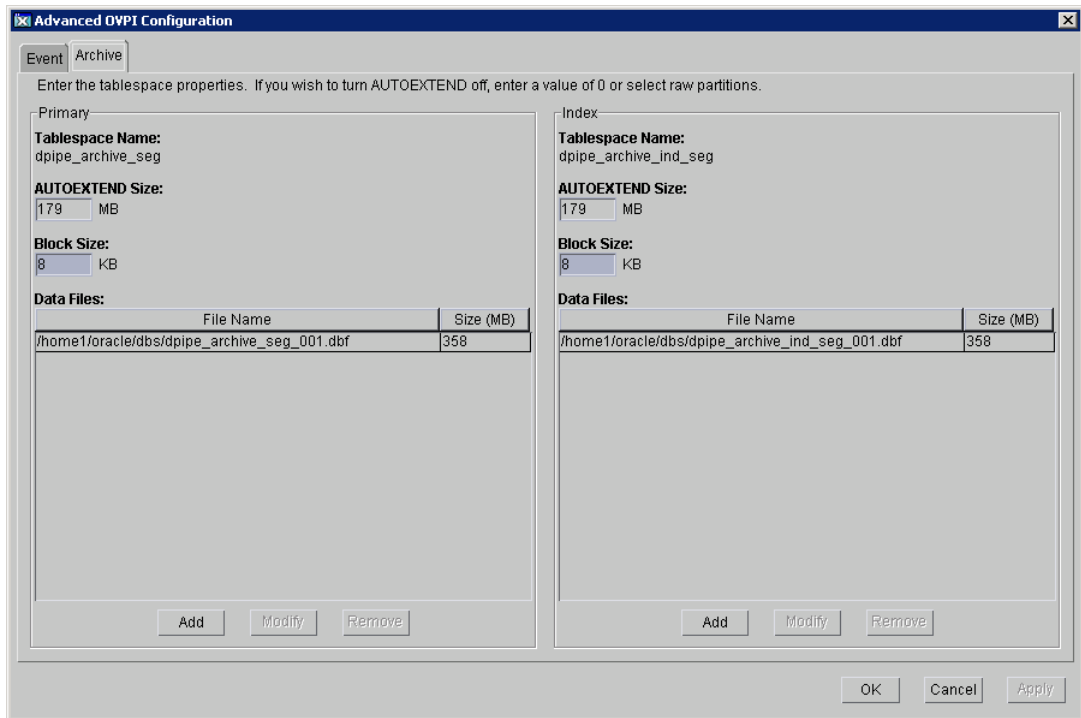
- `dpipe_archive_seg`
- `dpipe_archive_ind_seg`
- `dpipe_event_seg`
- `dpipe_event_ind_seg`

- 9 Click **Next** to continue or click **Advanced...** to open the Advanced Configuration window.



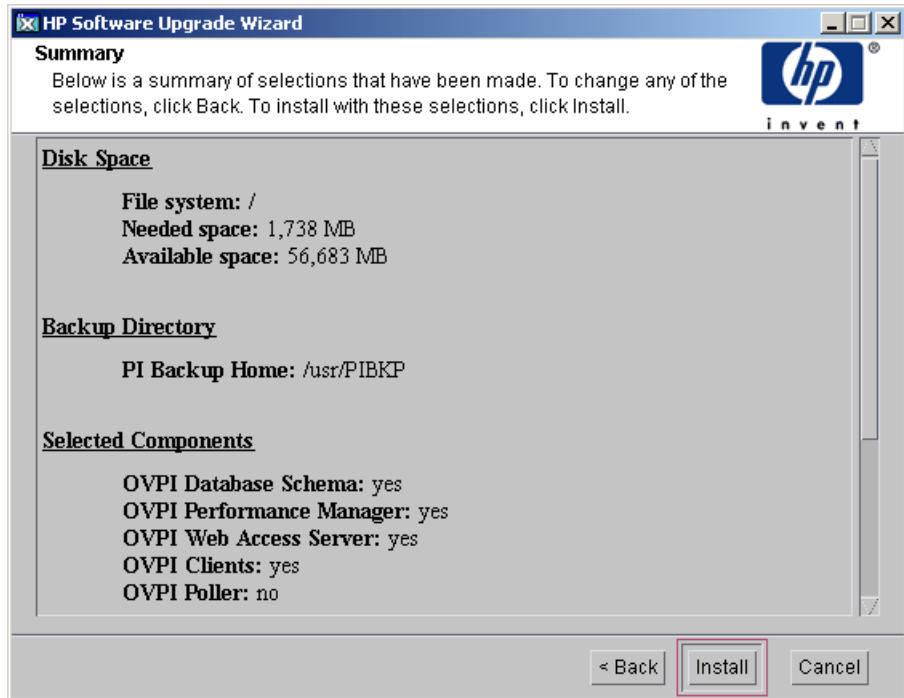
Use this window to add or modify the data files associated with the Event tablespaces dpipe_event_seg and dpipe_event_ind_seg.

Click the Archive tab.



Use this window to add or modify the data files associated with the Archive tablespaces `dpipe_archive_seg` and `dpipe_archive_ind_seg`.

- 10 Click **OK** and then click **Next**. The Summary window opens.



The Summary window displays information about the install that will be performed. You can make changes at this time by using the Back button.

You can choose to install only certain components of PI by making certain selections in the wizard. Your selections control the list of actions performed by the installer and the list of windows displayed by the wizard.

- 11 Click **Install**. The Installation Progress window opens.

Click **Done** after the installation is complete.



When upgrading to version 5.41 if PI encounters a fatal error, at any stage, you have the option to roll back PI to the previous installed version. You might also stop the upgrade process at the last completed stage and resume the upgrade later. See [Managing PI Upgrade Failure](#) on page 209 for more information about these features.

Upgrading Report Packs

After you upgrade PI to 5.41, you must upgrade to the Report Packs RNS14 Release.

Upgrading the Remote Poller

PI provides the ability to install or upgrade a remote poller separately from the PI installation.

The installation process for upgrading the remote poller is the same as the process for upgrading PI, except that the Server Role window does not appear.

Managing PI Upgrade Failure

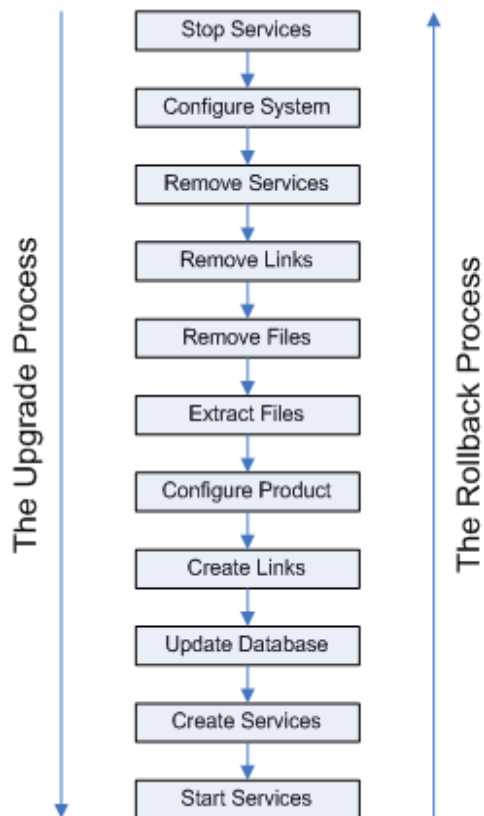
When upgrading to PI version 5.41, if the installer faces a fatal error, PI provides you the following options:

- [Rollback](#)
- [Resume Later](#)

Rollback

If you click **Rollback**, the PI upgrade process is reversed and the system goes back to the previous installed version of PI.

The following flowchart explains the stages during upgrade and roll back:



The rollback process uses the data stored in the PI backup directory that you created when starting the upgrade process.

Information about the rollback data process is logged in the `upgrade_pi_5.41.log` file.

► The rollback option is not available if the upgrade fails at the Extract Files stage. You can use the [Resume Later](#) option.

Upgrade might fail at this stage if some PI binaries are still running.

Resume Later

If you click **Resume Later**, the upgrade process saves the upgrade details, till the last successful stage, in a file. When you start the upgrade process again with the resume option, PI upgrade continues from the last successful stage. To resume upgrade, type the following command:

```
<Installation Directory> setup
```

In this instance *<Installation Directory>* is the directory where PI installables are located.

The Setup Utilities window opens. Upgrade according to the normal procedure.

For example, if the upgrade process fails at the Update Database stage, the process rolls back to the last successful stage which is the Create Links stage and saves the data in a file. When you resume the upgrade after rectifying the error, the process starts from the Update Database stage all over again.



Select the Resume Later option only if the error can be rectified in a short duration of time, without affecting other processes. All the upgrade related information is logged in the `upgrade_pi_5.41.log` file.

Use Case: The Upgrade Process Fails at Update Database Stage

This use case explains the options that you can click when a fatal upgrade error occurs. For each option, the use case gives the respective action that is taken by the PI Installer.

- **Click Rollback:** The upgrade process retrieves data from the backup folder and reverts to the previous installed version of PI.
- **Click Resume Later:** Open the `upgrade_pi_5.41.log` file. Find the problem, fix it, and run the setup command with resume option. The Upgrade process starts from where it had failed and completes the upgrade to PI 5.41.

12 Upgrading From PI 5.30 to PI 5.41

You can upgrade to PI 5.41 if you currently have any one of the following versions of PI:

- PI 5.30
- PI 5.31
- PI 5.31.001

You can upgrade to PI 5.41 if you have a standalone or a distributed environment. The installation process provided in this section applies to all environments.

Apply 10.2.0.4 patch set to your database schema, before you upgrade PI.

The remote poller is upgraded separately from PI but the procedure is the same.

Pre-Upgrade Tasks

Task 1: Install Java Patches

You must install the appropriate Java patches required for your operating system. PI 5.41 includes Java 1.5, which automatically gets installed on your system during PI installation in a separate folder. (See [Install all the Patches Required for Java](#) on page 35).

Task 2: Stop the OVPI Timer

Stop the OVPI Timer on all systems (including remote pollers) connected to the PI server or database being upgraded. For details on how to stop and start the Timer, see the *HP Performance Insight Administration Guide*.

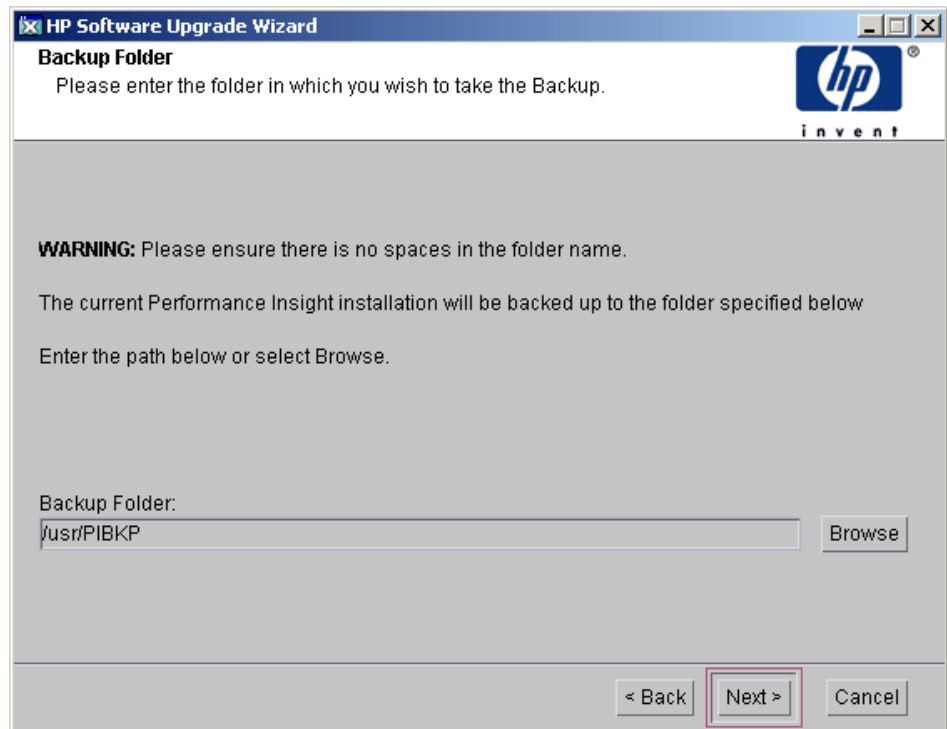
Task 3: (Optional) Run the Pre Upgrade Checker

The Pre Upgrade Checker (PUC) is a new functionality introduced with PI 5.41 upgrade. This is not a mandatory task, but running the PUC helps you avoid possible errors during upgrade.

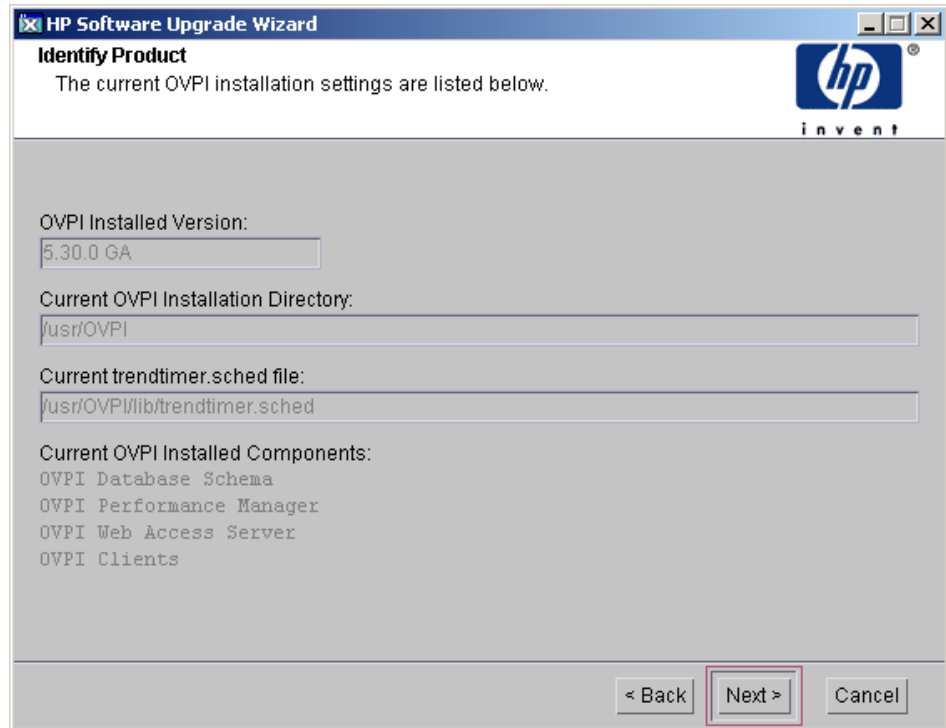
PUC is a rule-based engine that can perform some pre-defined tests detailed in an XML file. These tests check for the existence or non-existence of certain pre-defined conditions and show the status of your environment's suitability for upgrade. For details about running PUC, see [\(Optional\) Run the Pre Upgrade Checker](#) on page 194.

Using the Wizard to Upgrade PI

- 1 Run the Setup Utilities program from the product DVD. The following window opens.
- 2 Select **OVPI 5.3 to 5.41** from the Upgrade section of the Setup Utilities window. The Welcome window opens.
- 3 Click **Next**. The License Agreement window opens.
- 4 Accept the terms of the license agreement and click **Next**. The Backup Folder window opens.



- 5 Type the Backup folder destination and click **Next**. The Identify Product window opens.



The Identify Product window displays information for the product currently installed, including the existing installed components.

- 6 Click **Next**. The Oracle Reference Using PI Database User window opens.

HP Software Upgrade Wizard

Oracle Reference Using OVPI Database User

Please enter the following information to locate and connect to the Oracle database.

Server Settings

Oracle Instance ID (SID):
HPPI

Oracle Database Host:
pisunt28.ind.hp.com

Oracle TCP/IP Port Number:
1521

User Settings

OVPI Database User:
dsj_dpjpe

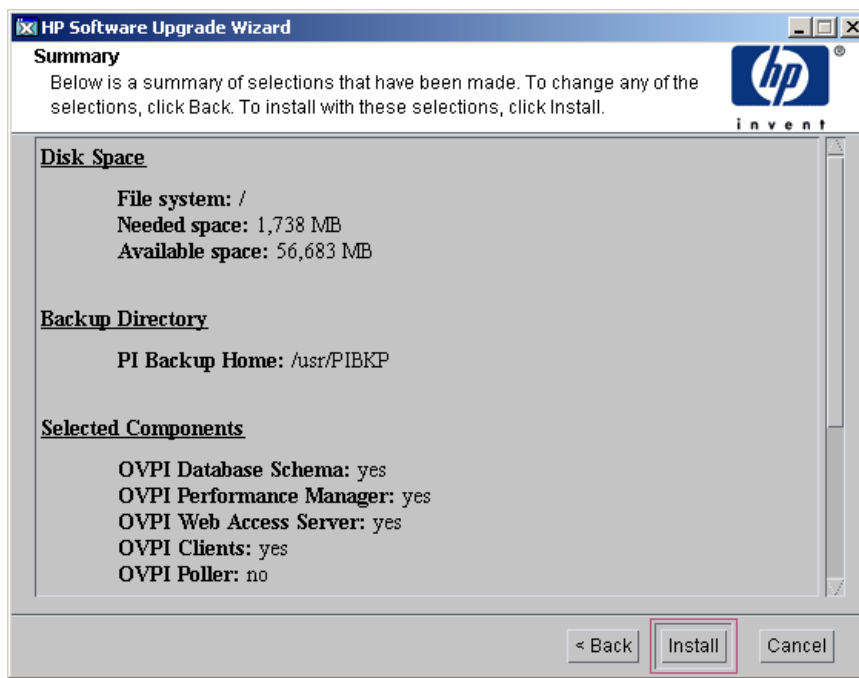
Password:

Oracle Home Directory:
/10goracle/product Browse

< Back Next > Cancel

Type the Oracle Home Directory.

- 7 Click **Next**. The Summary window opens.



The Summary window displays information about the install that will be performed. You can make changes at this time by using the Back button.

You can choose to install only certain components of PI by making certain selections in the wizard. Your selections control the list of actions performed by the installer and the list of windows displayed by the wizard.

- 8 Click **Install**. The Installation Progress window opens.

The installation is completed.



When upgrading to version 5.41 if PI encounters a fatal error, at any stage, you have the option to roll back PI to the previous installed version. You might also stop the upgrade process at the last completed stage and resume the upgrade later. See [Managing PI Upgrade Failure](#) on page 209 for more information about these features.

Upgrading Report Packs

After you upgrade PI to 5.41, you must upgrade to the Report Packs RNS14 Release.

Upgrading the Remote Poller

PI provides the ability to install or upgrade a remote poller separately from the PI installation.

The installation process for upgrading the remote poller is the same as the process for upgrading PI, except that the Server Role window does not appear.

13 Uninstalling PI

You must uninstall PI *before* you uninstall the RDBMS.

Uninstalling PI removes all PI-related tablespaces and the `dsi_dpipe` user from the database used by PI. The database itself remains.

PI Uninstall Prerequisite Tasks

Perform the following tasks before uninstalling PI.

- Stop the OVPI Timer
- Stop the OVPI HTTP Server
- Wait for PI processes to complete
- Verify that Oracle is still running

Note the directory locations for the following environment variables. These directories must be manually removed after the uninstall.

- `DPIPE_HOME`
- `DPIPE_TMP`
- `TREND_LOG`
- `COLLECT_HOME`

PI Uninstall Procedure

Use the PI Uninstall Wizard to uninstall PI. It removes all PI components from the local system, as well as files that were added to the system during PI installation. It does not remove files that were created by users or applications — log files and reports, for example.

If the PI database schema is not installed on the system where you are uninstalling PI (Remote Oracle), perform the following steps:

- 1 Open the file:
`{DPIPE_HOME}/data/config.prp`
- 2 Locate the line:
`database.selected=true`
- 3 Change that line to:
`database.selected=false`

Task 1: Start the PI Uninstall Wizard

- 1 Log on to the local system.
 - a Log on as root.
 - b Type the following command:

```
$DPIPE_HOME/bin/uninstall
```

In this instance, *\$DPIPE_HOME* is the directory into which you installed PI.
- 2 The Welcome window opens. Click **Next** to continue.
- 3 If the PI database schema is installed on the system where you are uninstalling PI, go to [Task 2](#) on page 222.
- 4 If the PI database schema is not installed on the system where you are uninstalling PI go to [Task 3](#) on page 223.

Task 2: Supply the Oracle Administrator password (local Oracle database only)

The Oracle Administrator Password window opens. Do one of the following:

- If you set the Oracle Administrator password, type the password in the Oracle Administrator (SA) Password box and click **Next** to continue.

- If you did not set the Oracle Administrator password, leave the Oracle Administrator (SA) Password box blank and click **Next** to continue.

Task 3: Review and uninstall

The Summary window opens. Use the window to review the components to be uninstalled.

- 1 If necessary, click **Back** to return to a previous window to make a change. After you make any change, click **Next** until you return to the Summary window.
- 2 Click **Uninstall** to continue.

Task 4: Finish the uninstall

The Uninstall Progress window opens. The window shows the status of the uninstall as it occurs. Following completion, the window reports whether installation was successful.

- If the PI uninstall completed successfully:
 - a Click **Done**.
 - b Continue to [Post-Uninstallation Tasks](#) on page 226.
- If the PI uninstall was unsuccessful:
 - a Click the **Details** button at the bottom of the Uninstall Progress window for additional information.
 - b Contact Support (see [Support](#) on page 5).

Task 5: Remove PI schema (Remote Oracle)

- 1 Log into the system where remote oracle database is installed.
- 2 Log into sqlplus as sysdba user.
- 3 Stop the database by typing the command:

```
SQL>shutdown
```
- 4 Run the script `remove_schema.sql`

```
SQL>@remove_schema.sql
```

(remove_schema.sql script is present in your PI DVD under the folder Extract→util/oracle.)

Uninstalling PI Manually

If PI fails to uninstall, you can manually uninstall PI. The PI uninstall may fail if:

- PI processes are still running. This could cause a file to fail to be deleted and cause warnings on uninstall.
- Something catastrophic happens during uninstall, such as a power failure.
- The PI database is not running or the uninstall fails to connect to the database during the process.

Task 1: Stop PI Services

- 1 Login as a root and run the following commands:

HP-UX:

```
/sbin/init.d/ovpi_timer stop
/sbin/init.d/ovpi_httpd stop
```

Solaris and Linux:

```
/etc/init.d/ovpi_timer stop
/etc/init.d/ovpi_httpd stop
```

- 2 Stop any open sessions from trendadm user and ensure that no trendadm is logged in.

Task 2: Remove PI Files

Login as a root and run the following commands:

HP-UX:

```
rm /sbin/init.d/ovpi_timer
rm /sbin/init.d/ovpi_httpd
rm /sbin/rc3.d/S99ovpi_timer
rm /sbin/rc3.d/S99ovpi_httpd
```

Solaris:

```
rm /etc/init.d/ovpi_timer
```



```
rm /etc/init.d/ovpi_httpd
rm /etc/rc3.d/S99ovpi_timer
rm /etc/rc3.d/S99ovpi_httpd
```

Linux:

```
rm /etc/init.d/ovpi_timer
rm /etc/init.d/ovpi_httpd
rm /etc/rc0.d/K99ovpi_timer
rm /etc/rc0.d/K99ovpi_httpd
rm /etc/rc1.d/K99ovpi_timer
rm /etc/rc1.d/K99ovpi_httpd
rm /etc/rc2.d/K99ovpi_timer
rm /etc/rc2.d/K99ovpi_httpd
rm /etc/rc3.d/S99ovpi_timer
rm /etc/rc3.d/S99ovpi_httpd
rm /etc/rc4.d/S99ovpi_timer
rm /etc/rc4.d/S99ovpi_httpd
rm /etc/rc5.d/S99ovpi_timer
rm /etc/rc5.d/S99ovpi_httpd
rm /etc/rc6.d/K99ovpi_timer
rm /etc/rc6.d/K99ovpi_httpd
rm /etc/trend.conf
rm -rf {DPIPE_HOME}
```

Task 3: Remove PI user and group

Run the following command:

```
userdel trendadm
groupdel trendadm
```

Task 4: Remove the Web Access Server

- 1 Navigate to the following directory:
`/opt/OV/nonOV/PiJBoss/405/bin`
- 2 Run the following command:
`Services.bat -uninstall`

Post-Uninstallation Tasks

To prevent potential problems if you reinstall PI, delete the following directories:

- The PI directory
- The .ovpi directory

Delete the PI Installation Directory

The PI directory is the directory into which you installed PI.

The PI Uninstall Wizard removes files from the PI directory that were installed by the PI Installation Program. It does *not* remove generated files (log files), files created by users, or reports deployed for any installed report packs that were placed in this directory.



If there are reports or data in the PI directory that you want to save, move those files to another location before continuing.

To delete the PI directory, follow these steps.

- a Open a new shell window on the system where PI was installed.
- b Type the following command:

```
rm -rf $DPIPE_HOME
```

In this instance, `$DPIPE_HOME` is the directory into which you installed PI. For example, if you installed PI in the `/data` directory, you would type:

```
rm -rf /data/OVPI
```

Remove Excess Directories

Manually remove the directories that contain the following environment variables:

- DPIPE_TMP
- TREND_LOG
- COLLECT_HOME

Delete the .ovpi Directory

The .ovpi directory stores your custom settings. It is present only if you run Report Builder, Report Viewer, or Web Access Server.



You should remove your .ovpi directory.

The .ovpi directory is a hidden file. You need to make it visible to remove it. To delete the .ovpi directory, do the following:

- UNIX Systems:

The .ovpi directory is located in the UNIX home directory.

- a Open a new shell window on the system where PI was installed.
- b Type the following command from the home directory:

```
rm -rf .ovpi
```



In scenarios where PI is co-existing with HP Performance Agent or HP Operations agent, after uninstalling PI, the `ovcd` process stops.

To manually restart `ovc`, run the following command from the command prompt: `/opt/OV/bin/ovc -start`

Uninstall the RDBMS

Continue by uninstalling the RDBMS. See [Chapter 14, Uninstalling an Oracle RDBMS](#).

14 Uninstalling an Oracle RDBMS

Do not uninstall the Oracle RDBMS unless you have uninstalled PI. See [Chapter 13, Uninstalling PI](#).

Before uninstalling Oracle, stop Oracle (see [Starting and Stopping Oracle](#) on page 66).

Follow these steps to uninstall both the RDBMS and the Oracle client.

- 1 Log on to the local system.
Log on as root.
- 2 Start the Oracle uninstall procedure.
 - a Start the Oracle Universal Installer.
The Welcome window opens.
 - b Click the **Deinstall Products** button.
The Inventory window opens.
 - c Check all items to remove, and click the **Remove** button.
The Confirmation window opens.
 - d Confirm the items to remove, and click **Yes**.
 - e For remote Oracle uninstallation run the script `remove_schema.sql`. Scripts are present in your PI DVD under the folder **Extract→Util**. This script removes all the tablespaces that had been created.

The Remove window confirms the uninstallation of the products you selected.
- 3 Remove any remaining Oracle directories the uninstall tool was unable to remove.

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