

Oracle® BPEL Process Manager

Installation Guide

10g Release 2 (10.1.2) for Solaris Operating Environment
(SPARC), Linux x86, and Microsoft Windows

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Oracle BPEL Process Manager Installation Guide, 10g Release 2 (10.1.2) for Solaris Operating Environment (SPARC), Linux x86, and Microsoft Windows

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Preface

This guide is the primary source of installation information for Oracle BPEL Process Manager.

This preface contains these topics:

- [Audience](#)
- [Documentation Accessibility](#)
- [Related Documentation](#)
- [Conventions](#)

Audience

Oracle BPEL Process Manager Installation Guide is intended for customers who want to install Oracle BPEL Process Manager.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

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Related Documentation

For more information, see these Oracle resources:

In North America, printed documentation is available for sale in the Oracle Store at

<http://oraclestore.oracle.com/>

To download free release notes, installation documentation, white papers, or other collateral, please visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

<http://www.oracle.com/technology/membership>

If you already have a username and password for OTN, then you can go directly to the documentation section of the OTN Web site at

<http://www.oracle.com/technology/documentation>

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Overview of Oracle BPEL Process Manager

This chapter provides an overview of Oracle BPEL Process Manager components and installation scenarios.

This chapter contains the following topics:

- [Oracle BPEL Process Manager Components Overview](#)
- [Installation Scenarios for Oracle BPEL Process Manager](#)
- [System Requirements for Oracle BPEL Process Manager](#)

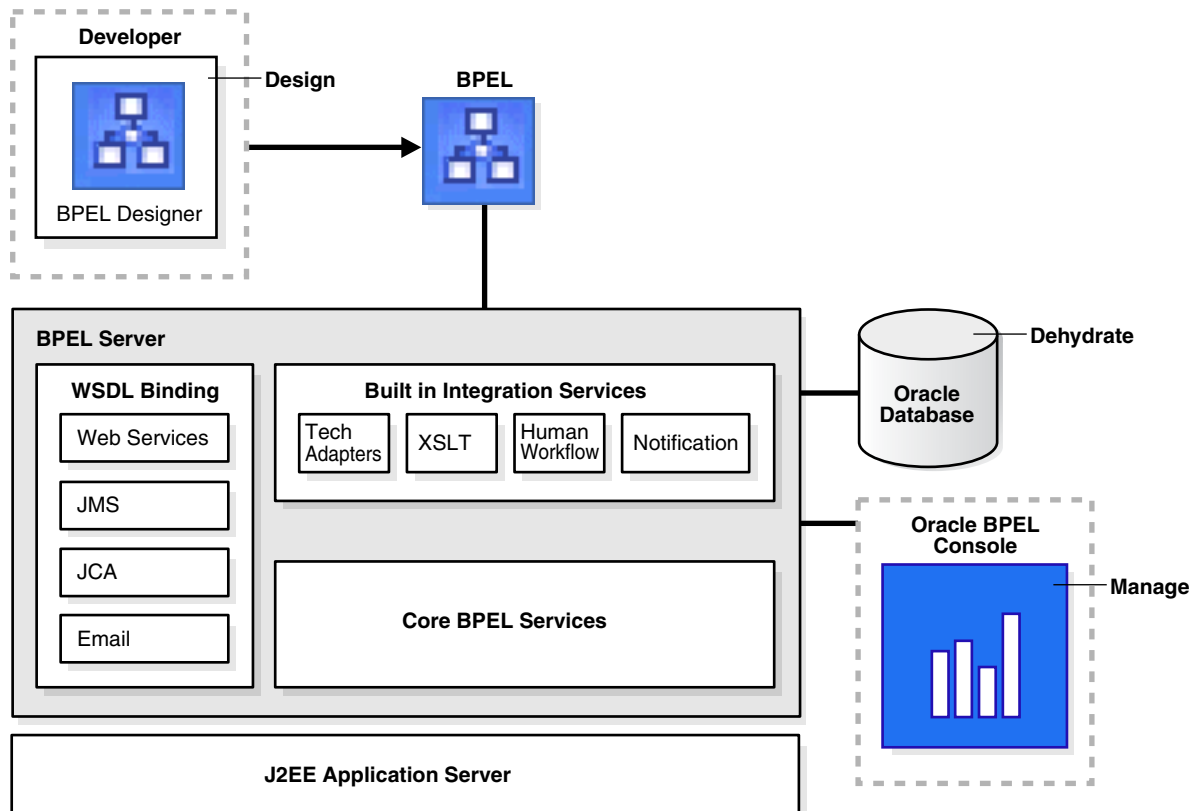
Oracle BPEL Process Manager Components Overview

Oracle BPEL Process Manager provides a user-friendly and reliable solution for designing, deploying, and managing BPEL processes. When you install Oracle BPEL Process Manager, you are given two installation types, as shown in [Table 1–1](#).

Table 1–1 Oracle BPEL Process Manager Installation Types

Installation Type	Description
Oracle BPEL Process Manager for Developers	Provides a single environment for designing and running BPEL processes. The included components are JDeveloper BPEL Designer and BPEL Process Manager. This installation type is configured with an embedded Oracle Application Server Containers for J2EE (OC4J) and, on Windows only, uses Oracle Database Lite as its database.
Oracle BPEL Process Manager for OracleAS Middle Tier	Provides a standards-based environment for running processes designed using BPEL. This runtime environment includes Oracle BPEL Server, runtime services, and adapters. This installation type requires that an Oracle Application Server 10g J2EE middle tier already be installed in the chosen Oracle home.

Oracle BPEL Process Manager consists of the key components shown in [Figure 1–1](#). Oracle BPEL Process Manager runs standard BPEL processes that you deploy to Oracle BPEL Server.

Figure 1–1 Oracle BPEL Process Manager Components

The following components are included with Oracle BPEL Process Manager.

- **BPEL Designer**—a graphical and user-friendly way to model, edit, design, and deploy BPEL processes. BPEL Designer also enables you to view and modify the BPEL source code. This component is available with Oracle JDeveloper or as a plug-in on the Eclipse Platform version 3.0GA and gets installed with Oracle BPEL Process Manager for Developers.
- **Oracle BPEL Server**—the server to which you deploy the BPEL process that you design and that contains human workflow, technology adapters, and notification services components.
- **Oracle BPEL Console**—the console from which you run, manage, and test your deployed BPEL process. Oracle BPEL Console provides a Web-based interface for management, administration, and debugging of processes deployed to Oracle BPEL Server.
- **Oracle Database Lite, on Windows**—the database that holds your BPEL schema. This option gets installed with Oracle BPEL Process Manager for Developers on Windows only. For UNIX platforms, or if you are using a multibyte character set, you must configure an Oracle Database to test your deployed BPEL processes. See ["Preinstallation Tasks for Oracle BPEL Process Manager"](#) on page 2-3 for details about configuring an Oracle Database.

See Also:

- *Oracle BPEL Process Manager Developer's Guide*
- *Oracle BPEL Process Manager Quick Start Guide*
- *Oracle BPEL Process Manager Order Booking Tutorial*
- *Oracle Adapters for Files, FTP, Databases, and Enterprise Messaging User's Guide*
- <http://www.oracle.com/technology/bpel>

Installation Scenarios for Oracle BPEL Process Manager

Installation scenarios are described in the following sections:

- [Scenario 1: Oracle BPEL Process Manager for Developers](#)
- [Scenario 2: Oracle BPEL Process Manager for OracleAS Middle Tier](#)

Note: For information about other installation configurations, see:

- ["Step 6: If Installing on a Cold Failover Cluster \(CFC\) Middle Tier"](#) on page 2-8
 - Oracle Application Server high availability details at:
<http://www.oracle.com/technology/products/ias/hiaav/index.html>
 - ["Oracle Application Server Portal and Oracle BPEL Portlets"](#) on page 1-6
-
-

Scenario 1: Oracle BPEL Process Manager for Developers

Oracle BPEL Process Manager for Developers provides a design and standalone test environment. With this scenario, you design your process and then perform preproduction deployment and testing. Once you are ready to deploy a production version, you use the OracleAS Middle Tier scenario to deploy the BPEL process.

When you select Oracle BPEL Process Manager for Developers, you get these components:

- JDeveloper BPEL Designer
- Oracle BPEL Server
- Oracle BPEL Console
- Oracle Database Lite, on Windows only

Scenario 2: Oracle BPEL Process Manager for OracleAS Middle Tier

Oracle BPEL Process Manager for OracleAS Middle Tier provides robust production components for running BPEL processes.

When you select Oracle BPEL Process Manager for OracleAS Middle Tier, you get these components:

- Oracle BPEL Server
- Oracle BPEL Console

Metadata Repository Options

When installing Oracle BPEL Process Manager for OracleAS Middle Tier, there are two options for setting up a Metadata Repository as the dehydration database:

1. Before installation, configure your Oracle Database for use with Oracle BPEL Process Manager by running the Oracle Application Server Metadata Repository Creation Assistant, or
2. Use an existing OracleAS Infrastructure Metadata Repository. This requires the use of an upgrade script to upgrade the BPEL schema version, as explained later.

OracleAS Middle Tier with Oracle Identity Management

Oracle BPEL Process Manager for OracleAS Middle Tier with Oracle Identity Management provides both a robust production platform for running BPEL processes, and an integrated security infrastructure including Oracle Internet Directory. Prior to installation, you configure your Oracle Database for use with Oracle BPEL Process Manager by running the Oracle Application Server Metadata Repository Creation Assistant.

Installing Oracle BPEL Process Manager for OracleAS Middle Tier on a Processor Farm

See the *Oracle BPEL Process Manager Administrator's Guide* for instructions on installing Oracle BPEL Process Manager for OracleAS Middle Tier on a processor farm.

System Requirements for Oracle BPEL Process Manager

This section describes operating system and database requirements for Oracle BPEL Process Manager.

Note: The information provided here reflects the platforms that were supported at the time this document was released. For the most up to date list of supported platforms, see the **Certify** tab in Oracle Metalink, available at <http://metalink.oracle.com/> for Oracle customers.

Platform Requirements for Oracle BPEL Process Manager

Table 1–2 describes the hardware and memory requirements for Oracle BPEL Process Manager.

Table 1–2 Oracle BPEL Process Manager System Requirements

Element	Requirement
Operating system	<ul style="list-style-type: none"> ■ Sun SPARC Solaris version 8, 9, and 10 See Also: <i>Oracle Application Server Installation Guide 10g Release 2 (10.1.2) for Solaris Operating System (SPARC)</i> for information on any required operating system patches, packages, swap space requirements, and kernel parameter settings ■ Red Hat Enterprise Linux AS/ES 2.1, 3.0, and 4.0 ■ SUSE Linux Enterprise Server 8 and 9 See Also: <i>Oracle Application Server Installation Guide 10g Release 2 (10.1.2) for hp HP-UX PA-RISC (64-bit) and Linux x86</i> for information on any required operating system patches, packages, swap space requirements, and kernel parameter settings ■ Windows 2000 with Service Pack 3 ■ Windows Server 2003 with Service Pack 1 ■ Windows XP See Also: <i>Oracle Application Server Installation Guide 10g Release 2 (10.1.2) for Microsoft Windows</i> for information on processor, TEMP directory, virtual memory, and swap space requirements <p>Note: For support on operating systems not listed in this table, check the Certify section of Oracle MetaLink (http://metalink.oracle.com). For UNIX-based operating systems not listed in this table, but listed as supported in Certify, use the instructions in this guide labeled for UNIX and the corresponding <i>Oracle Application Server Installation Guide 10g Release 2 (10.1.2)</i> for that operating system (for information on any required operating system patches, packages, swap space requirements, and kernel parameter settings). Oracle BPEL Process Manager for OracleAS Middle Tier is supported on all operating systems listed in Certify. However, Oracle BPEL Process Manager for Developers is supported only on Sun SPARC Solaris, Linux x86, and Microsoft Windows.</p>
Memory	512 MB RAM minimum (1 GB preferred)
Disk space	<p>Oracle BPEL Process Manager for Developers:</p> <ul style="list-style-type: none"> ■ 600 MB <p>Oracle BPEL Process Manager for OracleAS Middle Tier:</p> <ul style="list-style-type: none"> ■ 200 MB
Swap space	1535 MB minimum
Monitor	Configured to display at least 256 colors

Supported Databases for Oracle BPEL Process Manager

[Table 1–3](#) lists information about supported databases for your Oracle BPEL Process Manager installation.

You can use your existing Oracle Database, if it meets the requirements shown in [Table 1–3](#).

Table 1–3 Supported Databases

Database	Oracle BPEL Process Manager for Developers	Oracle BPEL Process Manager for OracleAS Middle Tier
Oracle Database Lite	Included on Windows installations only. No database installation steps are necessary. Refer to the note in this section about multibyte character set support	Not applicable
Oracle Database 10g	Recommended for UNIX installations	Recommended
Oracle9i Database release 9.2.0.5.0 or later	Supported	Supported

Note: Oracle Database Lite currently does not support multibyte character sets. This restriction only applies to Oracle BPEL Process Manager for Developers on the Windows platform.

Therefore, if your locale requires multibyte support, use an Oracle Database instead of Oracle Database Lite.

Supported Web Browsers for Oracle BPEL Console

Oracle BPEL Console supports these browsers:

- Internet Explorer 6.0 SP2
- Mozilla Firefox 1.0.4

Note: Ensure that cookies are enabled in your Web browser. The Oracle BPEL Console caching mechanism uses cookies to identify user sessions.

Oracle Application Server Portal and Oracle BPEL Portlets

Oracle BPEL Portlets consist of Oracle BPEL Console report portlets and Oracle BPEL Worklist Application portlets. To use Oracle BPEL Portlets, you must install the following installation types:

- Install the Identity Management and Metadata Repository installation type of Oracle Application Server Infrastructure 10g Release 2 (10.1.2.0.2)
- Install the Portal and Wireless Middle Tier (same release)
- Install Oracle BPEL Process Manager for OracleAS Middle Tier (same release)

See Also: "Oracle BPEL Portlets" in the *Oracle BPEL Process Manager Developer's Guide* for additional information about deploying portlets.

Oracle BPEL Process Manager Installation

This chapter provides the requirements and procedures for installing Oracle BPEL Process Manager.

This chapter contains the following topics:

- [Installation Overview for Oracle BPEL Process Manager](#)
- [Preinstallation Tasks for Oracle BPEL Process Manager](#)
- [Installation Tasks for Oracle BPEL Process Manager](#)
- [Postinstallation Tasks for Oracle BPEL Process Manager](#)
- [Postinstallation Verification Tasks for Oracle BPEL Process Manager](#)
- [Globalization for Oracle BPEL Process Manager](#)
- [Determining the Version of Oracle BPEL Process Manager](#)
- [Directory Structure of Oracle BPEL Process Manager](#)
- [Deinstallation Tasks for Oracle BPEL Process Manager](#)
- [Troubleshooting Oracle BPEL Process Manager Installation and Configuration](#)

Installation Overview for Oracle BPEL Process Manager

This section provides an overview of installation tasks to perform based on the type of installation used for Oracle BPEL Process Manager, and provides references to procedures for performing these tasks.

Exploring the Product CD-ROM

The Oracle BPEL Process Manager product CD-ROM contains the following files and directories at the top level:

- `README_BPEL_OC4J.txt`—The readme file for this release, which contains important information
- `bpel_oc4j`—The directory that contains software to install
- `doc`—The directory that contains this installation guide
- `sql`—The directory that contains the Oracle Application Server Metadata Repository 10.1.2.0.2 upgrade script:
 - `upgrade_202_203_oracle.sql`

This script automatically executes `sensor_oracle.sql` (also located in the `sql` directory).

Note: The repository upgrade script is only required if you use an existing Oracle Application Server Metadata Repository 10.1.2.0.2 as your BPEL dehydration store. The upgrade script upgrades the Oracle BPEL Process Manager schema version, as explained later.

Installation Tasks Summary and Where to Find Procedures

[Table 2–1](#) provides a summary of installation tasks to perform for Oracle BPEL Process Manager for Developers if you plan to use an Oracle Database instead of Oracle Database Lite.

Note: If you plan to install Oracle BPEL Process Manager for Developers on Windows with Oracle Database Lite, then you can go directly to ["Installing Oracle BPEL Process Manager for Developers"](#) on page 2-8. The preinstallation tasks in [Table 2–1](#) are not required.

Note: The Oracle Application Server Metadata Repository Creation Assistant referenced in [Table 2-1](#) is a utility that creates the Oracle BPEL Process Manager user and schema in the database.

Table 2–1 Oracle BPEL Process Manager for Developers

For Database	Follow These Steps...	See Also...
Oracle Database 10g (10.1) or Oracle9i Database release 9.2.0.5.0 or later	<ol style="list-style-type: none"> 1. Install Oracle Database 10g or Oracle9i Database release 9.2.0.5.0 or later, if not already installed. Note: Oracle BPEL Process Manager works with your existing Oracle Database 10g or Oracle9i Database release 9.2.0.5.0 or later. 2. Create the Oracle BPEL Process Manager schema and user in the Oracle Database using the Oracle Application Server Metadata Repository Creation Assistant. 3. Install Oracle BPEL Process Manager for Developers. 4. Configure your Oracle BPEL Process Manager to use the Oracle Database. 	<p><i>Oracle Database Installation Guide 10g</i> or <i>Oracle Database Installation Guide 9i</i> for your platform</p> <p>"Installing Oracle BPEL Process Manager for Developers" on page 2-8 of this guide</p> <p>"Step 2: May be Needed - Configure Oracle BPEL Process Manager to Use Your Oracle Database" on page 2-15 of this guide</p>

[Table 2–2](#) provides an overview of installation tasks to perform for Oracle BPEL Process Manager for OracleAS Middle Tier.

Table 2–2 Oracle BPEL Process Manager for OracleAS Middle Tier

For	Follow These Steps...	See Also...
Oracle Database 10g (10.1) or Oracle9i Database release 9.2.0.5.0 or later	1. Install Oracle Database 10g or Oracle9i Database release 9.2.0.5.0 or later, if not already installed	<i>Oracle Database Installation Guide 10g</i> or <i>Oracle Database Installation Guide 9i</i> for your operating system
or Oracle Application Server Metadata Repository	or Install the Oracle Application Server Metadata Repository 10.1.2.0.2, if not already installed	or <i>Oracle Application Server Installation Guide</i> for your operating system
	2. Run Oracle Application Server Metadata Repository Creation Assistant (for Oracle Database only) or Upgrade the BPEL schema version using the upgrade script (for Oracle Application Server Metadata Repository only)	"Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database" on page 2-5, or "Step 4: Upgrade the BPEL Schema Version" on page 2-7
	3. Install Oracle Application Server 10g Release 2 (10.1.2.0.2) and select either the J2EE and Web Cache installation type or the Portal and Wireless installation type.	<i>Oracle Application Server Installation Guide</i> for your operating system
	4. Install the current release of Oracle BPEL Process Manager for OracleAS Middle Tier. Important: You must install on the Oracle Application Server middle tier in the same Oracle home as J2EE and Web Cache or Portal and Wireless.	"Installing Oracle BPEL Process Manager for OracleAS Middle Tier" on page 2-10 of this guide

Preinstallation Tasks for Oracle BPEL Process Manager

Depending on the platform and database that you plan to use, complete the following procedures that apply to your installation.

Steps for Oracle BPEL Process Manager for Developers

Note: On the Windows platform, Oracle Database Lite is included with the installation. If you plan to use Oracle Database Lite as your dehydration store, skip the preinstallation procedures in this section and go directly to ["Installing Oracle BPEL Process Manager for Developers"](#) on page 2-8.

On UNIX platforms, an Oracle Database is required for Oracle BPEL Process Manager for Developers. (If you already have an Oracle Database for this purpose, then you do not need to reinstall the database.)

Complete the following steps on UNIX:

- [Step 1: Install the Database - If Not Already Installed](#)

- [Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database](#)
- [Step 7: Disable IPv6 if it Is Enabled](#)

Steps for Oracle BPEL Process Manager for OracleAS Middle Tier

For Oracle BPEL Process Manager for OracleAS Middle Tier, the preinstallation steps are as follows:

- [Step 1: Install the Database - If Not Already Installed](#)

These steps are required for an Oracle Database:

- [Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database](#)
- [Step 3: Unlock the orabpel Account and Change the Password](#)
- [Step 5: Install Oracle Application Server](#)

These steps are required for Oracle Application Server Metadata Repository:

- [Step 3: Unlock the orabpel Account and Change the Password](#)
- [Step 4: Upgrade the BPEL Schema Version](#)
- [Step 5: Install Oracle Application Server](#)
- [Step 6: If Installing on a Cold Failover Cluster \(CFC\) Middle Tier](#)
- [Step 7: Disable IPv6 if it Is Enabled](#)

Details of Preinstallation Steps

This section lists the preinstallation steps to follow for Oracle BPEL Process Manager installation. Perform the steps that are appropriate and necessary for your install type, as described earlier in "[Steps for Oracle BPEL Process Manager for Developers](#)" and "[Steps for Oracle BPEL Process Manager for OracleAS Middle Tier](#)".

Step 1: Install the Database - If Not Already Installed

One of the following is required as a dehydration store for Oracle BPEL Process Manager for OracleAS Middle Tier:

- An Oracle Database
- Oracle Application Server Metadata Repository

An Oracle Database is required as a dehydration store for Oracle BPEL Process Manager for Developers on UNIX platforms.

At this time, non-Oracle databases are not supported as Oracle BPEL Process Manager dehydration stores. This installation option is reserved for future use.

See Also: ["Dehydration Store Maintenance"](#) on page 2-25

Oracle Database

If you already have an Oracle Database that meets the requirements listed in "[Supported Databases](#)" on page 1-6, then you do not need to reinstall the database. Otherwise, install or upgrade before you proceed.

See Also:

- *Oracle Database Installation Guide for Microsoft Windows (32-Bit)*
- *Oracle Database Installation Guide for Linux x86*
- *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*

Oracle Application Server Metadata Repository

Note: As a general best practice, Oracle recommends that a standalone Oracle Database be used as the dehydration database instead of the Oracle Application Server Metadata Repository.

An Oracle Application Server installation can serve as the BPEL Process Manager dehydration store in these topologies:

- Oracle Application Server Metadata Repository only
- Oracle Application Server Metadata Repository with Oracle Identity Management

The steps are as follows:

1. Install an Oracle Application Server Metadata Repository based on Oracle Application Server 10.1.2.0.2.
2. Run the upgrade script to upgrade the BPEL schema from version 2.0.2 to version 2.0.3.

See Also:

- *Oracle Application Server Installation Guide for Microsoft Windows*
- *Oracle Application Server Installation Guide for Linux x86*
- *Oracle Application Server Installation Guide for Solaris Operating System (SPARC)*

Non-Oracle Database

At this time, non-Oracle databases are not supported as Oracle BPEL Process Manager dehydration stores. This installation option is reserved for future use.

Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database

Note: This step is *not* meant for use when Oracle Application Server Metadata Repository is the dehydration store.

Run the Oracle Application Server Metadata Repository Creation Assistant to create the database user and schema. Oracle Application Server Metadata Repository Creation Assistant creates the default user `orabpel`, the default password `orabpel`, and the tablespace `ORABPEL` in the Oracle Database.

Note that:

- If you previously installed Oracle BPEL Process Manager for Developers and you already ran Oracle Application Server Metadata Repository Creation Assistant on this Oracle Database, then you do not need to run it again.
- If you already have an Oracle BPEL Process Manager user (`orabpel`) in the target database, then stop all sessions, activities, and transactions for the user before running Oracle Application Server Metadata Repository Creation Assistant. This involves shutting down Oracle BPEL Server, Oracle BPEL Console, and JDeveloper BPEL Designer.
- Oracle recommends that you create the `ORABPEL` tablespace with auto segment space management turned on. This enables you to conveniently reclaim free space in the dehydration store.

See Also: ["Dehydration Store Maintenance"](#) on page 2-25

See the *Oracle Application Server Metadata Repository Creation Assistant User's Guide* for information about how to run the Oracle Application Server Metadata Repository Creation Assistant.

Step 3: Unlock the `orabpel` Account and Change the Password

Note: Unlocking the `orabpel` account is necessary if you are installing Oracle BPEL Process Manager for an Oracle Application Server Metadata Repository without Oracle Identity Management (the repository is *not* registered with Oracle Internet Directory). If the repository *is* registered with Oracle Internet Directory, the account is **not** locked; instead, you must find out the encrypted password to proceed with Step 4. Instructions for both situations, whether or not the Oracle Application Server Metadata Repository is registered with Oracle Internet Directory, are provided here.

If the Oracle Application Server Metadata Repository is not registered with Oracle Internet Directory, you must unlock the Oracle BPEL Process Manager user account `orabpel` and unlock the schema password as follows:

1. Start SQL*Plus:

```
sqlplus /nolog
```

2. Connect to the OracleAS Metadata Repository:

```
CONNECT / AS SYSDBA
```

3. Unlock the Oracle BPEL Process Manager account:

```
ALTER USER orabpel IDENTIFIED BY orabpel ACCOUNT UNLOCK;
```

4. For security reasons, Oracle recommends that you then change the account password:

```
ALTER USER orabpel IDENTIFIED BY new_orabpel_passwd;
```

If installing on an Oracle Application Server Metadata Repository with Oracle Identity Management (that is, the repository is registered with Oracle Internet Directory), the Oracle BPEL Process Manager `orabpel` user account is not locked. Instead, you must

first obtain the encrypted orabpel account password with a tool like `ldapsearch`; obtaining the encrypted password enables you to log in as `orabpel/encrypted_password`.

`ldapsearch` can be used as follows:

Idapsearch Syntax

```
$Oracle_Home/bin/ldapsearch -h oid_host -p oid_port -D "cn=orcladmin" -w
orcladmin_passwd
-b "orclresourcename=ORABPEL, orclreferencename=oid_global_db_name, cn=ias
infrastructure databases, cn=ias, cn=products, cn=oraclecontext" -s base
"objectclass=top" orclpasswordattribute
```

Idapsearch Example

```
$Oracle_Home/bin/ldapsearch -h sti6rb03.idc.oracle.com -p 389 -D "cn=orcladmin" -w
welcome1
-b "orclresourcename=ORABPEL, orclreferencename=orcloid.idc.oracle.com, cn=ias
infrastructure databases, cn=ias, cn=products, cn=oraclecontext" -s base
"objectclass=top" orclpasswordattribute
```

See Also: The following documentation for details on using `ldapsearch`:

- *Oracle Application Server Administrator's Guide*
- The "ldapsearch" command-line tool reference in *Oracle Identity Management User Reference*

Step 4: Upgrade the BPEL Schema Version

Note: This step is not required for all instances of Oracle Application Server Metadata Repository. If you loaded the Oracle Application Server Metadata Repository in an existing database using Oracle Application Server Metadata Repository Creation Assistant, do not use this step as it is not necessary.

Locate the SQL*Plus script to upgrade the BPEL Process Manager schema. The script is located in the `sql` directory of the Oracle BPEL Process Manager CD-ROM and is named `upgrade_202_203_oracle.sql`.

Run the script against your Oracle Application Server Metadata Repository as follows (see the *Note* at the beginning of this step before proceeding):

1. Log in to SQL*Plus and connect as the `orabpel` user.

If installing on an Oracle Application Server Metadata Repository without Oracle Identity Management (that is, the repository is *not* registered with Oracle Internet Directory), connect this way:

```
CONNECT orabpel/orabpel_password
```

If installing on an Oracle Application Server Metadata Repository with Oracle Identity Management (that is, the repository *is* registered with Oracle Internet Directory), connect this way:

```
CONNECT orabpel/encrypted_password
```

2. Execute the upgrade script:

```
@upgrade_202_203_oracle.sql
```

This script automatically executes the `sensor_oracle.sql` script (also located in the `sql` directory). If you copy `upgrade_202_203_oracle.sql` to a different directory in order to execute it, ensure that `sensor_oracle.sql` is also copied to the same directory.

Step 5: Install Oracle Application Server

Install Oracle Application Server 10g Release 2 (10.1.2.0.2) and select the J2EE and Web Cache installation type or the Portal and Wireless installation type.

See Also: *Oracle Application Server Installation Guide* for your operating system

Step 6: If Installing on a Cold Failover Cluster (CFC) Middle Tier

If you are installing on a Cold Failover Cluster (CFC) middle tier, the following steps are required after installation of the middle tier and before you install Oracle BPEL Process Manager.

1. Configure the middle tier for a CFC environment.

See *Oracle Application Server Installation Guide* for your operating system for this step.

2. Check the `Midtier_Home/config/ias.properties` file and make sure that the value of the property `VirtualHostName` is correct for the `VirtualHostName` of the CFC middle tier.

After you complete the preinstallation steps, you are ready to continue with the installation.

Step 7: Disable IPv6 if it Is Enabled

The Oracle BPEL Process Manager installation does not support IPv6 addressing. If IPv6 is enabled on the target machine, disable it prior to installing BPEL Process Manager. You can enable IPv6 post-installation.

Installation Tasks for Oracle BPEL Process Manager

Follow the instructions in one of these sections to install BPEL Process Manager:

- [Installing Oracle BPEL Process Manager for Developers](#)
- [Installing Oracle BPEL Process Manager for OracleAS Middle Tier](#)

Installing Oracle BPEL Process Manager for Developers

This installation type installs both JDeveloper BPEL Designer and Oracle BPEL Process Manager.

1. Ensure that all preinstallation tasks and requirements described in "[Preinstallation Tasks for Oracle BPEL Process Manager](#)" on page 2-3 have been completed.
2. Log on to the host on which you want to install Oracle BPEL Process Manager.
3. Insert the Oracle BPEL Process Manager CD-ROM.

4. Start Oracle Universal Installer from the `bpel_oc4j` directory of the CD-ROM as follows:

On...	Do This...
UNIX	Enter the following command at the operating system prompt: <code>./runInstaller</code>
Windows	Double-click <code>setup.exe</code> .

The Welcome screen appears.

5. Click **Next**.

If your host is detected to be part of a cluster, the Specify Hardware Cluster Installation Mode screen appears. Select **Noncluster Installation**. This installs Oracle BPEL Process Manager on this node only, and not as part of a cluster node. Do not select **Cluster Installation**.

The Specify File Locations screen appears.

6. In the **Destination** fields, accept the default Name and Path, or specify a new Oracle home name and directory path in which to install Oracle BPEL Process Manager components.

Note: Do not use an existing home name and directory path.

- Enter the Name and Path as shown in these examples:

UNIX example:

Name: `BPELPM1012`
Path: `/home/oracle/BPELPM1012`

Windows example:

Name: `BPELPM1012`
Path: `C:\Oracle\BPELPM1012`

- Do not change the directory path in the **Source** field. This is the location of installation files.

7. Click **Next**.

The Select Installation Type screen appears.

[Table 1–1](#) on page 1-1 describes the available installation types.

8. Select **BPEL Process Manager for Developers** and click **Next**.

The Specify Outgoing HTTP Proxy Information screen appears.

Note: This information is automatically filled in on Windows platforms if your browser has been configured for Proxy Server information under LAN Settings on the **Connections** tab.

If your browser is using Automatic Configuration of proxies, then you must fill in this information.

9. If you have a direct connection to the Internet and do not use a proxy server, or if you accept the default information, then click **Next**.

Otherwise, enter the information as shown in [Table 2–3](#).

Table 2–3 *Outgoing HTTP Proxy Information*

Field	Description	Example
HTTP Proxy Host	Enter the name of the proxy server host.	www-proxy.us.acme.com
HTTP Proxy Port	Enter the port number of the proxy server host.	80
Bypass proxy for addresses	Enter an address that bypasses the proxy. You may enter more than one address, separating each with a semi-colon (;).	*.us.acme.com; *.us.acme.com; <local> Note: The <local> tag ensures that your hostname is automatically included in the bypass proxy list.

The Summary screen appears.

10. Click **Install**.

The Install screen appears showing the installation progress.

11. When installation completes, the End of Installation screen appears with information for your review.

12. Click **Exit** and confirm when prompted.

The Getting Started page appears.

This completes the installation procedures. Verify the installation, as described in ["Postinstallation Tasks for Oracle BPEL Process Manager"](#) on page 2-13.

Installing Oracle BPEL Process Manager for OracleAS Middle Tier

Before installing Oracle BPEL Process Manager on an OracleAS Middle Tier, recall from ["Preinstallation Tasks for Oracle BPEL Process Manager"](#) on page 2-3 that you must already have one of the following installed for use as a dehydration store for Oracle BPEL Process Manager for OracleAS Middle Tier:

- An Oracle Database on which the Oracle Application Server Metadata Repository Creation Assistant has been executed to create the necessary database user and schema (see ["Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database"](#) on page 2-5)
- Oracle Application Server Metadata Repository on which the version upgrade script has been executed (see ["Step 4: Upgrade the BPEL Schema Version"](#) on page 2-7)

To install Oracle BPEL Process Manager for OracleAS Middle Tier:

1. Ensure that all preinstallation tasks and requirements described in ["Preinstallation Tasks for Oracle BPEL Process Manager"](#) on page 2-3 have been completed.
2. If installing the Oracle BPEL Process Manager for OracleAS Middle Tier installation type into an Oracle home directory that includes the Portal and Wireless middle tier type, ensure that Oracle Internet Directory is already running. Otherwise, Oracle BPEL Process Manager for OracleAS Middle Tier will not install successfully.
3. Log on to the host on which you want to install Oracle BPEL Process Manager components.

4. Insert the Oracle BPEL Process Manager CD-ROM.
5. Start Oracle Universal Installer from the `bpel_oc4j` directory of the CD-ROM as follows:

On...	Do This...
UNIX	Enter the following command at the operating system prompt: <code>./runInstaller</code>
Windows	Double-click <code>setup.exe</code> .

The Welcome screen appears.

6. Click **Next**.

If your host is detected to be part of a cluster, the Specify Hardware Cluster Installation Mode screen appears. Select **Noncluster Installation**. This installs Oracle BPEL Process Manager on this node only, and not as part of a cluster node. Do not select **Cluster Installation**.

The Specify File Locations screen appears.

7. Select the Oracle home name and directory path where Oracle Application Server 10.1.2.0.2 J2EE and Web Cache or Portal and Wireless is located.

- Do not accept the default Name and Path. The installer looks for the Oracle Application Server 10.1.2.0.2 J2EE and Web Cache or Portal and Wireless instance. If you specify an incorrect path, the Dependencies alert appears. Enter the Name and Path as shown in these examples.

UNIX example:

Name: `Home1`
Path: `/home/oracle/OraHome_1`

Windows example:

Name: `Home1`
Path: `C:\OraHome_1`

- Do not change the directory path in the **Source** field. This is the location of installation files.

8. Click **Next**.

The Select Installation Type screen appears.

Select **BPEL Process Manager for OracleAS Middle Tier** and click **Next**.

9. The Specify Outgoing HTTP Proxy Information screen appears.

If you have a direct connection to the Internet and do not use a proxy server, or if you accept the default information, then click **Next**.

Otherwise, enter the information as shown in [Table 2-3](#) on page 2-10.

10. The Choose the Dehydration Database type screen appears.

Depending on the database you previously configured as the dehydration store, choose one of the following:

- Oracle Database
- Metadata Repository

At this time, non-Oracle databases are not supported as Oracle BPEL Process Manager dehydration stores. This installation option is reserved for future use.

See ["Preinstallation Tasks for Oracle BPEL Process Manager"](#) on page 2-3 for details.

11. In the Specify Dehydration Database Information screen, provide the details as described in the following table:

Information	Description	Example
Password for BPEL Process Manager Schema (ORABPEL):	The password that Oracle Application Server Metadata Repository Creation Assistant assigns to the user <code>orabpel</code> . You changed this password during preinstallation tasks. For information about the <code>orabpel</code> user account, refer to the section "Step 2: Run the Oracle Application Server Metadata Repository Creation Assistant on the Oracle Database" on page 2-5.	
Hostname:Port	The full name or IP address of your database host and the listener port. The default listener port is 1521.	<code>my-pc.acme.com:1521</code> or <code>137.1.18.228:1521</code>
Service Name:	The service name that you specified when you installed the database. The default service name is <code>orcl</code> , which may be prepended to the fully qualified domain name (FQDN) for your database. Note that this is not the SID. If you are not sure, then run the SQL*Plus command <code>show parameter service_names</code> .	<code>orcl</code> or <code>orcl.us.acme.com</code>
ias_admin Password:	The password for the Oracle Application Server middle tier in which you are installing. You specified this password when you installed Oracle Application Server with J2EE and Web Cache or Portal and Wireless.	

12. Click **Next**. (Note that it takes a few minutes for the database connection to be established.)

If you selected a dehydration store that does not include Identity Management Configuration, the installation continues with Step 14.

If you selected the Identity Management Configuration option for the dehydration store, the Specify Login for Oracle Internet Directory screen appears.

13. Enter either the Oracle Internet Directory super user name or the name of a single sign-on user with the install privilege.

14. Click **Next**.

The Install Demo Users screen appears. This option enables Oracle Internet Directory to be used as the identity service LDAP-based JAZN provider.

Note: See the *Oracle BPEL Process Manager Developer's Guide* for details about identity services and the demo user community.

Select **Yes** if you want to automatically install the identity service users, application roles, and groups into Oracle Internet Directory during installation.

Select **No** if you want to install only the system users and application roles. The demo user community and enterprise groups will not be installed; you can later install them manually.

15. The Summary screen appears.

16. Click Install.

The Installation Progress screen appears for a few seconds, and then the Configuration Assistants screen appears with Oracle BPEL Process Manager Configuration Assistant.

17. When installation completes, the End of Installation screen appears with information for your review.

18. Click **Exit** and confirm when prompted.

The Getting Started page appears.

This completes the installation procedures. Verify the installation, as described in ["Postinstallation Verification Tasks for Oracle BPEL Process Manager"](#) on page 2-19.

Postinstallation Tasks for Oracle BPEL Process Manager

After installing Oracle BPEL Process Manager, complete the required postinstallation steps and then complete the additional steps depending on the type of installation you are performing. The steps are described in these sections:

- [Postinstallation Steps for Oracle BPEL Process Manager \(All Installations\)](#)
- [Postinstallation Steps for Oracle BPEL Process Manager for Developers](#)
- [Postinstallation Steps for Oracle BPEL Process Manager for OracleAS Middle Tier](#)

Note:

- Important information about Oracle BPEL Process Manager configuration is provided in *Oracle_Home/integration/orabpel/bpelsetupinfo.txt* (for Oracle BPEL Process Manager for Developers) and *Oracle_Home/install/bpelsetupinfo.txt* (for Oracle BPEL Process Manager for OracleAS Middle Tier).
 - For the full log of installation details, see the *installActionsdate_time.log* file, where the date and time are specified as yyyy-mm-dd_hr-mm-ss. This file is located under *c:\Program Files\Oracle\Inventory\logs* on Windows and *\$ORACLE_HOME/oraInventory/logs/* on UNIX.
-

Postinstallation Steps for Oracle BPEL Process Manager (All Installations)

Complete these procedures for all installations of Oracle BPEL Process Manager, including the Developer and Middle Tier versions:

- [Step 1: Recommended - Change Default Passwords](#)
- [Step 2: Recommended - Configure Notification and Workflow for Oracle BPEL Process Manager](#)
- [Step 3: Recommended - Update the Path on UNIX](#)
- [Step 4: May Be Needed - Re-enable IPv6](#)

Step 1: Recommended - Change Default Passwords

It is important to change default passwords before you start using the product.

- A domain named `default` is automatically installed with Oracle BPEL Process Manager. The initial password for this domain is `bpel`. Change this password immediately after installation is complete.
- You create BPEL domains and configure Oracle BPEL server properties from the Oracle BPEL Admin Console. The password for Oracle BPEL Admin Console is automatically set to `oracle`. Change this password immediately after installation.
- If using a Metadata Repository, and the Metadata Repository and Oracle Internet Directory reside in the same database, then change the password in both places.

See Also: *Oracle BPEL Process Manager Developer's Guide* for procedures on changing passwords

Step 2: Recommended - Configure Notification and Workflow for Oracle BPEL Process Manager

To use the notification service and workflow applications, you must complete the following steps.

1. Configure the e-mail server settings as described in *Oracle BPEL Process Manager Developer's Guide* in the Oracle BPEL Process Manager Notification Service chapter. The e-mail server settings are used to send and receive e-mails by the Notification and Workflow services.
2. Acting on workflow tasks through e-mail requires that you configure the actionable e-mail account as described in *Oracle BPEL Process Manager Developer's Guide* in the Oracle BPEL Process Manager Workflow Services chapter.
3. If the notification service is to be used to send notifications using voice, pager, fax, and short message service (SMS) channels, then the wireless service settings must be configured as described in the section on configuring the wireless service provider for voice in the Oracle BPEL Process Manager Notification Service chapter of *Oracle BPEL Process Manager Developer's Guide*.

Step 3: Recommended - Update the Path on UNIX

After installing on a UNIX platform such as Solaris or Linux, add `orabpel/bin` to the path. This enables you to run useful commands such as `obant.sh` and `obversion.sh`, and also facilitates the deployment and running of samples.

See [Table 2-4](#) on page 2-20 for information on how to enable access to the developer prompt.

Step 4: May Be Needed - Re-enable IPv6

If you disabled IPv6 on the target machine prior to installation, you can now enable it.

Postinstallation Steps for Oracle BPEL Process Manager for Developers

Follow these steps only if you are using Oracle BPEL Process Manager for Developers:

- [Step 1: Mandatory - Set JDeveloper Proxy Information](#)
- [Step 2: May be Needed - Configure Oracle BPEL Process Manager to Use Your Oracle Database](#)
- [Step 3: May be Needed - On Windows Only, Configure Startup/Shutdown Files to Use Oracle Database](#)
- [Step 4: Optional - Configure JDeveloper BPEL Designer to Use Online Help from a Local Disk](#)

Step 1: Mandatory - Set JDeveloper Proxy Information

You must add the hostname of your computer to the Oracle JDeveloper preference settings. If you do not, you can receive parsing errors when selecting a WSDL file on the WSDL Chooser window while creating a partner link. Additionally, this step ensures that you can access the online help from the Oracle JDeveloper Web site on the Oracle Technology Network. Follow these steps:

1. Select **Preferences** from the **Tools** main menu.
2. Click **Web Browser and Proxy**.
3. Enter the hostname of your host in the **Exceptions** field. For example, if your hostname is `myhost-pc`:

```
us.acme.com|*.us.acme.com|localhost|127.0.0.1|myhost-pc
```

4. Ensure that `localhost` appears in the **Exceptions** field.
5. Click **OK**.

Step 2: May be Needed - Configure Oracle BPEL Process Manager to Use Your Oracle Database

This procedure is required:

- If you installed Oracle BPEL Process Manager for Developers on UNIX, or
- If you are using an Oracle Database as your dehydration database on Windows, or
- If you require multibyte character set support

To configure an Oracle Database to use Oracle BPEL Process Manager:

1. Find the Oracle BPEL Process Manager `data-sources.xml` file located in the `config` directory under the destination path that you specified during installation. For example, on Windows:

```
C:\BPELPM1012\integration\orabpel\system\appserver\oc4j\j2ee\home\config
```

2. Make a backup copy of the `data-sources.xml` file.
3. Edit the `data-sources.xml` file in a text editor as follows:
 - a. Search for the heading `Use this datasource to connect to Oracle 9i`.

- b. Uncomment the `data-source` elements under this heading.
- c. Edit the connection parameters indicated in bold in this example.

```
<!-- Use this datasource to connect to Oracle 9i -->
<data-source class="com.evermind.sql.DriverManagerDataSource"
  name="BPELServerDataSource"
  location="loc/BPELServerDataSource"
  xa-location="BPELServerDataSource"
  ejb-location="jdbc/BPELServerDataSource"
  connection-driver="oracle.jdbc.OracleDriver"
  max-connections="50"
  min-connections="10"
  connection-retry-interval="30"
  max-connect-attempts="10"
  url="jdbc:oracle:thin:username/password@host:port:sid" />
```

where the default username is `orabpel` and the default password is `orabpel`. The host is the fully qualified name or IP address of the host on which you installed Oracle Database 10g or Oracle9i Database release 9.2.0.5.0 or later. The default port number is 1521.

An example of the connection parameters is:

```
url="jdbc:oracle:thin:orabpel/orabpel@DB_Host:1521:DB_SID" />
```

- d. Search for the heading `Use these datasources to connect to Oracle Lite`.
- e. Comment out the entire section under this heading. For example:

```
<!-- Use these datasources to connect to Oracle Lite -->
<!--
<data-source class="com.evermind.sql.DriverManagerDataSource"
  name="BPELServerDataSource"
  location="loc/BPELServerDataSource"
  xa-location="BPELServerDataSource"
  ejb-location="jdbc/BPELServerDataSource"
  connection-driver="oracle.lite.poljdbc.POLJDBCdriver"
  username="system"
  password="any"
  max-connections="30"
  min-connections="10"
...
-->
```

- 4. Save the `data-sources.xml` file.

Step 3: May be Needed - On Windows Only, Configure Startup/Shutdown Files to Use Oracle Database

Note: This step is needed if you performed Step 2.

For Windows only, if you are using an Oracle Database, then you must configure `startorabpel.bat` and `shutdownorabpel.bat` to use an Oracle Database instead of Oracle Database Lite.

Note: This procedure only applies for Windows installations.

Follow these steps for `startorabpel.bat`:

1. Find the `startorabpel.bat` file located in the `bin` folder under the destination path that you specified during installation. For example:
`C:\BPELPM1012\integration\orabpel\bin`
2. Make a backup copy of the `startorabpel.bat` file.
3. Edit the `startorabpel.bat` file as follows:
 - Remove or comment out the line that starts Oracle Database Lite as shown:

```
@rem start /d "C:\BPELPM1012\integration\orabpel\bin" /min /realtime start_olite.bat
```
4. Save the `startorabpel.bat` file.

Repeat similar steps for `shutdownorabpel.bat`:

1. Find the `shutdownorabpel.bat` file located in the `bin` folder under the destination path that you specified during installation. For example:
`C:\BPELPM1012\integration\orabpel\bin`
2. Make a backup copy of the `shutdownorabpel.bat` file.
3. Edit the `shutdownorabpel.bat` file as follows:
 - Remove or comment out the line that stops Oracle Database Lite as shown:

```
@rem start /min /d "C:\BPELPM1012\integration\orabpel\bin\kill_olite.bat"
```
4. Save the `shutdownorabpel.bat` file.

Step 4: Optional - Configure JDeveloper BPEL Designer to Use Online Help from a Local Disk

The steps in this section are optional and are only helpful if you want to use online help from a local disk. (Online help for Oracle JDeveloper is available from the Oracle JDeveloper Web site. Therefore, to use the most current online help from the Web, ensure that you have an external connection to access the files.)

To install the online help to use locally:

1. Download `jdev1012_doc.zip` from the Oracle JDeveloper documentation page on Oracle Technology Network at:
<http://www.oracle.com/technology/products/jdev>
2. Install the documentation into Oracle JDeveloper by extracting the files into the directory where Oracle JDeveloper is installed.
 The `jdev_install\jdev\doc\ohj` directory is created, as well as the `jdev_install\jdev\tutorials` directory.
3. From the JDeveloper BPEL Designer **Tools** menu, select **Preferences** and then **Documentation**.
4. Select **Use Local Documentation**.

If you install the documentation into any other local directory, then you need to configure the location in JDeveloper as follows:

1. Start JDeveloper BPEL Designer.
2. Select **Tools > Preferences > Documentation** from the JDeveloper main menu.

3. Select **Use Local Documentation**.
4. Set the full path to where the local documentation is installed.
5. Click **OK**.

Note: Oracle BPEL Process Manager must be restarted for changes to take effect.

Postinstallation Steps for Oracle BPEL Process Manager for OracleAS Middle Tier

Follow these steps only if you are using Oracle BPEL Process Manager for OracleAS Middle Tier.

- [Step 1: Mandatory - Restart Oracle Enterprise Manager 10g Application Server Control Console](#)
- [Step 2: Mandatory - If Using Oracle Identity Management - Restart Oracle BPEL Process Manager](#)
- [Step 3: Optional - Configuring SSL Support for Oracle Internet Directory](#)

Step 1: Mandatory - Restart Oracle Enterprise Manager 10g Application Server Control Console

Stop and restart Oracle Enterprise Manager 10g Application Server Control Console as follows:

```
emctl stop em
```

```
emctl start em
```

Step 2: Mandatory - If Using Oracle Identity Management - Restart Oracle BPEL Process Manager

If you are using Oracle BPEL Process Manager with Oracle Identity Management, you must restart Oracle BPEL Process Manager after installation. The restart ensures that Oracle Internet Directory is correctly configured.

Use `opmnctl` to stop and restart Oracle BPEL Process Manager:

```
Oracle_Home\opmn\bin\opmnctl stopproc ias-component=OraBPEL
```

```
Oracle_Home\opmn\bin\opmnctl startproc ias-component=OraBPEL
```

Step 3: Optional - Configuring SSL Support for Oracle Internet Directory

If during the Oracle Application Server Metadata Repository and middle tier installations, you specified that Oracle Application Server components connect to Oracle Internet Directory through secure socket layer (SSL) connections, you must enable your Oracle BPEL Process Manager SSL port as a postinstallation task.

Perform the following steps:

1. Update the `Oracle_Home\j2ee\OC4J_BPEL\config\jazn.xml` file as follows (changes shown in bold):
 - Enter the SSL port number you are using (for this example, 636)
 - Add the property name line that enables SSL support

For example:

```
<jazn provider="LDAP" location="ldap://example.com:636" default-realm="us">
  <property name="ldap.user" value="cn=orcladmin"/>
  <property name="ldap.password" value="!welcome1"/>
  <property name="ldap.protocol" value="ssl"/>
</jazn>
```

2. Update the *Oracle_*

Home\integration\orabpel\system\services\config\is_config.xml file as follows (changes shown in bold):

- Enter the SSL port number you are using (must be the same number as entered in Step 1)
- Add the property name line that enables SSL support

For example:

```
<BPMSecurityServiceConfig
xmlns="http://www.oracle.com/pcbpel/identityservice/isconfig">
  <provider providerType="JAZN" name="oid" >
    <connection url="ldap://example.com:636" binddn="cn=orcladmin"
      password="welcome1" encrypted="false">
      <property name="securityProtocol" value="ssl" />
    </connection>
  </provider>
</BPMSecurityServiceConfig>
```

Postinstallation Verification Tasks for Oracle BPEL Process Manager

This section helps you verify your installation of Oracle BPEL Process Manager. Completing these steps help confirm a fully functional installation of the various installed components.

[Table 2-4](#) provides instructions for accessing the various components.

Table 2–4 Accessing Oracle BPEL Process Manager Components

To Access The...	On Windows...	On UNIX...
Oracle BPEL Server	<p>To start Oracle BPEL Server:</p> <p>Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > Start BPEL PM Server</p> <p>To stop Oracle BPEL Server:</p> <p>Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > Stop BPEL PM Server</p>	<p>To start Oracle BPEL Server:</p> <p>From <code>\$ORACLE_HOME/integration/orabpel/bin:</code></p> <p><code>startorabpel.sh</code></p> <p>To stop Oracle BPEL Server:</p> <p>From <code>\$ORACLE_HOME/integration/orabpel/bin:</code></p> <p><code>shutdownorabpel.sh</code></p>
JDeveloper BPEL Designer	To start JDeveloper BPEL Designer, select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > JDeveloper BPEL Designer or use the shortcut icon that is placed on your desktop.	<code>\$ORACLE_HOME/integration/jdev/jdev/bin/jdev</code>
Oracle BPEL Console	<p>You must first start Oracle BPEL Server.</p> <p>To start Oracle BPEL Console:</p> <ol style="list-style-type: none"> Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > BPEL Console <p>You can also start Oracle BPEL Console from your Web browser using the URL for your installation, which can be found in <code>bpelsetupinfo.txt</code>.</p>	<p>First start Oracle BPEL Server.</p> <p>To start the Oracle BPEL Console:</p> <ul style="list-style-type: none"> From your Web browser, log on to the URL for your installation, which can be found in <code>bpelsetupinfo.txt</code>.
Developer Prompt for easy access to samples	Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > Developer Prompt to open up a command prompt at the <code>c:\Oracle_Home\integration\orabpel\samples</code> directory.	<p>Set the Developer Prompt in the Bourne shell:</p> <pre>\$ ORACLE_HOME=/home/oracle/installs/midtier \$ export ORACLE_HOME \$ PATH=\$ORACLE_HOME/integration/orabpel/bin:\$PATH \$ export PATH</pre>
Oracle BPEL Process Manager Samples and Tutorials	<p>For details about BPEL samples and additional tutorials available for use:</p> <p>Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > Getting Started with Samples</p>	<p>Log into the following URL using your Web browser:</p> <p><code>\$ORACLE_HOME/integration/orabpel/samples/samplehome.html</code></p>
Oracle BPEL Worklist Application	<p>To access the login window for Oracle BPEL Worklist Application:</p> <p>Select Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2 > Sample Worklist Application</p> <p>You may also start Oracle BPEL Worklist Application from your Web browser using the URL for your installation, which is found in <code>bpelsetupinfo.txt</code>.</p>	<p>First start Oracle BPEL Server.</p> <p>To start Oracle BPEL Worklist Application:</p> <ul style="list-style-type: none"> From your Web browser, log on to the URL for your installation, which is found in <code>bpelsetupinfo.txt</code>.

See Also:

- *Oracle BPEL Process Manager Quick Start Guide*
- *Oracle BPEL Process Manager Order Booking Tutorial*
- *Oracle BPEL Process Manager Developer's Guide*
- *Oracle Adapters for Files, FTP, Databases, and Enterprise Messaging User's Guide*

Globalization for Oracle BPEL Process Manager

This section provides information about globalization and optional considerations. It includes these sections:

- [Oracle BPEL Console and BPEL Server Locales](#)
- [XSLT Mapper Parsing](#)

Oracle BPEL Console and BPEL Server Locales

Oracle BPEL Console is available in the following languages: French, German, Italian, Spanish, Portuguese, Japanese, Korean, Simplified Chinese, and Traditional Chinese. JDeveloper BPEL Designer is only available in English and Japanese. Oracle BPEL Console and JDeveloper BPEL Designer retrieve and display text messages from Oracle BPEL Server in the server locale on certain pages. To avoid mixed languages being displayed, make sure Oracle BPEL Console and Oracle BPEL Server are using the same locale.

XSLT Mapper Parsing

The XSLT mapper uses UTF-8 encoding for your operating system to read XSL content from files. Therefore, parsing errors can occur if encoding of XSL content is different from UTF-8.

Determining the Version of Oracle BPEL Process Manager

You can determine the version number of Oracle BPEL Process Manager for support purposes.

To check the JDeveloper BPEL Designer version:

- Start JDeveloper BPEL Designer and select **About** from the **Help** menu. Look for the line **BPEL Designer**.

To check the Oracle BPEL Server version on Windows:

1. Select **Start > All Programs > Oracle - Oracle_Home > Oracle BPEL Process Manager 10.1.2** and select **Developer Prompt**.
2. Enter `obversion` at the command prompt.

To check the Oracle BPEL Server version on UNIX:

- Go to `$ORACLE_HOME/integration/orabpel/bin` and run `obversion.sh`.

Directory Structure of Oracle BPEL Process Manager

[Table 2–5](#) shows the directory structure that is created after completing the installation of JDeveloper BPEL Designer and Oracle BPEL Process Manager.

Table 2–5 Directory Structure for Oracle BPEL Process Manager Installed Components

This Directory	Contains...
cfgtoollogs	Oracle Universal Installer configuration tools logs.
diagnostics	Oracle Universal Installer diagnostic information.
integration	These subdirectories:
<ul style="list-style-type: none"> ■ jdev <p>Note: This directory is installed with the BPEL Process Manager for Developers option only</p>	<ul style="list-style-type: none"> ■ JDeveloper BPEL Designer and Oracle JDeveloper files and directories, including the workspace and project directories (under jdev/jdev/mywork) in which your BPEL processes are created and designed
<ul style="list-style-type: none"> ■ orabpel 	<ul style="list-style-type: none"> ■ Oracle BPEL Process Manager files and directories, which include the samples
integration/orabpel	These subdirectories:
<ul style="list-style-type: none"> ■ bin ■ docs ■ domains ■ install ■ lib ■ samples ■ system 	<ul style="list-style-type: none"> ■ BPEL server binary and script files ■ Javadocs and API documentation ■ The default domain, plus new domains you create ■ BPEL installer-related files ■ Oracle BPEL Process Manager JAR files ■ All samples and associated files ■ Oracle Application Server files, classes, and logs.
inventory	Oracle installed products.
jdk	The required Java Developer's Kit version.
jre	Java runtime environment files and libraries.
lib	Servlet jar file.
OPatch	The opatch utility and files to help patch components within this product.
oui	Oracle Universal Installer.
perl	The required version of Perl for the opatch utility.

Deinstallation Tasks for Oracle BPEL Process Manager

Follow these instructions to deinstall Oracle BPEL Process Manager:

1. Start Oracle Universal Installer.

On...	Do This...
UNIX	Enter the following command at the operating system prompt: ./runInstaller
Windows	Select Start > All Programs > Oracle - Oracle_Home > Oracle Installation Products > Universal Installer

2. Select **Deinstall Products**.
3. Expand the Oracle home that contains the products to deinstall.
4. Select **Oracle BPEL Process Manager**.

5. Click **Yes** when prompted.

The deinstallation does not remove files created after installation (for example, project files, server files, log files, and so on). You must manually remove these files and directories. Oracle recommends that you delete the `integration` directory under your Oracle home after backing up any required files.

Note:

- If you want to deinstall and reinstall Oracle BPEL Process Manager in the *same* Oracle home, ensure that you first remove files and subdirectories under `Oracle_Home/integration/orabpel` and `Oracle_Home/integration/jdev` before performing the Oracle BPEL Process Manager reinstallation. (The only directory in this path that does not need to be removed is the `log` directory. Other than this directory, the `Oracle_Home/integration/orabpel` and `Oracle_Home/integration/jdev` directories must be empty for reinstallations into the same Oracle home.
 - You cannot deinstall and then reinstall within the same Oracle home during the same OUI install session. You must exit the OUI after deinstallation, clean out the directory structure, and then restart a fresh installation.
-

Troubleshooting Oracle BPEL Process Manager Installation and Configuration

This section contains troubleshooting tips and information for issues that you can encounter. It includes these topics:

- [Optimizing Transaction Timeout for Oracle BPEL Server](#)
- [Preventing Timeouts with Oracle Application Server Containers for J2EE](#)
- [Finding Metrics in Application Server Control Console](#)
- [Executing Upgrade Scripts](#)
- [Oracle BPEL Server Processes Not Starting](#)
- [Dehydration Store Maintenance](#)

Optimizing Transaction Timeout for Oracle BPEL Server

The server timeout value is specified by the `transaction-config timeout` parameter in the `server.xml` file, located in:

- `Oracle_Home\j2ee\OC4J_BPEL\config` (Oracle BPEL Process Manager for OracleAS Middle Tier)
- `Oracle_Home\integration\orabpel\system\appserver\oc4j\j2ee\home\config` (Oracle BPEL Process Manager for Developers)

The default value of the `transaction-config timeout` parameter is "60000" milliseconds, or one minute, which may not be optimal for your server load.

A related parameter, `syncMaxWaitTime`, resides in the domain configuration file `domain.xml`, which is located in *Oracle_Home\integration\orabpel\domains\default\config* (for both Oracle BPEL Process Manager for OracleAS Middle Tier and Oracle BPEL Process Manager for Developers)

In general, `syncMaxWaitTime` should always be less than `transaction-config timeout` in the `server.xml` file.

To change the `transaction-config timeout` parameter value:

1. Open the file `server.xml` in a text editor.
2. Find the line for the `transaction-config timeout` parameter. For example:

```
<transaction-config timeout="60000" />
```

3. Change the value to a greater duration. An example that sets the duration to five minutes is as follows:

```
<transaction-config timeout="300000" />
```

You can change the `syncMaxWaitTime` parameter value by using the Oracle BPEL Admin Console. Alternatively, you can change the `syncMaxWaitTime` setting manually, as follows:

1. Open the file `domain.xml` in a text editor.
2. Find the line for the `syncMaxWaitTime` parameter. For example:

```
<property id="syncMaxWaitTime">
```

3. Change the value to a greater duration, making sure that this is less than the duration you set for `transaction-config timeout`. For example:

```
<property id="syncMaxWaitTime">
  <name>Delivery result receiver maximum wait time</name>
  <value>120</value>
```

The default is 45 seconds, and in this example the duration is changed to 120 seconds, or three minutes.

Alternatively, you can reduce the database activity to the BPEL dehydration database. For example, you can change the `AuditLevel` value to "production" to reduce the database activity. However, doing so takes away some of the useful information from the Console Audit instances details in the Oracle Enterprise Manager 10g Application Server Control Console.

Preventing Timeouts with Oracle Application Server Containers for J2EE

With slow processors, heavily loaded systems, or very large numbers of business processes, Oracle Application Server Containers for J2EE (OC4J) may time out while Oracle BPEL Process Manager is shutting down. If this occurs, then Oracle Enterprise Manager 10g Application Server Control Console displays an error message.

To prevent Oracle Application Server Containers for J2EE from timing out with Oracle BPEL Process Manager, you can increase the `Stop Timeout` parameter value in the `opmn.xml` file to 3 or 4 minutes.

Finding Metrics in Application Server Control Console

The metrics for Start Time, CPU Usage, and Memory Usage for Oracle BPEL Process Manager are displayed as "Not Yet Available" in Oracle Enterprise Manager 10g Application Server Control Console. To see these metrics for Oracle BPEL Process Manager, go to the page for Oracle Application Server Containers for J2EE.

Executing Upgrade Scripts

If you copy `upgrade_202_203_oracle.sql` to a different directory in order to execute it, ensure that `sensor_oracle.sql` is also copied to the same directory. The `upgrade_202_203_oracle.sql` script automatically executes the `sensor_oracle.sql` script. If both scripts are not in the same directory, execution fails.

Also ensure that you do not run these SQL scripts from a directory path that includes spaces (for example, `C:\Documents and Settings\mydesktop`). Spaces in the directory path can cause execution to fail.

Oracle BPEL Server Processes Not Starting

Oracle BPEL Console uses the Oracle Application Server Web Cache port in this release. Therefore, both Oracle HTTP Server and Oracle Application Server Web Cache must be running for BPEL server processes to be available. You can start these processes from Oracle Enterprise Manager 10g Application Server Control Console by selecting the process and then clicking **Start**.

Alternatively, you can start the processes from the Developer prompt as follows:

To start Oracle HTTP Server, enter:

```
opmnctl startproc process-type=HTTP_server
```

To start Oracle Application Server Web Cache, enter:

```
opmnctl startproc process-type=WebCache
```

Dehydration Store Maintenance

This section explains how you can periodically reclaim free space in the dehydration store and manage the future growth of the store.

Oracle recommends that you create the `ORABPEL` tablespace with auto segment space management turned on. This enables you to conveniently reclaim free space in the dehydration store.

With auto segment space management turned on, use the following commands to regain free space:

```
alter table cube_scope enable row movement;
alter table cube_scope shrink space compact;
alter table cube_scope shrink space;
alter table cube_scope disable row movement;
```

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