

**Oracle® Communications
Pricing Design Center**

Installation and System Administration Guide

Release 11.1

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Preface

This guide provides instructions for installing and administering Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 12.

- If PDC is not already installed, the complete PDC software is installed.
- If PDC is already installed, PDC 11.1 Patch Set 12 is installed on an existing PDC 11.1 patch set installation.

Audience

This document is intended for system administrators, database administrators, and developers who install and configure PDC.

Before reading this guide, you should have familiarity with PDC. See *PDC User's Guide* for more information.

PDC requires Oracle Database and Oracle WebLogic Server. See the documentation for those products for installation and configuration instructions.

Downloading Oracle Communications Documentation

Product documentation is located on Oracle Help Center:

<http://docs.oracle.com>

Additional Oracle Communications documentation is available from the Oracle software delivery Web site:

<https://edelivery.oracle.com>

Related Documents

For step-by-step instructions for tasks that you perform in PDC, log in to PDC and see the PDC Help.

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For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit
<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing
impaired.

Document Revision History

The following table lists the revision history for this book:

Version	Date	Description
E24095-03	September 2012	Initial release.
E24095-04	April 2013	Documentation updates for PDC 11.1 Patch Set 3. ■ Made minor formatting and text changes. ■ Updated the "Additional Software Requirements" section. ■ Added the "Changing Encrypted Passwords in the Configuration Files" section.
E24095-05	October 2013	Documentation updates for PDC 11.1 Patch Set 4. ■ Made minor formatting and text changes. ■ Added the following sections: Creating Service-Event Maps About the ECE Pricing Updater ■ Updated the following sections: Supported Operating Systems Additional Software Requirements Post-Installation Tasks for the Complete PDC Software Install Loading Sample Data Managing PDC Security Managing the PDC Transformation Process

Version	Date	Description
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E24095-07	November 2014	Documentation updates for PDC 11.1 Patch Set 7. ■ Made minor formatting and text changes. ■ Updated the following sections: Supported Operating Systems Additional Software Requirements Pre-Installation Tasks for the Complete PDC Software Installation Pre-Installation Tasks for the PDC Patch Installation Changing Encrypted Passwords in the Configuration Files

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E24095-09	August 2015	Documentation updates for PDC 11.1 Patch Set 7. ■ Updated the "Installing the PDC Patch Set" section.
E24095-10	April 2016	Documentation updates for PDC 11.1 Patch Set 8. ■ Updated the "Additional Software Requirements" section.
E24095-11	April 2017	Documentation updates for PDC 11.1 Patch Set 9. ■ Updated the "Additional Software Requirements" section. ■ Updated the "Pricing Design Center Pre-Installation Tasks" chapter.
E24095-12	August 2017	Documentation updates for PDC 11.1 Patch Set 10. ■ Updated the following sections: Additional Software Requirements Installing PDC Installing BRM Integration Pack Installing the PDC Patch Set Installing the BRM Integration Pack Patch ■ Added the following section: Backing Up and Restoring PDC
E24095-13	December 2017	Documentation updates for PDC 11.1 Patch Set 11. ■ Updated the following sections: Additional Software Requirements Installing PDC Installing BRM Integration Pack Installing the PDC Patch Set Installing the BRM Integration Pack Patch

Version	Date	Description
E24095-14	March 2018	Documentation updates for PDC 11.1 Patch Set 12. ■ Updated the following sections: Installing PDC Installing BRM Integration Pack Installing the PDC Patch Set Installing the BRM Integration Pack Patch ■ Added the following section: Migrating Offer Profiles from BRM into PDC

Pricing Design Center Installation Overview

This chapter provides an overview of the installation procedure for Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 9.

Overview of PDC 11.1 Patch Set 12 Installation

You can install PDC 11.1 Patch Set 12 either as a complete installation or as a patch on a previous PDC 11.1 patch set.

When installing PDC 11.1 Patch Set 12:

- If the PDC Installer does not detect an existing PDC 11.1 patch set installation, it installs the complete PDC software.
- If the PDC Installer detects an existing PDC 11.1 patch set installation, it installs the patch updates on the existing PDC 11.1 patch set installation.

Overview of the PDC Complete Software Installation Procedure

The following is an outline of the installation procedure for the PDC complete software:

1. Plan your installation. Planning your installation involves:
 - Determining the scale of your implementation (for example, is it a small test system or a large production system?)
 - Assessing how many physical computers you need and which software components to install on which computers
 - Planning the system topology (for example, determining whether you want a standalone deployment or a clustered deployment)
2. Review system requirements.
3. Perform the following pre-installation tasks:
 - Install and configure Oracle Database
 - Install and configure Oracle WebLogic Server
 - Install and configure Oracle Communications Billing and Revenue Management (BRM)
 - Install Java Runtime Environment (JRE)/Java Development Kit (JDK)
4. Install the complete PDC software.
5. Perform the post-installation configuration tasks.

6. Verify the installation.

Overview of the PDC Patch Installation Procedure

The following is an outline of the installation procedure for the PDC patch:

1. Plan your installation.
2. Review system requirements.
3. Perform the following pre-installation tasks:
 - Shut down the current instance.
 - Back up your existing PDC installation.
 - If you are using Oracle Communications Billing and Revenue Management Elastic Charging Engine (ECE) for usage rating, install ECE 11.3 Patch Set 7.
See *ECE Installation Guide* for installing ECE 11.3 Patch Set 7.
 - Install BRM 7.5 Patch Set 20.
See *BRM 7.5 Patch Set 20 Installation Guide* for installing BRM 7.5 Patch Set 20.
 - Install the recommended version of JRE/JDK.
 - Upgrade WebLogic Server to the recommended version.
 - Enable the SSL Port for the WebLogic Server domain.
 - Upgrade Oracle Application Development Runtime to the recommended version.
4. Install the PDC patch on the existing installation.
5. Perform the post-installation configuration tasks.
6. Verify the installation.

Ensuring a Successful PDC Installation

Oracle recommends that the installation and configuration of the Oracle database be performed by an experienced database administrator.

To ensure that the PDC installation is successful, follow these guidelines:

- As you install each component (for example, the Oracle Database and WebLogic Server), verify that the component installed successfully before continuing the installation process.
- Pay close attention to the system requirements. Before you begin installing the application, ensure that your system has the required base software. In addition, ensure that you know all the required configuration values, such as host names and port numbers.
- Make a note of any new configuration values as you create them. You will be required to enter configuration values later in the procedure.

Pricing Design Center System Requirements

This chapter describes the software and hardware requirements for installing Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 12.

Software Requirements

PDC is an application that is deployed in an Oracle WebLogic Server domain. You must install and connect all required software for optimal performance.

Supported Operating Systems

[Table 2–1](#) lists operating systems supported for PDC.

Note: PDC 11.1 patch set server components do not support any 32-bit server operating systems.

Table 2–1 PDC Operating Systems Requirements

Product	Version
Oracle Linux, x86-64 (64bit) Important: To protect from security vulnerabilities, ensure you apply the latest Critical Patch Updates. See PDC is certified on OL 5 and 6 and you should regularly apply the latest patch set for OL 5 and 6 to ensure that your running OL has the latest security fixes.	For PDC 11.1 Patch Set 2 through PDC 11.1 Patch Set 3: ■ 5 UL3+ For PDC 11.1 Patch Set 4: ■ 5 UL7+ For PDC 11.1 Patch Set 5: ■ 5 UL8+ ■ 6 UL3+ For PDC 11.1 Patch Set 6 through PDC 11.1 Patch Set 12: ■ 6 UL3+

Table 2–1 (Cont.) PDC Operating Systems Requirements

Product	Version
Red Hat Enterprise Linux, x86-64 (64bit) Important: To protect from security vulnerabilities, ensure you apply the latest Critical Patch Updates. See PDC is certified on RHEL 5 and 6 and you should regularly apply the latest patch set for RHEL 5 and 6 to ensure that your running RHEL has the latest security fixes.	For PDC 11.1 Patch Set 2 through PDC 11.1 Patch Set 3: ■ 5 UL3+ For PDC 11.1 Patch Set 4: ■ 5 UL7+ For PDC 11.1 Patch Set 5: ■ 5 UL8+ ■ 6 UL3+ For PDC 11.1 Patch Set 6 through PDC 11.1 Patch Set 12: ■ 6 UL3+
Oracle Solaris for SPARC (64bit)	10 Update 4+

Additional Software Requirements

Table 2–2 lists software required for running PDC.

Table 2–2 PDC Software Requirements

Product	Version	Disk Space
Oracle WebLogic Server 11g Standard Edition or Enterprise Edition	For PDC 11.1 Patch Set 2 and PDC 11.1 Patch Set 3: ■ 10.3.4 For PDC 11.1 Patch Set 4: ■ 10.3.4 or 10.3.5 For PDC 11.1 Patch Set 5 through PDC 11.1 Patch Set 12: ■ 10.3.6 with patch 12932224	1 GB
Oracle Fusion Middleware 11g Application Development Framework	For PDC 11.1 Patch Set 2 and PDC 11.1 Patch Set 3: ■ 11.1.1.4.0 with Patch 10632216 For PDC 11.1 Patch Set 4: ■ 11.1.1.4.0 or 11.1.1.5.0 For PDC 11.1 Patch Set 5 through PDC 11.1 Patch Set 12: ■ 11.1.1.6.0	1 GB

Table 2–2 (Cont.) PDC Software Requirements

Product	Version	Disk Space
Oracle Database 11g Enterprise Edition (for single or Oracle Real Application Clusters (Oracle RAC) installation)	For PDC 11.1 Patch Set 2 through PDC 11.1 Patch Set 12: ■ 11g Release 1 (11.1.0.6) or 11g Release 2 (11.2.0.3)	1.2 GB
Oracle Database 12c Enterprise Edition	For PDC 11.1 Patch Set 4 through PDC 11.1 Patch Set 12: ■ 12c Release 1 (12.1.0.1.0)	1.2 GB

Table 2–2 (Cont.) PDC Software Requirements

Product	Version	Disk Space
Oracle Communications Billing and Revenue Management (BRM) on Linux x86 or x86-64 or Solaris SPARC (64bit)	For PDC 11.1 Patch Set 2: 7.5 with Patch Set 2 (14334024) and interim patch 14559841	BRM server: 300 MB BRM database: 2 to 5 GB per 10,000 customers per year. This requirement varies greatly with the number of accounts and the amount of activity.
	For PDC 11.1 Patch Set 3: 7.5 with Patch Set 4 (16429299)	
	For PDC 11.1 Patch Set 4: 7.5 with Patch Set 6 (17407200)	
	For PDC 11.1 Patch Set 5: 7.5 with Patch Set 8 (18201600)	
	For PDC 11.1 Patch Set 6: 7.5 with Patch Set 10 (19678435)	
	For PDC 11.1 Patch Set 7: 7.5 with Patch Set 12 (20873429) and interim patch 21231092	
	For PDC 11.1 Patch Set 8: 7.5 with Patch Set 15 (22738803)	
	For PDC 11.1 Patch Set 9: 7.5 with Patch Set 17 (25101805) and the interim patch 25839300 7.5 with Patch Set 18 (25596735)	
	For PDC 11.1 Patch Set 10: 7.5 with Patch Set 18 (25596735)	
	For PDC 11.1 Patch Set 11: 7.5 with Patch Set 19 (26356818) 7.5 with Patch Set 20 (26940838)	

Table 2–2 (Cont.) PDC Software Requirements

Product	Version	Disk Space
	For PDC 11.1 Patch Set 12: 7.5 with Patch Set 20 (26940838)	
BRM Elastic Charging Engine (ECE)	For PDC 11.1 Patch Set 6: 11.2 with Patch Set 4 (19586350) For PDC 11.1 Patch Set 7: 11.2 with Patch Set 6 (20758606) For PDC 11.1 Patch Set 8: 11.3 For PDC 11.1 Patch Set 9: 11.3 with Patch set 3 (25655714) For PDC 11.1 Patch Set 10: 11.3 with Patch set 4 (26420699) For PDC 11.1 Patch Set 11: 11.3 with Patch set 5 (27145275) 11.3 with Patch set 6 (27406358) For PDC 11.1 Patch Set 12: 11.3 with Patch set 7 (27531574)	N/A

Table 2–2 (Cont.) PDC Software Requirements

Product	Version	Disk Space
Internet Browser	For PDC 11.1 Patch Set 2 and PDC 11.1 Patch Set 3: ■ Microsoft Internet Explorer 9 or later ■ Mozilla Firefox 14 For PDC 11.1 Patch Set 4: ■ Microsoft Internet Explorer 9 or later ■ Mozilla Firefox 23 or later For PDC 11.1 Patch Set 5 and PDC 11.1 Patch Set 6: ■ Microsoft Internet Explorer 9 or 10 ■ Mozilla Firefox 23 For PDC 11.1 Patch Set 7 and PDC 11.1 Patch Set 8: ■ Microsoft Internet Explorer 10 ■ Mozilla Firefox 38 For PDC 11.1 Patch Set 9 through PDC 11.1 Patch Set 12: ■ Microsoft Internet Explorer 11 on Windows 10 ■ Mozilla Firefox 38	N/A
Java	For PDC 11.1 Patch Set 2 through PDC 11.1 Patch Set 4: ■ JDK 1.6 (Update 33 or later with heap size of minimum 500 MB) Note: JDK 1.6 Update 60 (64bit) is recommended to fix security issues. For PDC 11.1 Patch Set 5 through PDC 11.1 Patch Set 12: ■ JDK 1.7 (Update 51 or later with heap size of minimum 500 MB)	N/A

The PDC Installer checks for all required software and displays errors if it detects any missing or unavailable components.

Note: For details on how to download a required software component, see the appropriate section of this guide.

About Critical Patch Updates

You should install all Critical Patch Updates as soon as possible. To download Critical Patch Updates, find out about security alerts, and enable email notifications about Critical Patch Updates, see the Security topic on Oracle Help Center:

<http://www.oracle.com/technetwork/topics/security/whatsnew/index.html>

Hardware Requirements

The number and configuration of the computers that you employ for your PDC installation depend on the scale and the kind of deployment you have planned according to your networks.

Table 2–3 provides the minimal hardware requirement for PDC installed on a single managed server in a WebLogic Server domain.

Table 2–3 PDC Minimum Hardware Requirements

Component	Requirement
Hard disk	1.5 GB of free disk space Note: A minimum of 1.5 GB should be free in the Oracle WebLogic Server domain home.
Processor	Oracle recommends using twin cores, each running at 1.5 GHz CPU.
Memory	A minimum of 4 GB physical memory and 4 GB swap. If you plan to have the database installed on the same server as PDC, the minimum memory requirements increase to 6 GB physical memory and 6 GB swap.

Information Requirements

This section describes the information that you will be required to provide during the PDC installation procedure. You define some of these configuration values when you install and configure Oracle Database and WebLogic Server.

- If you are installing PDC for the first time, see "[Information Requirements for the Complete PDC Software Installation](#)".
- If you are installing the PDC 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation, see "[Information Requirements for the PDC Patch Installation](#)".

Important: Oracle recommends that you print the tables and record the values for future reference.

Information Requirements for the Complete PDC Software Installation

This section describes the information that you will be required to provide during the complete PDC software installation procedure.

Pricing Design Center WebLogic Server Connection Information

Table 2–4 lists the details for the WebLogic Server domain (the domain on which you deploy PDC) that are required during the complete PDC software installation.

Table 2–4 Pricing Design Center WebLogic Server Connection Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the WebLogic Server domain is configured.	-
Port Number	The port number assigned to the WebLogic Server domain administration server.	-
User Name	The WebLogic Server domain administrator user name.	-
Password	The WebLogic Server domain administrator user password.	-
WebLogic Home	The path of the directory in which the WebLogic Server software is installed. For example, <i>MW_Home/wlserver_10.3</i> , where <i>MW_Home</i> is the directory in which the Oracle Middleware components are installed.	-

PDC Database Connection Information

Table 2–5 lists PDC database details that are required during the complete PDC software installation.

Table 2–5 PDC Database Connection Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the PDC database is configured.	-
Port Number	The port number assigned to the PDC database service.	-
User Name	The PDC database user name. This user should have the following capabilities on the PDC database: create user, grant any role, grant any privileges, select any table for Enterprise edition, and DBA for XE.	-
Password	The database user password.	-
Service Name	The name of the PDC database service.	-

PDC Schema Information

Table 2–6 lists the tablespace details that are required to create the PDC schema during the complete PDC software installation.

Table 2–6 PDC Schema Information

Field	Description	Value
PDC Tablespace	The name of the tablespace for the PDC schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the PDC schema. This field is case-sensitive.	-

BRM Server Information

Table 2–7 lists the BRM server details that are required during the complete PDC BRM Integration Pack installation.

Table 2–7 BRM Server Information

Field	Description	Value
BRM	The path to the directory in which BRM is installed. The path is defined in the \$PIN_HOME environment variable.	-
BRM Pipeline	The path to the directory in which Pipeline Manager is installed. The path is defined in the \$IFW_HOME environment variable.	-
BRM ThirdParty Software	The path to the directory in which BRM ThirdParty software is installed.	-

BRM Pipeline Manager Database Information

Table 2–8 lists the Pipeline Manager database details that are required during the complete PDC BRM Integration Pack installation.

Table 2–8 BRM Pipeline Database Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the BRM pipeline database is configured.	-
Port Number	The port number assigned to the BRM pipeline database service.	-
User Name	The BRM pipeline database schema user name.	-
Password	The BRM pipeline database schema user password.	-
Service Name	The name of the BRM pipeline database service.	-

Transformation Cross-Reference Database Information

Table 2–9 lists transformation cross-reference database details that are required during the complete PDC BRM Integration Pack installation.

Table 2–9 Transformation Cross-Reference Database Information

Field	Description	Value
Hostname	The IP address or the host name of the machine on which the transformation cross-reference database is configured.	-
Port number	The port number assigned to the transformation cross-reference database service.	-
User name	The transformation cross-reference database user name. This user should have the following capabilities on the transformation cross-reference database: create user, grant any role, grant any privileges, select any table for Enterprise edition, and DBA for XE.	-

Table 2–9 (Cont.) Transformation Cross-Reference Database Information

Field	Description	Value
Password	The transformation cross-reference database user password.	-
Service Name	The name of the transformation cross-reference database service.	-

Transformation Cross-Reference Schema Information

Table 2–10 lists the tablespace details that are required to create the transformation cross-reference schema during the complete PDC BRM Integration Pack installation.

Table 2–10 Transformation Cross-Reference Schema Information

Field	Description	Value
PDC Tablespace	The name of the PDC tablespace for the transformation cross-reference schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the transformation cross-reference schema. This field is case-sensitive.	-

Migration Cross-Reference Database Information

Table 2–11 lists the migration cross-reference database details that are required during the complete PDC BRM Integration Pack installation.

Note: The migration cross-reference database details are required only if you want to migrate pricing and setup components from the BRM database to the PDC database.

Table 2–11 Migration Cross-Reference Database Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the migration cross-reference database is configured.	-
Port Number	The port number assigned to the migration cross-reference database service.	-
User Name	The migration cross-reference database user name.	-
Password	The migration cross-reference database user password.	-
Service Name	The name of the migration cross-reference database service.	-

Migration Cross-Reference Schema Information

Table 2–12 lists the tablespace details that are required to create the migration cross-reference schema during complete PDC BRM Integration Pack installation.

Note: The migration cross-reference schema details are required only if you want to migrate price lists from the BRM database to the PDC database.

Table 2–12 Migration Cross-Reference Schema Information

Field	Description	Value
PDC Tablespace	The name of the PDC tablespace for the migration cross-reference schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the migration cross-reference schema. This field is case-sensitive.	-

Information Requirements for the PDC Patch Installation

This section describes the information that you will be required to provide during the PDC patch installation procedure.

To apply the patch on top of an existing PDC 11.1 patch set installation, use the values that you provided during the PDC 11.1 Patch Set 2 installation.

PDC Installation Details

[Table 2–13](#) lists the PDC installation details that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–13 PDC Installation Details

Field	Description	Value
Name	The name of the PDC 11.1 Patch Set 2 installation.	-
Path	The path to the PDC 11.1 Patch Set 2 installation directory.	-

Pricing Design Center WebLogic Server Connection

[Table 2–14](#) lists the details for the WebLogic Server domain (the domain on which you deployed PDC 11.1 Patch Set 2) that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–14 Pricing Design Center WebLogic Server Connection Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the Oracle WebLogic Server domain is configured.	-
Port Number	The port number assigned to the WebLogic Server domain administration server.	-
User Name	The WebLogic Server domain administrator user name.	-
Password	The WebLogic Server domain administrator user password.	-

Table 2–14 (Cont.) Pricing Design Center WebLogic Server Connection Information

Field	Description	Value
WebLogic Home	The path to the directory in which the WebLogic Server software is installed. For example, <i>MW_Home/wlserver_10.3</i> .	-
KeyStore Location	The path to the client-side keystore file generated from the exported public certificate using the keytool utility.	-

PDC Database Connection Information

[Table 2–15](#) lists the PDC database details that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–15 PDC Database Connection Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the PDC database is configured.	-
Port Number	The port number assigned to the PDC database service.	-
User Name	The PDC database user name.	-
Password	The PDC database user password.	-
Service Name	The name of the PDC database service.	-

PDC Schema Information

[Table 2–16](#) lists the PDC schema details that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–16 PDC Schema Information

Field	Description	Value
User Name	The name of the PDC schema user that you created during the PDC 11.1 Patch Set 2 installation.	-
Password	The password of the PDC schema user that you created during the PDC 11.1 Patch Set 2 installation.	-
PDC Tablespace	The name of the tablespace for the PDC schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the PDC schema. This field is case-sensitive.	-

PDC User Information

[Table 2–17](#) lists the PDC user details that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–17 PDC User Information

Field	Description	Value
User Name	The name of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.	-

Table 2–17 (Cont.) PDC User Information

Field	Description	Value
Password	The password of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.	-

Keystore Credentials Information

[Table 2–18](#) lists keystore credentials details that are required during the PDC 11.1 Patch Set 12 patch installation.

Table 2–18 Keystore Credentials Information

Field	Description	Value
Key Password	The password PDC uses for accessing the PDC alias key in the keystores (<i>PDC_Home/apps/conf/pdc.jks</i> , where <i>PDC_Home</i> is the directory in which PDC is installed, and <i>BRM_Integration_Pack_Home/apps/conf/pdc.jks</i> , <i>BRM_Integration_Pack_Home</i> is the directory in which BRM Integration Pack is installed).	-
Keystore Password	The password used for accessing the keystore.	-

BRM Integration Pack Installation Details

[Table 2–19](#) lists the BRM Integration Pack installation details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Table 2–19 BRM Integration Pack Installation Details

Field	Description	Value
Name	The name of the PDC 11.1 Patch Set 2 BRM Integration Pack installation.	-
Path	The path to the PDC 11.1 Patch Set 2 BRM Integration Pack directory.	-

BRM Server Information

[Table 2–20](#) lists the BRM server details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Table 2–20 BRM Server Information

Field	Description	Value
BRM	The path to the directory in which BRM is installed. The path is defined in the \$PIN_HOME environment variable.	-
BRM Pipeline	The path to the directory in which Pipeline Manager is installed. The path is defined in the \$IFW_HOME environment variable.	-
BRM ThirdParty Software	The path to the directory in which BRM ThirdParty software is installed.	-

BRM Pipeline Database Information

Table 2–21 lists the BRM pipeline database details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Table 2–21 BRM Pipeline Database Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the BRM pipeline database is configured.	-
Port Number	The port number assigned to the BRM pipeline database service.	-
User Name	The BRM pipeline database schema user name.	-
Password	The BRM pipeline database schema user password.	-
Service Name	The name of the BRM pipeline database service.	-

Transformation Cross-Reference Database Information

Table 2–22 lists the transformation cross-reference database details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Table 2–22 Transformation Cross-Reference Database Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the transformation cross-reference database is configured.	-
Port Number	The port number assigned to the transformation cross-reference database service.	-
User Name	The transformation cross-reference database user name.	-
Password	The transformation cross-reference database user password.	-
Service Name	The name of the transformation cross-reference database service.	-

Transformation Cross-Reference Schema Information

Table 2–23 lists the transformation cross-reference schema details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Table 2–23 Transformation Cross-Reference Schema Information

Field	Description	Value
User Name	The name of the transformation cross-reference schema user that you created during the PDC 11.1 Patch Set 2 installation.	-
Password	The password of the transformation cross-reference schema that you created during the PDC 11.1 Patch Set 2 installation.	-

Table 2–23 (Cont.) Transformation Cross-Reference Schema Information

Field	Description	Value
PDC Tablespace	The name of the PDC tablespace for the transformation cross-reference schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the transformation cross-reference schema. This field is case-sensitive.	-

Migration Cross-Reference Database Information

[Table 2–24](#) lists the migration cross-reference database details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Note: The migration cross-reference database details are required only if you want to upgrade the migration utility that you installed with PDC 11.1 Patch Set 4 BRM Integration Pack.

Table 2–24 Migration Cross-Reference Database Information

Field	Description	Value
Host Name	The IP address or the host name of the machine on which the migration cross-reference database is configured.	-
Port Number	The port number assigned to the migration cross-reference database service.	-
User Name	The migration cross-reference database user name.	-
Password	The migration cross-reference database user password.	-
Service Name	The name of the migration cross-reference database service.	-

Migration Cross-Reference Schema Information

[Table 2–25](#) lists the migration cross-reference schema details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Note: The migration cross-reference database details are required only if you want to upgrade the migration utility that you installed with PDC 11.1 Patch Set 4 BRM Integration Pack.

Table 2–25 Migration Cross-Reference Schema Information

Field	Description	Value
User Name	The name of the migration cross-reference schema user that you created during the PDC 11.1 Patch Set 4 BRM Integration Pack installation.	-

Table 2–25 (Cont.) Migration Cross-Reference Schema Information

Field	Description	Value
Password	The password of the migration cross-reference schema user that you created during the PDC 11.1 Patch Set 4 BRM Integration Pack installation.	-
PDC Tablespace	The name of the PDC tablespace for the migration cross-reference schema. This field is case-sensitive.	-
Temp Tablespace	The name of the temporary tablespace for the migration cross-reference schema. This field is case-sensitive.	-

Migration User Information

[Table 2–26](#) lists the migration user details that are required during the PDC 11.1 Patch Set 12 BRM Integration Pack installation.

Note: The migration cross-reference database details are required only if you want to upgrade the migrate utility that you installed with PDC 11.1 Patch Set 4 BRM Integration Pack.

Table 2–26 Migration User Information

Field	Description	Value
User Name	The name of the migration user that you created during the PDC 11.1 Patch Set 4 installation.	-
Password	The password of the migration user that you created during the PDC 11.1 Patch Set 4 installation.	-

Pricing Design Center Pre-Installation Tasks

This chapter describes the tasks that you perform before installing Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 12.

- If you are installing PDC for the first time, see ["Pre-Installation Tasks for the Complete PDC Software Installation"](#).
- If you are installing PDC 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation, see ["Pre-Installation Tasks for the PDC Patch Installation"](#).

Pre-Installation Tasks for the Complete PDC Software Installation

Before installing the complete PDC software, do the following:

- Install and configure Oracle Database. See ["Installing and Configuring Oracle Database"](#) for more information.
- Configure the PDC database. See ["Configuring the PDC Database"](#) for more information.
- Install Java Runtime Environment (JRE)/Java Development Kit (JDK). See ["Installing JRE/JDK"](#) for more information.
- Install and configure Oracle WebLogic Server. See ["Installing and Configuring Oracle WebLogic Server"](#) for more information.
- Set the JAVA_HOME environment variable. See ["Setting the JAVA_HOME Environment Variable"](#) for more information.
- Enable JRE permissions. See ["Enabling JRE Permissions"](#) for more information.
- Enable compatibility view for PDC in Internet Explorer 11. See ["Enabling Compatibility View in Internet Explorer 11"](#) for more information.
- Install and configure Oracle Communications Billing and Revenue Management (BRM). See ["Installing and Configuring BRM"](#) for more information.

Installing and Configuring Oracle Database

Oracle recommends that the installation and configuration of Oracle Database be performed by an experienced database administrator. To install and configure Oracle Database, see the Oracle Database installation documentation.

When you install the software, do the following:

- Install Oracle Database Enterprise Edition.
- Create the PDC database.

- Create a database to store the transformation cross-reference tables, or use the PDC database to store the transformation cross-reference tables.
- Create a database to store the migration cross-reference tables, or use the PDC database or the transformation cross-reference database to store the migration cross-reference tables.
- (Optional) Create PDC tablespaces and temporary tablespaces for the following:
 - The PDC schema, to store the pricing and setup components.
 - The transformation cross-reference schema, to store tables that map pricing and setup components in PDC to the corresponding component in a target rating engine.
 - The migration cross-reference schema, to store tables that map the pricing and setup components that are migrated from the BRM database to the corresponding component in a target rating engine.

Oracle recommends that you create separate PDC tablespaces and temporary tablespaces for each schema. However, you can use a single PDC tablespace and temporary tablespace to create all the schemas.

Configuring the PDC Database

This section describes procedures relating to configuring the PDC database.

Setting the Database Time Zone

The PDC database must have the appropriate local time zone setting.

For more information on setting the time zone, see the *Oracle Database Globalization Support Guide*.

Note: Ensure that the BRM database and the PDC database are in the same time zone.

After PDC has been installed, the database time zone cannot be changed. Ensure the time zone is correctly set before installing PDC.

Tuning the Database

[Table 3–1](#) and [Table 3–2](#) provide recommended database parameters for tuning your database for the PDC installation. These are the minimum requirements for PDC.

Table 3–1 Database Creation Parameters

Parameter	Recommended Value
SGA+PGA	At least 4 GB in total. Oracle recommends that you use as much memory as you have available in the machine, and also use Automatic Memory Management.
Processes	2000
Connection mode	Dedicated server
Redo log file size	1024 MB minimum

Table 3–2 Database Initialization Parameters

Parameter	Recommended Value
db_file_multiblock_read_count	16
distributed_lock_timeout	7200
dml_locks	9700
job_queue_processes	10
log_buffer	31457280
open_cursors	5000
parallel_max_servers	640
plsql_code_type	NATIVE

Installing JRE/JDK

Install the recommended version of JRE/JDK on the machine on which you want to deploy PDC. See "[Additional Software Requirements](#)" for the recommended version of JRE/JDK.

To verify the JRE/JDK version:

1. Go to the command prompt on the machine on which you want to deploy PDC.
2. Enter the following command:

```
java -version
```

The Java version is displayed. For example:

```
java version "1.7.0_51"
```

If the version displayed does not start with 1.7.0_, JRE/JDK 1.7 is not installed.

For information about installing JRE/JDK, see the Oracle Java documentation.

Installing and Configuring Oracle WebLogic Server

This section describes procedures relating to installing Oracle WebLogic Server and configuring the WebLogic Server domain in which you will deploy PDC.

Downloading and Installing Oracle WebLogic Server

WebLogic Server is a component of the Oracle Fusion Middleware 11g media pack. Oracle Fusion Middleware 11g includes Oracle WebLogic Server 10.3.6.

1. Download WebLogic Server 10.3.6 from the Oracle Software Delivery Web site:
<http://edelivery.oracle.com>
2. Download the WebLogic Server 10.3.6 patch 12932224 from the My Oracle Support Web site:

<http://support.oracle.com>

For information on installing Oracle WebLogic Server 10.3.6 and the patch 12932224, see the Oracle WebLogic Server documentation on the Oracle Help Center:

<http://docs.oracle.com>

Installing Oracle Application Development Runtime

Oracle Application Development Runtime 11g (11.1.1.6.0) must be installed on the machine on which you will install PDC.

Download Oracle Application Development Runtime 11g from the Oracle Software Delivery Web site:

<http://edelivery.oracle.com>

For information on installing Oracle Application Development Runtime 11g, see *Oracle Fusion Middleware Installation Guide for Application Developer 11g Release 1*.

Note: The Oracle Fusion Middleware 11g Application Developer Installer installs Oracle Application Development Runtime and Oracle Enterprise Manager.

Creating the Oracle WebLogic Server Domain

To create a WebLogic Server domain in which to deploy PDC, see the description of using the Configuration Wizard in the Oracle WebLogic Server documentation. You can use the Configuration Wizard in graphical mode or console mode.

Important: If you are migrating the PDC pricing data from a source PDC system to a target PDC system that supports ECE, ensure that you create the WebLogic Server domain for the target PDC system on the same machine on which the WebLogic Server domain for the source PDC system exists.

[Table 3–3](#) shows the values to choose when creating the WebLogic Server domain for PDC.

Create the WebLogic Server domain with at least one managed server configured along with the administration server because Oracle recommends that you deploy PDC on a managed server in the production environment.

Table 3–3 Oracle WebLogic Server Domain Configuration Values

Configuration Value	Description
Domain source	Select Generate a domain configured automatically to support the following products . From the list, select Oracle JRF - 11.1.1.0 [oracle_common] .
Domain Mode Configuration	Select Production Mode .
JDK Selection	From the Available JDKs list, select the JDK version required for installing PDC. See Table 2–2 , "PDC Software Requirements" for the recommended JDK version.

Table 3–3 (Cont.) Oracle WebLogic Server Domain Configuration Values

Configuration Value	Description
Optional Configuration	Select the following: ■ Administration Server. Select this option to configure the Oracle WebLogic Server domain administration server. ■ (Optional) Managed Servers, Clusters and Machines. Select this option if you want to configure only WebLogic Server domain managed servers or machines that host WebLogic servers. Note: PDC does not support WebLogic cluster deployment. ■ (Optional) Deployments and Services. Select this option if you want to target your deployments to servers.
Administration Server Listen Address	Use a listen address that is equal to a resolvable DNS host or IP address.
Administration Server Listen Port	Enter a free port number.
Managed Server Listen Address	(Optional) Enter a listen address that is equal to a resolvable DNS host or IP address.
Managed Server Listen Port	(Optional) Enter a free port number.
Target Deployments to Clusters or Servers	(Optional) Add all libraries to the managed server target and to the administration server.
Target Services to Clusters or Servers	(Optional) Add all services to the managed server target.
SSL Listen Port Enabled	Select the SSL Listen Port Enabled check box.
SSL Listen Port	Enter a free port number.

See *Oracle Fusion Middleware Installation Guide for Oracle Enterprise Content Management Suite 11g Release 1* for more information on WebLogic Server domains.

You can now start the administration server manually and log in to WebLogic Administration Console.

Configuring SSL for the WebLogic Server Domain

If you want to enable secure communication for PDC, you must configure secure sockets layer (SSL) for the WebLogic Server domain in which you deploy PDC.

To configure SSL for the WebLogic Server domain:

1. Generate the server-side keystore file by using the recommended version of the JRE/JDK **keytool** utility. See *Key and Certificate Management Tool* for more information.
2. Export the public certificate from the server-side keystore file by using the recommended version of the JRE/JDK **keytool** utility. See *Key and Certificate Management Tool* for more information.
3. Generate the client-side keystore file from the exported public certificate by using the recommended version of the JRE/JDK **keytool** utility. See *Key and Certificate Management Tool* for more information.

Note: Note the path of the client-side keystore file. You need to provide this path during the PDC installation if you choose to use SSL.

4. Configure SSL for the server on which you want to deploy PDC in WebLogic Server Administration Console. See the Oracle WebLogic Administration Console Help for more information.
5. Enable Java Secure Socket Extension-based SSL for the server on which you want to deploy PDC in WebLogic Server Administration Console. See the Oracle WebLogic Server Administration Console Help for more information.

Configuring the SSL Protocol Version

In a production environment, Oracle recommends the TLSv1 protocol for sending and receiving messages in an SSL connection.

Important: You need to set the same protocol version for managed servers and the administration server. Ensure that all the managed servers are down when making changes to the administration server for setting up the protocol. Oracle recommends to set the properties in the administration server and then the managed server.

To set the minimum protocol version to **TLS V1**, specify the following as a command-line option in the WebLogic Server startup parameters:

-Dweblogic.security.SSL.minimumProtocolVersion=TLSv1.0

Note: When you set a minimum protocol version, the TLS protocol that is enabled depends on the protocols that are configured in the SSL implementation.

See the discussion about specifying the version of the SSL protocol in the Oracle WebLogic Server documentation for more information.

Setting the JAVA_HOME Environment Variable

Set the JAVA_HOME environment variable to the recommended version of JRE/JDK before running any PDC processes.

To set the JAVA_HOME environment variable on the machine on which you want to deploy PDC:

1. Open the **.cshrc** file in a text editor.
2. Add or modify the following entries:

```
setenv JAVA_HOME jre/jdk_path
```

where *jre/jdk_path* is the absolute path to the directory in which JRE/JDK is installed.

For example:

```
setenv JAVA_HOME /pinhome/pin136/opt/portal/7.5/ThirdPartyApps/jre/1.7.0
```

3. Save and close the file.
4. Update the environment by running the following command:

```
source .cshrc
```

5. Verify the Java version by running the following command:

```
$JAVA_HOME/bin/java -version
```

The Java version is displayed. For example:

```
java version "1.7.0_51"
Java(TM) SE Runtime Environment (build 1.7.0_51-b07)
Java HotSpot(TM) 64-Bit Server VM (build 20.60-b01, mixed mode)
```

To set the JAVA_HOME environment variable for the WebLogic Server domain:

1. Go to the *MW_Home/user_projects/domains/bin* directory, where *MW_Home* is the directory in which the Oracle Middleware components are installed.
2. Open the **setDomain.sh** file in a text editor.
3. Add or modify the following entries before the **EXTRA_JAVA_PROPERTIES** entry:

```
JAVA_HOME="${JAVA_HOME}"
export JAVA_HOME
```

4. Save and close the file.

Enabling JRE Permissions

To enable JRE permissions:

1. Go to the *jre/jdk_path/lib/security* directory.
2. Open the **java.policy** file in a text editor.
3. Add the following entries to the file:

```
grant {
// JMX Java Management eXtensions
permission javax.management.MBeanTrustPermission "register";
};
```

4. Save and close the file.

Enabling Compatibility View in Internet Explorer 11

To enable compatibility view in Internet Explorer 11:

1. In Windows 10, open Internet Explorer 11.
2. Press Alt.
3. From the **Tools** menu, select **Compatibility View settings**.
The Compatibility View Settings dialog box appears.
4. In the **Add this website** field, enter **oracle.com**.
5. Click **Add**.
6. Click **Close**.

Installing and Configuring BRM

Note: Starting with PDC 11.1 Patch Set 3, you cannot use PDC with BRM 7.4.

Install the following on the machine on which you will install PDC BRM Integration Pack:

- BRM 7.5 and BRM 7.5 Patch Set 20 (26940838)

To install BRM 7.5 and BRM 7.5 Patch Set 20:

1. Download BRM 7.5 from the Oracle Software Delivery Web site:
<http://edelivery.oracle.com>
2. Install BRM and Pipeline Manager. For more information, see *BRM Installation Guide*.
3. Download BRM 7.5 Patch Set Patch Set 20 (26940838) from the My Oracle Support Web site.
<http://support.oracle.com>
4. Install BRM 7.5 Patch Set 20. For more information, see *BRM 7.5 Patch Set 20 Installation Guide*.

Enabling BRM-PDC Integration

After installing BRM, enable the BRM-PDC integration in BRM. This enables PDC to transform and transfer pricing components configured in PDC to BRM. See the discussion about the PDC and BRM integration process flow in *PDC User's Guide* for more information.

To enable the BRM-PDC integration:

1. Go to *BRM_Home/sys/data/config* and run the following command, which creates an editable XML file from the pricing instance of the */config/business_params* object, where *BRM_Home* is the directory in which BRM is installed.

```
BRM_Home/bin/pin_bus_params -r BusParamsPricing bus_params_pricing.xml
```

This directory includes the support files used by the *pin_bus_params* utility. To run it from a different directory, see the discussion about the *pin_bus_params* utility in the BRM documentation.

This command creates the XML file named *bus_params_pricing.xml.out* in your working directory. If you do not want this file in your working directory, specify the path as part of the file name.

2. Search the *bus_params_pricing.xml.out* file for the following line:

```
<PriceDesignCenterInst>disabled</PriceDesignCenterInst>
```

3. Change **disabled** to **enabled**.
4. Save the file as *bus_params_pricing.xml*.
5. Run the following command, which loads the updated file into the */config/business_params* object:

```
BRM_Home/bin/pin_bus_params bus_params_pricing.xml
```

6. Read the object with the **testnap** utility or Object Browser to verify that all fields are correct. See the discussion about reading an object and fields in *BRM Developer's Guide*.
7. Stop and restart the Connection Manager (CM).
For more information, see the discussion about starting and stopping the BRM system in *BRM System Administrator's Guide*.

Pre-Installation Tasks for the PDC Patch Installation

Before installing PDC 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation, do the following:

- Shut down the current PDC instance. See ["Shutting Down the Current Instance"](#) for more information.
- Make a complete offline backup of your existing PDC installation. See ["Backing Up the Current Installation"](#) for more information.
- If you are using Oracle Communications Billing and Revenue Management Elastic Charging Engine (ECE) for usage rating, install ECE 11.3 Patch Set 7 on the machine on which ECE 11.3 is installed. See ["Installing the ECE Patch Set"](#) for more information.
- Install BRM 7.5 Patch Set 20 on the machine on which BRM 7.5 is installed. See ["Installing the BRM Patch Set"](#) for more information.
- Install the recommended version of JRE/JDK on the machine on which the existing PDC 11.1 patch set is installed. See ["Installing JRE/JDK"](#) for more information.
- Install the recommended version of WebLogic Server (on the machine on which the existing PDC 11.1 patch set is installed). See ["Downloading and Installing Oracle WebLogic Server"](#) for more information.
- Set the JAVA_HOME environment variable. See ["Setting the JAVA_HOME Environment Variable"](#) for more information.
- Enable JRE permissions. See ["Enabling JRE Permissions"](#) for more information.
- Enable compatibility view for PDC in Internet Explorer 11. See ["Enabling Compatibility View in Internet Explorer 11"](#) for more information.
- Upgrade Oracle Application Development Runtime (on the machine on which the existing PDC 11.1 patch set is installed) to the recommended version. See ["Installing Oracle Application Development Runtime"](#) for more information.
- Enable the SSL port for the WebLogic Server domain in which the existing PDC 11.1 patch set is deployed, if it is not enabled during the WebLogic Server domain creation. See ["Enabling the SSL Port for the WebLogic Server Domain"](#) for more information.
- Configure the minimum SSL protocol version that is enabled for SSL connection, if it is not configured during the WebLogic Server domain creation. See ["Configuring the SSL Protocol Version"](#) for more information.

Shutting Down the Current Instance

To shut down the current PDC instance:

1. Ensure that no users are logged in.

Users include customers, client applications, customer service representatives (CSRs), and so on.

2. Stop all PDC processes.

Only the PDC database instance should be running during the PDC patch installation.

Backing Up the Current Installation

To prevent any data loss and minimize the impact of software or hardware failure during the patch installation, back up your existing installation.

Before installing the patch set, make a complete offline backup of the following:

- The WebLogic server **domains** directory; by default, *MW_Home/user_projects/domains*.
- The Oracle Inventory (**oraInventory**) directory. Open the */etc/oraInst.loc* (Linux) file or the */var/opt/oracle/OraInst.loc* (Solaris) file to find the default location of the **oraInventory** directory.
- The PDC database schema. See your database documentation for more information on performing full database backups.
- The transformation cross-reference database schema. See your database documentation for more information on performing full database backups.

Important: Store this backup in a safe location. The data in these files will become necessary if you encounter any issues in the installation process.

- The migration cross-reference database schema, if you installed the migration utility during the PDC 11.1 Patch Set 4 or PDC 11.1 Patch Set 5 installation. See your database documentation for more information on performing full database backups.

Installing the ECE Patch Set

You must install ECE 11.3 Patch Set 7 (27531574) on the machine on which ECE is installed.

To install ECE 11.3 Patch Set 7 (27531574):

1. Stop Pricing Updater.
2. Download ECE 11.3 Patch Set 7 (27531574) from the My Oracle Support Web site.
<http://support.oracle.com>
3. Install ECE 11.3 Patch Set 7. For more information, see *ECE Installation Guide*.

Installing the BRM Patch Set

You must install BRM 7.5 Patch Set 20 (26940838) on the machine on which BRM is installed.

Note: The BRM 7.5 Patch Set 20 installation must be performed as the UNIX user who installed BRM Integration Pack; for example, **pin_user**.

To install BRM 7.5 Patch Set 20 (26940838):

1. Download BRM 7.5 Patch Set Patch Set 20 (26940838) from the My Oracle Support Web site.
<http://support.oracle.com>
2. Install BRM 7.5 Patch Set 20. For more information, see *BRM 7.5 Patch Set 20 Installation Guide*.

Installing JRE/JDK

Install the recommended version of JRE/JDK on the machine on which you deployed PDC. See "[Additional Software Requirements](#)" for the recommended version of JRE/JDK.

To verify the JRE/JDK version:

1. Go to the command prompt on the machine on which you want to deploy PDC.
2. Enter the following command:

```
java -version
```

The Java version is displayed. For example:

```
java version "1.7.0_51"
```

If the version displayed does not start with **1.7.0_**, JRE/JDK 1.7 is not installed.

For information about installing JRE/JDK, see the Oracle Java documentation.

Enabling the SSL Port for the WebLogic Server Domain

Before installing PDC 11.1 Patch Set 12, enable the SSL port for the WebLogic Server domain in which you deployed PDC, if it is not enabled during the WebLogic Server domain creation. You must enable the SSL port even if you are not configuring SSL for the WebLogic Server domain.

To enable the SSL port for the WebLogic Server domain:

1. Start the WebLogic Server domain.
2. Log in to WebLogic Server Administration Console.
3. In the **Environment** tree, click **Servers**.
The Summary of Servers pane appears.
4. Select the server in which you want to deploy PDC.
5. Click the **Configuration** tab.
6. Click the **General** subtab.
7. Select the **SSL Listen Port Enabled** check box.
8. In the **SSL Listen Port** field, enter a free port number.
9. Click **Save**.

10. Log out of WebLogic Server Administration Console.

11. Restart the WebLogic Server domain.

See the discussion about enabling the SSL port in the Oracle WebLogic Server Administration Console Help for more information.

Installing Pricing Design Center Complete Software

This chapter describes how to install Oracle Communications Pricing Design Center (PDC). Before installing PDC, read the following:

- [Overview of the PDC Complete Software Installation Procedure](#)
- [Pricing Design Center System Requirements](#)
- [Pre-Installation Tasks for the Complete PDC Software Installation](#)

Installing PDC

PDC installation must be performed by a user who has permissions to write to the **oraInventory** directory and the **MW_Home/user_projects/domains** directory, where **MW_Home** is the directory in which the Oracle Middleware components are installed.

To install the complete PDC software:

1. On the machine hosting the Oracle WebLogic Server domain, create a temporary directory (*temp_dir*).
2. Go to the My Oracle Support Web site:
<http://support.oracle.com>
3. Sign in with your user name and password.
4. Click the **Patches & Updates** tab.
5. From the list, select **Patch Name or Number**.
6. In the text field, enter **27531591**.
7. Click **Search**.
The Patch Search Results page appears.
8. Click the patch name.
The patch details appear.
9. From the **Platform** list, select the platform and click **Download**.
The File Download dialog box appears.
10. Download the appropriate **p27531591_1110120_platform.zip** file to *temp_dir*, where *platform* is **linux** or **solaris**.
11. Unzip the **p27531591_1110120_platform.zip** file.

12. Unzip the **PricingDesignCenter-11.1.0.12.0-platform.zip** file.

The following folder structure is created:

pdcdisk1/install/

pdcdisk1/stage/

13. Start the Oracle WebLogic Server domain administration server or the WebLogic Server domain managed server on which you want to deploy PDC, if it is not already started.
14. Ensure that the PDC database is running.

Note: Ensure that the Oracle Database server is in Running state. The Installer connects to the Oracle Database server to verify the information you entered is valid.

15. In the **pdcdisk1/install/** directory, do one of the following:

- To install the complete PDC software using the default **oraInventory** directory, run the following command:

```
./runInstaller.sh
```

- To install the complete PDC software using the **oraInventory** directory in a different location, enter the following command:

```
./runInstaller.sh -invPtrLoc FilePath/oraInst.loc
```

where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To record the response file contents during the GUI installation, run the following command:

```
./runInstaller.sh -record -destinationFile path
```

where *path* is the complete path and name of the response file.

The Welcome screen appears.

16. Click **Next**.

The Specify Inventory Directory and Credentials screen appears if the **oraInst.loc** file is corrupt or not present. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

This screen displays the path to the default inventory directory and the default operating system group name.

17. (Optional) To change the default inventory directory details, do the following:

- a. Enter the full path of the inventory directory.
- b. Specify the name of the operating system group that has write permission to the inventory directory.

18. Click **Next**.

The Select Installation Type screen appears.

19. Select **Pricing Design Center** and click **Next**.

The Specify Home Details screen appears.

This screen displays the default PDC installation name and the path to the default PDC installation directory.

20. (Optional) To change the default PDC installation details, do the following:

- a. In the **Name** field, select the name for the installation from the list of names or enter a new installation name.
- b. In the **Path** field, enter the path to the directory where you want to install PDC. Optionally, click **Browse** to navigate to the directory where you want to install PDC.

21. Click **Next**.

The Pricing Design Center WebLogic Server Connection screen appears.

22. Enter the following details for the WebLogic Server domain in which you want to deploy PDC:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain is configured.
- b. In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c. In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d. In the **Password** field, enter the WebLogic Server domain administrator user password.
- e. In the **WebLogic Home** field, enter the path to the directory in which the WebLogic Server software is installed. For example, *MW_Home/wlserver_10.3*, where *MW_Home* is the directory in which the Oracle Middleware components are installed.
- f. Do one of the following:

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and in the **KeyStore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

23. Click **Next**.

The WebLogic Server/Cluster screen appears.

24. Do one of the following:

- To deploy PDC on a WebLogic Server domain administration server, select a WebLogic Server domain administration server from the list.
- To deploy PDC on a WebLogic Server domain managed server, select a WebLogic Server domain managed server from the list.

Note: Oracle recommends that you deploy PDC on a WebLogic Server managed server. If you select a WebLogic Server managed server, ensure that the WebLogic Server managed server and the node manager are running.

25. Click Next.

The Pricing Design Center Database Connection screen appears.

26. Enter the following information required to connect to the PDC database:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the PDC database is configured.
- b. In the **Port Number** field, enter the port number assigned to the PDC database service.
- c. In the **User Name** field, enter the PDC database user name. This user should have the following capabilities on the PDC database: create user, grant any role, grant any privileges, select any table for Enterprise edition, and DBA for XE.
- d. In the **Password** field, enter the PDC database user password.
- e. In the **Service Name** field, enter the name of the PDC database service.

Note: Ensure that the Oracle Database server is in Running state. The Installer connects to the Oracle Database server to verify the information you entered is valid.

27. Click Next.

The Pricing Design Center Schema screen appears.

28. Enter the following information required to create the PDC schema in the PDC database:

- a. In the **User Name** field, enter a PDC schema user name.
- b. In the **Password** field, enter a PDC schema user password.
- c. In the **PDC Tablespace** field, enter the name of the tablespace for the PDC schema.
- d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the PDC schema.

29. Click Next.

The Pricing Design Center System User screen appears.

30. Enter the following information to create a PDC user to access the PDC GUI:

- a. In the **User Name** field, enter a PDC user name.
- b. In the **Password** field, enter a PDC user password.

Note: The PDC user password can be a maximum of 12 characters long and should contain at least one non-alphabetic character. For example, Weblogic123.

The user name must not be a part of the password.

- c. In the **Confirm Password** field, enter the PDC user password again.

31. Click Next.

The Select charging Engine for Usage Rating appears.

32. Do one of the following:

- To use Oracle Communications Billing and Revenue Management (BRM) real-time rating and batch rating engines for usage rating, select **Realtime Rating and Batch Rating Engines**.
- To use BRM Elastic Charging Engine (ECE) for usage rating, select **Elastic Charging Engine**.

33. Click **Next**.

The Keystore Credentials screen appears.

34. Enter the following information required to encrypt the passwords:

- a. In the **Key Password** field, enter the password PDC uses for accessing the PDC alias key in the keystore.
- b. In the **Confirm Key Password** field, enter the key password again.
- c. In the **Keystore Password** field, enter the password used for accessing the keystore.
- d. In the **Confirm Keystore Password** field, enter the keystore password again.

For more information about keystores, see the discussion about managing passwords in PDC in *PDC Security Guide*.

35. Click **Next**.

The Summary screen appears.

36. Review the selections you have made in the preceding screens, and click **Install**.

The Install screen appears.

Note: After the installation begins, clicking **Stop installation** stops the installation process, but the files that are already copied are not removed.

37. When the End of Installation screen appears, note down the provided URL.

You use this URL to access PDC.

38. Click **Exit**.

The Exit confirmation box appears.

39. Click **Yes**.

See "[Verifying the Pricing Design Center Installation](#)" for information on verifying the successful installation of PDC.

See "[About Installation Logs](#)" for information on PDC Installer logs.

Installing BRM Integration Pack

BRM Integration Pack is a set of utilities that transform and transfer pricing components configured in PDC to the BRM system. If BRM and Pipeline Manager are installed on different machines, you must also install Pipeline Configuration Manager. For instructions on how to install Pipeline Configuration Manager, see *BRM Installation Guide*.

Note: BRM Integration Pack installation must be performed as the UNIX user who installed BRM; for example, **pin_user**.

To install BRM Integration Pack:

1. Start the Oracle WebLogic Server domain administration server or the managed server on which you want to deploy PDC, if it is not already started.
2. Verify that you are able to connect to the BRM database.
3. In the **pdcdisk1/install/** directory, do one of the following:

- To install BRM Integration Pack using the default **oraInventory** directory, run the following command:

```
./runInstaller.sh
```

- To install BRM Integration Pack using the **oraInventory** directory in a different location, enter the following command:

```
./runInstaller.sh -invPtrLoc FilePath/oraInst.loc
```

where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To record the response file contents during the GUI installation, run the following command:

```
./runInstaller.sh -record -destinationFile path
```

where *path* is the complete path and name of the response file. See ["Installing PDC in Silent Mode"](#) for more information.

The Welcome screen appears.

4. Click **Next**.

The Specify Inventory Directory and Credentials screen appears if the **oraInst.loc** file is corrupt or not present. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

This screen displays the path to the default inventory directory and the default operating system group name.

5. (Optional) To change the default inventory directory details, do the following:
 - a. Enter the full path of the inventory directory.
 - b. Specify the name of the operating system group that has write permission to the inventory directory.

6. Click **Next**.

The Select Installation Type screen appears.

7. Select **BRM Integration Pack** and click **Next**.

The Specify Home Details screen appears.

This screen displays the default installation name and the path to the default installation directory.

8. (Optional) To change the default BRM Integration Pack installation details, do the following:

Note: If you are installing BRM Integration Pack on the machine on which PDC is installed, then you must provide a different name and path for the BRM Integration Pack installation.

- a. In the **Name** field, select the name for the installation from the list of names or enter a new installation name.
- b. In the **Path** field, enter the path to the directory where you want to install BRM Integration Pack. Optionally, click **Browse** to navigate to the directory where you want to install BRM Integration Pack.

9. Click **Next**.

The Migration Option screen appears.

10. Do one of the following:

- If you do not want to migrate data, select **Migration not required** and proceed to step 15.
- To migrate the BRM real-time and batch rating engines pricing data to a PDC system that supports BRM real-time and batch rating engines, select **Migrate RRE and BRE Pricing Data to PDC** and proceed to step 17.
- To migrate the BRM real-time and batch rating engines pricing data to a PDC system that supports ECE, select **Migrate RRE and BRE Pricing Data to PDC with ECE** and proceed to step 17.
- To migrate the PDC pricing data to a PDC system that supports ECE, select **Migrate PDC Pricing Data to PDC with ECE** and proceed to step 11.

11. Click **Next**.

The Source Pricing Design Center WebLogic Server Connection screen appears.

12. If you are migrating the PDC pricing data to a PDC system that supports ECE, enter the following details for the WebLogic Server domain in which you deployed the source PDC system:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain for the source PDC system is configured.
- b. In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c. In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d. In the **Password** field, enter the WebLogic Server domain administrator user password.
- e. Do one of the following.

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and in the **KeyStore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

13. Click Next.

The Target Pricing Design Center WebLogic Server Connection screen appears.

14. If you are migrating the PDC pricing data to a PDC system that supports ECE, enter the following details for the WebLogic Server domain in which you deployed the target PDC system:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain for the target PDC system is configured.
- b. In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c. In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d. In the **Password** field, enter the WebLogic Server domain administrator user password.
- e. Do one of the following.

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and in the **KeyStore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

15. Click Next.

The Select charging Engine for Usage Rating Screen appears.

16. Do one of the following:

- To use BRM real-time rating and batch rating engines for usage rating, select **Realtime Rating and Batch Rating Engines**.
- To use ECE for usage rating, select **Elastic Charging Engine**.

17. Click Next.

The Pricing Design Center WebLogic Server Connection screen appears.

18. Enter the following details for the WebLogic Server domain in which you deployed PDC:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain is configured.
- b. In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c. In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d. In the **Password** field, enter the WebLogic Server domain administrator user password.
- e. Do one of the following.

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and in the **KeyStore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

19. Click Next.

The BRM Server Location screen appears.

20. Enter the BRM batch and real-time rating engine details:

- a.** In the **BRM** field, enter the path to the directory in which BRM is installed.
- b.** In the **BRM Pipeline** field, enter the path to the directory in which Pipeline Manager is installed.
- c.** In the **BRM ThirdParty Software** field, enter the path to the directory in which BRM ThirdParty Software is installed.

21. Click Next.

The BRM Pipeline Manager Database Connection Screen appears.

22. Enter the following information required to connect to the BRM database:

- a.** In the **Host Name** field, enter the IP address or the host name of the machine on which the Pipeline Manager database is configured.
- b.** In the **Port Number** field, enter the port number assigned to the Pipeline Manager database service.
- c.** In the **User Name** field, enter the Pipeline Manager database schema user name.
- d.** In the **Password** field, enter the Pipeline Manager database schema user password.
- e.** In the **Service Name** field, enter the name of the Pipeline Manager database service.

23. Click Next.

The Transformation Cross-Reference Database Connection screen appears.

24. Enter the following information required to connect to the transformation cross-reference database:

- a.** In the **Host Name** field, enter the IP address or the host name of the machine on which the transformation cross-reference database is configured.
- b.** In the **Port Number** field, enter the port number assigned to the transformation cross-reference database service.
- c.** In the **User Name** field, enter the transformation cross-reference database user name. This user should have the following capabilities on the transformation cross-reference database: create user, grant any role, grant any privileges, select any table for Enterprise edition, and DBA for XE.
- d.** In the **Password** field, enter the transformation cross-reference database user password.
- e.** In the **Service Name** field, enter the name of the transformation cross-reference database service.

25. Click Next.

The Transformation Cross-Reference Schema screen appears.

26. Enter the following information required to create the transformation cross-reference schema in the transformation cross-reference database:

Note: If you are migrating the pricing data from a source PDC system to a target PDC system that supports ECE, provide the details of the transformation cross-reference schema that you created for the source PDC system.

- a. In the **User Name** field, enter a transformation cross-reference schema user name.
 - b. In the **Password** field, enter a transformation cross-reference schema user password.
 - c. In the **PDC Tablespace** field, enter the name of the tablespace for the transformation cross-reference schema.
 - d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the transformation cross-reference schema.
27. Click **Next**.

The PDC User screen appears.

28. Enter the PDC user information.

- a. In the **User Name** field, enter the PDC user name.
- b. In the **Password** field, enter the PDC user password.

29. Do one of the following:

- Click **Next**.

The Migration Cross-Reference Database Connection screen appears.

- If you selected **Migration not required** in step 10, proceed to step 39.

30. Enter the following information required to connect to the migration cross-reference database:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the migration cross-reference database is configured.
- b. In the **Port Number** field, enter the port number assigned to the migration cross-reference database service.
- c. In the **User Name** field, enter the migration cross-reference database user name.
- d. In the **Password** field, enter the migration cross-reference database user password.
- e. In the **Service Name** field, enter the name of the migration cross-reference database service.

31. Click **Next**.

The Migration Cross-Reference Schema screen appears.

32. Enter the following information required to create the migration cross-reference schema in the migration cross-reference database:

- a. In the **User Name** field, enter a migration cross-reference schema user name.
 - b. In the **Password** field, enter a migration cross-reference schema user password.
 - c. In the **PDC Tablespace** field, enter the name of the PDC tablespace for the migration cross-reference schema.
 - d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the migration cross-reference schema.
33. Do one of the following:
 - Click **Next**.

The Migration User screen appears.
 - If you are migrating the PDC pricing data to a PDC system that supports ECE, proceed to 35.
34. Enter the migration user details and proceed to 39.
 - a. In the **User Name** field, enter a migration user name.
 - b. In the **Password** field, enter a migration user password.
35. Click **Next**.

The Source Migration User screen appears.
36. If you are migrating the PDC pricing data to a PDC system that supports ECE, enter the migration user details that you use to run the migration utility in the source PDC system:
 - a. In the **User Name** field, enter the migration user name.
 - b. In the **Password** field, enter the migration user password.
37. Click **Next**.

The Target Migration User screen appears.
38. If you are migrating the PDC pricing data to a PDC system that supports ECE, enter the migration user details that you want to use to run the migration utility in the target PDC system:
 - a. In the **User Name** field, enter the migration user name.
 - b. In the **Password** field, enter the migration user password.
39. Click **Next**.

The Keystore Credentials screen appears.
40. Enter the following information required to encrypt the passwords:
 - a. In the **Key Password** field, enter the password PDC uses for accessing the PDC alias key in the keystore.
 - b. In the **Confirm Key Password** field, enter the key password again.
 - c. In the **Keystore Password** field, enter the password used for accessing the keystore.
 - d. In the **Confirm Keystore Password** field, enter the keystore password again.
41. Click **Next**.

The Summary screen appears.

42. Review the selections you have made in the preceding screens, and click **Install**.

The Install screen appears.

Note: After the installation begins, if you click **Stop installation**, the installation process stops, but the files that are already copied are not removed.

The End of Installation screen appears.

See "[Verifying the Pricing Design Center Installation](#)" for information on verifying the successful installation of BRM Integration Pack.

See "[About Installation Logs](#)" for information on PDC Installer logs.

Installing PDC in Silent Mode

Use silent install mode when you are installing PDC using the same configuration repeatedly. Silent install mode does not use the GUI and it runs in the background.

About the Response File

A response file contains answers to installation questions that you would otherwise provide in an interactive installation session. Each answer is stored as a value for a variable identified in the response file.

When you extract the PDC pack, the response file templates are saved in the following locations:

- **pdcdisk1/stage/Response/oracle.communications.pdc.PricingDesignCenter.rsp**
Use this file template if you are installing PDC.
- **pdcdisk1/stage/Response/oracle.communications.pdc.BRMIntegrationPack.rsp**
Use this file template if you are installing BRM Integration Pack.

The response file templates contain all the parameters that the Installer requires during the silent, unattended installation but does not contain the parameter values. You can generate a response file that contains the parameters and values during the PDC GUI installation.

To generate a complete response file, run the following command to launch the Installer in the GUI mode:

```
./runInstaller.sh -record -destinationFile path
```

Where *path* is the response file location.

Installing PDC in Silent Mode

To install PDC in silent mode:

1. Create a copy of the **pdcdisk1/stage/Response/oracle.communications.pdc.PricingDesignCenter.rsp** file or the response file that was generated during the GUI installation and open it in a text editor.
2. Enter the values in the parameters to reflect the PDC installation requirements.

Notes:

- The **pdcd/Disk1/stage/Response/oracle.communications.pdc.PricingDesignCenter.rsp** file contains guidelines and examples on how to enter the values in the parameters.
 - In silent install mode, the Installer treats incorrect context, format, or type values within a response file as if no value were specified.
-

3. Save and close the file.
4. Go to the **pdcd/Disk1/install/** directory and enter the following command:

```
./runInstaller.sh -responseFile path -silent
```

where *path* is the PDC response file name and location.

For example:

```
./runInstaller.sh -responseFile /response_files/PricingDesignCenter.rsp -silent
```

The installation runs silently in the background.

To install BRM Integration Pack in silent mode:

1. Create a copy of the **pdcd/Disk1/stage/Response/oracle.communications.pdc.BRMIntegrationPack.rsp** file or the response file that was generated during the GUI installation and open it in a text editor.
2. Enter the values in the parameters to reflect the BRM Integration Pack installation requirements.

Notes:

- The **pdcd/Disk1/stage/Response/oracle.communications.pdc.BRMIntegrationPack.rsp** file contains guidelines and examples on how to enter the values in the parameters.
 - In silent install mode, the Installer treats incorrect context, format, or type values within a response file as if no value were specified.
-

3. Save and close the file.
4. Go to the **pdcd/Disk1/install/** directory and enter the following command:

```
./runInstaller.sh -responseFile path -silent
```

where *path* is the BRM Integration Pack response file name and location.

For example:

```
./runInstaller.sh -responseFile /response_files/BRMIntegrationPack.rsp -silent
```

The installation runs silently in the background.

See ["Verifying the Pricing Design Center Installation"](#) for information on verifying the successful installation of PDC and BRM Integration Pack.

See ["About Installation Logs"](#) for information on the PDC Installer logs.

About Installation Logs

The installation logs are used for debugging purposes. You can check the log files in the **oraInventory/logs** directory. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

You use the following log files to monitor installation and post-installations:

- **installActionTimeStamp.log**
- **oraInstallTimeStamp.err**
- **oraInstallTimeStamp.out**
- **dbScriptsgTimeStamp.log** (for the scripts executed using SQL*Plus and JDBC)
- **silentInstallTimeStamp.log** (for silent mode installation)

where *TimeStamp* is the date and time the log file was created.

Installing the Patch Set on an Existing Pricing Design Center Installation

This chapter describes how to install Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation. Before installing PDC 11.1 Patch Set 12, read the following:

- [Overview of the PDC Patch Installation Procedure](#)
- [Pricing Design Center System Requirements](#)
- [Pre-Installation Tasks for the PDC Patch Installation](#)

Installing the PDC Patch Set

Important: If you have an existing installation of PDC integrated with Oracle Communications Billing and Revenue Management (BRM) and BRM Elastic Charging Engine (ECE), you must upgrade ECE and BRM before upgrading the PDC installation. For more information, see the discussion about the overview of upgrading an existing ECE 11.3 installation in *BRM Elastic Charging Engine Installation Guide*.

To install the PDC patch set on an existing PDC 11.1 patch set installation:

1. On the server on which PDC 11.1 Patch Set 2 or later is installed, create a temporary directory (*temp_dir*).
2. Go to the My Oracle Support Web site:
<http://support.oracle.com>
3. Sign in with your user name and password.
4. Click the **Patches & Updates** tab.
5. From the list, select **Patch Name or Number**.
6. In the text field, enter **27531591**.
7. Click **Search**.

The Patch Search Results page appears.

8. Click the patch name.

The patch details appear.

9. From the **Platform** list, select the platform and click **Download**.

The File Download dialog box appears.

10. Download the appropriate **p27531591_1110120_platform.zip** file to *temp_dir*, where *platform* is **linux** or **solaris**.

11. Unzip the **p27531591_1110120_platform.zip** file.

12. Unzip the **PricingDesignCenter-11.1.0.12.0-platform.zip** file.

The following folder structure is created:

pdcd/Disk1/install/

pdcd/Disk1/stage/

13. Start the Oracle WebLogic Server domain administration server or the WebLogic Server domain managed server on which PDC 11.1 Patch Set 2 (or later) is deployed, if it is not already started.

14. Ensure that the PDC database is running.

15. In the **pdcd/Disk1/install/** directory, do one of the following:

- To install the PDC patch set using the default **oraInventory** directory, run the following command:

```
./runInstaller.sh
```

- To install the PDC patch set using the **oraInventory** directory in a different location, enter the following command:

Note: Ensure that you use the same **oraInst.loc** file that you used for the existing PDC 11.1 patch set installation. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

```
./runInstaller.sh -invPtrLoc FilePath/oraInst.loc
```

where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To record the response file contents during the GUI installation, run the following command:

```
./runInstaller.sh -record -destinationFile path
```

where *path* is the complete path and name of the response file. See ["Installing the Patch Set on an Existing PDC Installation in Silent Mode"](#) for more information.

The Welcome screen appears.

16. Click **Next**.

The Select Installation Type screen appears.

17. Select **Pricing Design Center** and click **Next**.

The Specify Home Details screen appears.

This screen displays the default PDC installation name and the path to the default PDC installation directory.

18. Enter the PDC installation details:

- a.** In the **Name** field, enter or select the name of the PDC 11.1 Patch Set 2 installation.
- b.** In the **Path** field, enter or select the path to the directory in which PDC 11.1 Patch Set 2 is installed. Optionally, click **Browse** to navigate to the directory in which PDC 11.1 Patch Set 2 is installed.

19. Click Next.

The patch installation confirmation screen appears.

20. Click Next.

The Backup Location for the Current Installation screen appears.

21. Enter the full path or browse to the directory in which you want to store the backup of your existing PDC installation.

The Installer creates a backup of the PDC installation directory and its content: *PDC_home* and stores it in the location specified.

22. Click Next.

The WebLogic Administration Server Connection screen appears.

23. Enter the WebLogic Server domain information.

- a.** In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain is configured.
- b.** In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c.** In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d.** In the **Password** field, enter the WebLogic Server domain administrator user password.
- e.** In the **WebLogic Home** field, enter the path to the directory in which the WebLogic Server software is installed. For example, *MW_Home/wlserver_10.3*, where *MW_Home* is the directory in which the Oracle Middleware components are installed.
- f.** Do one of the following.

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and, in the **KeyStore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

24. Click Next.

The WebLogic Server/Cluster screen appears.

25. Do one of the following:

- If PDC 11.1 Patch Set 2 (or later) is deployed on the WebLogic Server domain administration server, select a WebLogic Server domain administration server from the list.

- If PDC 11.1 Patch Set 2 (or later) is deployed on the WebLogic Server domain managed server, select a WebLogic Server domain managed server from the list.

26. Click Next.

The Pricing Design Center Database Connection screen appears.

27. Enter the following information required to connect to the PDC database:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the PDC database is configured.
- b. In the **Port Number** field, enter the port number assigned to the PDC database service.
- c. In the **User Name** field, enter the PDC database user name.
- d. In the **Password** field, enter the PDC database user password.
- e. In the **Service Name** field, enter the name of the PDC database service.

Note: Ensure that the Oracle Database server is in Running state. The Installer connects to the Oracle Database server to verify that the information you entered is valid.

28. Click Next.

The Pricing Design Center Schema screen appears.

29. Enter the PDC schema information.

- a. In the **User Name** field, enter the name of the PDC schema user that you created during the PDC 11.1 Patch Set 2 installation.
- b. In the **Password** field, enter the PDC schema user password.
- c. In the **PDC Tablespace** field, enter the password of the PDC schema user that you created during the PDC 11.1 Patch Set 2 installation.
- d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the PDC schema.
- e. To use the existing PDC schema, select the **Use the existing schema data?** check box.

30. Click Next.

If you selected the **Use the existing schema data?** check box, the Pricing Design Center System Using Existing Schema Information screen appears.

Otherwise, the Pricing Design Center System User screen appears, proceed to step 32.

31. Click Next.

The Pricing Design Center System User screen appears.

32. Enter the PDC user information.

- a. In the **User Name** field, enter the name of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.
- b. In the **Password** field, enter the password of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.

- c. In the **Confirm Password** field, enter the PDC user password again.
- 33. Click **Next**.
The Keystore Credentials screen appears.
- 34. Enter the following information required to encrypt the passwords:
 - a. In the **Key Password** field, enter the password PDC uses for accessing the PDC alias key in the keystore.
 - b. In the **Confirm Key Password** field, enter the key password again.
 - c. In the **Keystore Password** field, enter the password used for accessing the keystore.
 - d. In the **Confirm Keystore Password** field, enter the keystore password again.
- 35. Click **Next**.
The Summary screen appears.
- 36. Review the selections you have made in the preceding screens, and click **Install**.
The Install screen appears.

Note: After the installation begins, clicking **Stop installation** stops the installation process, but the files that are already copied are not removed.

- 37. When the End of Installation screen appears, note down the provided URL.
You use this URL to access PDC.
- 38. Click **Exit**.
The Exit confirmation dialog box appears.
- 39. Click **Yes**.
See ["Verifying the Pricing Design Center Installation"](#) for information on verifying the successful installation of PDC.
See ["About Installation Logs"](#) for information on PDC Installer logs.

Installing the BRM Integration Pack Patch

Note: The BRM Integration Pack patch installation must be performed as the UNIX user who installed BRM; for example, **pin_user**.

To install the BRM Integration Pack patch:

- 1. Start the WebLogic Server domain administration server or the WebLogic Server domain managed server on which PDC 11.1 Patch Set 2 (or later) is deployed, if it is not already started.
- 2. (Optional) Ensure that the PDC database is running.
- 3. Ensure that the BRM database is running.
- 4. In the **pdc/Disk1/install/** directory, do one of the following:

- To install the BRM Integration Pack patch using the default **oraInventory** directory, run the following command:

```
./runInstaller.sh
```

- To install the BRM Integration Pack patch using the **oraInventory** directory in a different location, enter the following command:

```
./runInstaller.sh -invPtrLoc FilePath/oraInst.loc
```

where *FilePath* is the path to the directory in which the **oraInst.loc** file is located.

- To record the response file contents during the GUI installation, run the following command:

```
./runInstaller.sh -record -destinationFile path
```

where *path* is the complete path and name of the response file. See ["Installing the Patch Set on an Existing PDC Installation in Silent Mode"](#) for more information.

The Welcome screen appears.

5. Click **Next**.

The Specify Home Details screen appears.

This screen displays the default installation name and the path to the default installation directory.

6. Enter the BRM Integration Pack installation details.

- a. In the **Name** field, enter or select the name of the PDC 11.1 Patch Set 2 BRM Integration Pack installation.
- b. In the **Path** field, enter or select the path to the PDC 11.1 Patch Set 2 BRM Integration Pack directory. Optionally, click **Browse** to navigate to the directory in which PDC 11.1 Patch Set 2 BRM Integration Pack is installed.

7. Click **Next**.

The patch installation confirmation screen appears.

8. Click **Next**.

The Backup Location for the Current Installation screen appears.

9. Enter the full path or browse to the directory in which you want to store the backup of your existing BRM Integration Pack installation.

The Installer creates a backup of the BRM Integration Pack installation directory and its content: *BRM_Integration_Pack_home* and stores it in the location specified.

10. Click **Next**.

The Select charging Engine for Usage Rating Screen appears.

11. Do one of the following:

- To use BRM real-time rating and batch rating engines for usage rating, select **Realtime Rating and Batch Rating Engines**.
- To use ECE for usage rating, select **Elastic Charging Engine**.

12. Click **Next**.

The Pricing Design Center WebLogic Server Connection screen appears.

13. Enter the WebLogic Server domain information.

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the WebLogic Server domain is configured.
- b. In the **Port Number** field, enter the port number assigned to the WebLogic Server domain administration server.
- c. In the **User Name** field, enter the WebLogic Server domain administrator user name.
- d. In the **Password** field, enter the WebLogic Server domain administrator password.
- e. In the **WebLogic Home** field, enter the path to the directory in which the WebLogic Server software is installed.

f. Do one of the following:

If you do not want to enable secure communication for PDC, deselect the **Use SSL?** check box.

To enable secure communication for PDC, leave the **Use SSL?** check box selected, and, in the **Keystore Location** field, enter the path of the client-side keystore file generated from the exported public certificate using the **keytool** utility.

For more information, see ["Configuring SSL for the WebLogic Server Domain"](#).

14. Click **Next**.

The BRM Server Location screen appears.

15. Enter the BRM batch and real-time rating engine details.

- a. In the **BRM** field, enter the path to the directory in which BRM is installed.
- b. In the **BRM Pipeline** field, enter the path to the directory in which Pipeline Manager is installed.
- c. In the **BRM ThirdParty Software** field, enter the path to the directory in which BRM ThirdParty Software is installed.

16. Click **Next**.

The BRM Pipeline Manager Database Connection Screen appears.

17. Enter the following information required to connect to the Pipeline Manager database:

- a. In the **Host Name** field, enter the IP address or the host name of the machine on which the Pipeline Manager database is configured.
- b. In the **Port Number** field, enter the port number assigned to the Pipeline Manager database service.
- c. In the **User Name** field, enter the Pipeline Manager database schema user name.
- d. In the **Password** field, enter the Pipeline Manager database schema password.
- e. In the **Service Name** field, enter the name of the Pipeline Manager database service.

18. Click **Next**.

The Transformation Cross-Reference Database Connection screen appears.

19. Enter the following information required to connect to the transformation cross-reference database:
 - a. In the **Host Name** field, enter the IP address or the host name of the machine on which the transformation cross-reference database is configured.
 - b. In the **Port Number** field, enter the port number assigned to the transformation cross-reference database service.
 - c. In the **User Name** field, enter the transformation cross-reference database user name.
 - d. In the **Password** field, enter the transformation cross-reference database user password.
 - e. In the **Service Name** field, enter the name of the transformation cross-reference database service.

20. Click **Next**.

The Transformation Cross-Reference Schema screen appears.

21. Enter the transformation cross-reference schema information.
 - a. In the **User Name** field, enter the name of the transformation cross-reference schema user that you created during the PDC 11.1 Patch Set 2 installation.
 - b. In the **Password** field, enter the password of the transformation cross-reference schema user that you created during the PDC 11.1 Patch Set 2 installation.
 - c. In the **PDC Tablespace** field, enter the name of the PDC tablespace for the transformation cross-reference schema.
 - d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the transformation cross-reference schema.

22. Click **Next**.

The Pricing Design Center System User screen appears.

23. Enter the PDC user information.

- a. In the **User Name** field, enter the name of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.
- b. In the **Password** field, enter the password of the PDC user that you created during the PDC 11.1 Patch Set 2 installation.

24. Click **Next**.

The Migration Option screen appears if you installed the migration utility during the PDC 11.1 Patch Set 4 installation.

The Keystore Credentials screen appears if you have not installed the migration utility during the PDC 11.1 Patch Set 4 installation. Proceed to step 33.

25. Do one of the following:
 - To upgrade the migration utility that you installed with the existing BRM Integration Pack, select **Yes**.
 - If you do not want to upgrade the migration utility, select **No** and proceed to step 32.

26. Click **Next**.

The Migration Cross-Reference Database Connection screen appears.

27. Enter the following information required to connect to the migration cross-reference database:
 - a. In the **Host Name** field, enter the IP address or the host name of the machine on which the migration cross-reference database is configured.
 - b. In the **Port Number** field, enter the port number assigned to the migration cross-reference database service.
 - c. In the **User Name** field, enter the migration cross-reference database user name.
 - d. In the **Password** field, enter the migration cross-reference database user password.
 - e. In the **Service Name** field, enter the name of the migration cross-reference database service.
28. Click **Next**.

The Migration Cross-Reference Schema screen appears.
29. Enter the migration cross-reference schema information.
 - a. In the **User Name** field, enter the name of the migration cross-reference schema user that you created during the PDC 11.1 Patch Set 4 installation.
 - b. In the **Password** field, enter the password of the migration cross-reference schema user that you created during the PDC 11.1 Patch Set 4 installation.
 - c. In the **PDC Tablespace** field, enter the name of the PDC tablespace for the migration cross-reference schema.
 - d. In the **Temp Tablespace** field, enter the name of the temporary tablespace for the migration cross-reference schema.
30. Click **Next**.

The Migration User screen appears.
31. Enter the migration user information.
 - a. In the **User Name** field, enter the name of the migration user that you created during the PDC 11.1 Patch Set 4 installation.
 - b. In the **Password** field, enter the password of the migration user that you created during the PDC 11.1 Patch Set 4 installation.
32. Click **Next**.

The Keystore Credentials screen appears.
33. Enter the following information required to encrypt the passwords:
 - a. In the **Key Password** field, enter the password PDC uses for accessing the PDC alias key in the keystore.
 - b. In the **Confirm Key Password** field, enter the key password again.
 - c. In the **Keystore Password** field, enter the password used for accessing the keystore.
 - d. In the **Confirm Keystore Password** field, enter the keystore password again.
34. Click **Next**.

The Summary screen appears.
35. Review the selections you have made in the preceding screens, and click **Install**.

The Install screen appears.

Note: After the installation begins, clicking **Stop installation** stops the installation process, but the files that are already copied are not removed.

The End of Installation screen appears.

36. Click Exit.

The Exit confirmation dialog box appears.

37. Click Yes.

See "[Verifying the Pricing Design Center Installation](#)" for information on verifying the successful installation of BRM Integration Pack.

See "[About Installation Logs](#)" for information on PDC Installer logs.

Installing the Patch Set on an Existing PDC Installation in Silent Mode

Use the silent install mode when you are installing the patch set using the same configuration repeatedly. Silent install mode does not use the GUI and it runs in the background. In this mode, you can use a response file template that contains a predefined set of values.

To install the PDC patch set in silent mode:

1. Create a copy of the **pdcdisk1stage/Response/oracle.communications.pdc.PricingDesignCenter.rsp** file or the response file that was generated during the GUI installation and open it in a text editor.
2. Enter the values in the parameters to reflect the PDC installation requirements.

Notes:

- The **oracle.communications.pdc.PricingDesignCenter.rsp** file contains guidelines and examples on how to enter the values in the parameters.
 - In silent install mode, the Installer treats incorrect context, format, or type values within a response file as if no value were specified.
-

3. Save and close the file.
4. Go to the **pdcdisk1/install/** directory, do one of the following:

```
./runInstaller.sh -responseFile path -silent
```

where *path* is the PDC response file name and location.

For example:

```
./runInstaller.sh -responseFile /response_files/PricingDesignCenter.rsp -silent
```

The installation runs silently in the background.

To install the BRM Integration Pack patch in silent mode:

1. Create a copy of the **pdcd/Disk1/stage/Response/oracle.communications.pdc.BRMIntegrationPack.rsp** file or the response file that was generated during the GUI installation and open it in a text editor.
2. Enter the values in the parameters to reflect the BRM Integration Pack installation requirements.

Notes:

- The **oracle.communications.pdc.BRMIntegrationPack.rsp** file contains guidelines and examples on how to enter the values in the parameters.
 - In silent install mode, the Installer treats incorrect context, format, or type values within a response file as if no value were specified.
-

3. Save and close the file.
4. Go to the **pdcd/Disk1/install/** directory and enter the following command:

```
./runInstaller.sh -responseFile path -silent
```

where *path* is the BRM Integration Pack response file name and location.

For example:

```
./runInstaller.sh -responseFile /response_files/BRMIntegrationPack.rsp -silent
```

The installation runs silently in the background.

See ["Verifying the Pricing Design Center Installation"](#) for information on verifying the successful installation of PDC and BRM Integration Pack.

See ["About Installation Logs"](#) for information on the PDC Installer logs.

Restoring the Previous Installation

If your patch installation is not successful, you must restore your system to the previous installation.

Note: The Installer does not support uninstallation. As a workaround, restore the previous installation by replacing the PDC 11.1 Patch Set 12 directories with the directories that you backed up.

To restore the previous PDC 11.1 patch set installation:

1. Restore the WebLogic server **domains** directory. Use the **domains** directory that you backed up before the patch installation to replace the following directory:
MW_home/user_projects/domains
2. Restore the PDC installation directory. Use the *PDC_home* directory that you backed up during the PDC 11.1 Patch Set 12 installation to replace the *PDC_home* directory.
3. Restore the **oraInventory** directory. Use the **oraInventory** directory that you backed up before you installed PDC 11.1 Patch Set 12 to replace the **oraInventory** directory.

4. Restore the PDC database schema.
5. Restore the transformation cross-reference database schema.
6. Restore the migration cross-reference database schema.

Pricing Design Center Post-Installation Tasks

This chapter provides instructions for Oracle Communications Pricing Design Center (PDC) 11.1 Patch Set 12 post-installation tasks.

- If you installed PDC for the first time, see ["Post-Installation Tasks for the Complete PDC Software Install"](#).
- If you installed PDC 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation, see ["Post-Installation Tasks for the PDC Patch Install"](#).

Post-Installation Tasks for the Complete PDC Software Install

After installing the complete PDC software, do the following:

Important: Ensure that the BRM-PDC integration is enabled. See ["Enabling BRM-PDC Integration"](#) for more information.

- (Optional) Create a PDC user. You can create additional PDC users through Oracle WebLogic Server Administration Console. See ["Creating a PDC User"](#) for more information.
- Add the PDC user to a group. See ["Adding the PDC User to a Group"](#) for more information.
- Start the transformation engines. See ["Starting the Transformation Engines"](#) for more information.
- (Optional) Restrict the quota limit for a schema user in a tablespace. See ["Restricting Tablespace Quota for a Schema User"](#) for more information.

Additionally, do the following if you are not migrating the existing BRM pricing data to the PDC database:

- Clean up sample Oracle Communications Billing and Revenue Management (BRM) data. See ["Cleaning up Sample BRM Data"](#) for more information.
- Run the **SyncPDC** utility. Run **SyncPDC** to synchronize the setup components defined in other BRM components with PDC. See ["Running SyncPDC"](#) for more information.
- (Optional) Create prerequisite setup components such as balance elements. See *PDC User's Guide* for more information. For a quick start, load sample balance element IDs and ratable usage metrics (RUMs) provided with PDC. See ["Loading Sample Data"](#) for more information.

- Create a service-event map in the PDC UI. See ["Creating Service-Event Maps"](#) for more information.

Creating a PDC User

If you want to create additional PDC users, you must create the PDC users after the installation is complete.

To create a PDC user:

1. Log in to WebLogic Server Administration Console.
2. In the **Domain Structure** section, click the **Security Realms** link.
The Summary of Security Realms page appears.
3. Click the **myrealm** link.
The Settings for myrealm page appears.
4. Click the **Users and Groups** tab.
5. Click the **Users** subtab.
6. Click **New**.
The Create a New User page appears.
7. Do the following:
 - a. In the **Name** field, enter a name for the PDC user.
 - b. (Optional) In the **Description** field, enter a brief description for the PDC user.
 - c. In the **Password** field, enter a password for the PDC user.

Note: The PDC user password can be a maximum of 12 characters and should contain at least one non-alphabetic character. For example, Weblogic123.

The user name must not be a part of the password.

- d. In the **Confirm Password** field, enter the password again, to confirm it.
8. Click **OK**.
The user name appears in the User table.
 9. Click **Save**.

To access PDC, add the PDC user to a group based on the role of the user in the organization. See ["Adding the PDC User to a Group"](#) for more information.

Adding the PDC User to a Group

PDC is a role-based application that authenticates and authorizes users based on the group to which the user belongs. The role-based functionality of PDC is supported by the following WebLogic Server groups:

- **Pricing Design Admin:** The users belonging to this group have read and write access to the setup and pricing components.
- **Pricing Analyst:** The users belonging to this group have read access to the setup components and read and write access to the pricing components.

- **Pricing Reviewer:** The users belonging to this group have only read access to the setup and pricing components.
- **Migration Admin:** The users belonging to this group can migrate pricing data from the BRM database to the PDC database.

These groups are created by the PDC Installer during the PDC installation process. To access PDC, add the PDC user you created during the installation or after the installation is complete to a group based on the role of the user in the organization.

To add the user to the group:

1. Log in to WebLogic Server Administration Console.
2. In the **Domain Structure** section, click the **Security Realms** link.
The Summary of Security Realms page appears.
3. Click the **myrealm** link.
The Settings for myrealm page appears.
4. Click the **Users and Groups** tab.
5. Click the **Users** subtab.
6. Click the *username* link, where *username* is the name of the PDC user.
The Settings screen for *username* page appears.
7. Click the **Groups** tab.
8. In the **Parent Groups** section, from the **Available** list, select the group to which you want to assign the user.
9. Move the selected item to the **Chosen** list.
10. Click **Save**.

Starting the Transformation Engines

The transformation engines do not automatically start when you start the PDC server, you must start them manually. See ["Starting the Transformation Engines"](#) for more information.

Restricting Tablespace Quota for a Schema User

PDC grants unlimited tablespace quota to the following schema users:

- PDC schema
- Transformation cross-reference schema
- Migration cross-reference schema

You can restrict the quota limit for a schema user in a tablespace by using SQL*Plus.

To restrict the tablespace quota for a schema user:

1. Connect to your database using SQL*Plus:

```
sqlplus user_name/password@database_name
```

where:

- *user_name* is the PDC database user name.
- *password* is the PDC database user password.

- *database_name* is the service name or database alias of the PDC database.
2. At the SQL*Plus prompt, enter the following command:

```
alter user schema_user_name quota size on tablespace_name;
```

where:
 - *schema_user_name* is the PDC schema user name.
 - *size* is the tablespace quota size.
 - *tablespace_name* is the name of the tablespace for the PDC schema user.For example:

```
alter user pdcUser quota 500k on data_ts;
```
 3. Enter the following command, which exits SQL*Plus:

```
exit
```

Cleaning up Sample BRM Data

When you install BRM, its installation scripts populate sample data, including setup and pricing components. When using PDC, this data should not be initiated in BRM, but it should be defined in PDC and published to the BRM database. To ensure that PDC and BRM are integrated properly, you must clean up the BRM sample data before you start using PDC.

To clean up sample BRM data:

1. Go to the *BRM_Integration_Pack_home/apps/syncpdc/scripts* directory, where *BRM_Integration_Pack_home* is the directory in which BRM Integration Pack is installed.
2. Enter the following command, which opens SQL*Plus:

```
sqlplus user_name/password@database_Name
```

where:
 - *user_name* is the BRM database user name.
 - *password* is the BRM database user password.
 - *database_Name* is the service name or database alias of the BRM database.
3. Enter the following commands, which clean up BRM data:
 - To clean up real-time data:

```
update_pin_tables.sql
```
 - To clean up batch-rating data:

```
update_ifw_tables.sql
```The sample BRM data is cleaned up.
4. Enter the following command, which exits SQL*Plus:

```
exit
```

Running SyncPDC

You must run the **SyncPDC** utility to synchronize the setup components defined outside of PDC.

See the discussion about running **SyncPDC** in *PDC User's Guide* for more information.

Loading Sample Data

PDC provides sample XML files to create setup components. The sample files are located in the *PDC_Home\apps\Samples\Examples* directory.

The **Examples** directory contains the following sample files:

- **PDCSampleBE.xml**. Contains all currency balance elements and some frequently used non-currency balance elements. You can load this file to quickly create balance elements to use when configuring pricing.
- **PDCSampleRum.xml**. Contains commonly used ratable usage metrics (RUMs). You can load this file to quickly create RUMs to use when creating a service-event map and when configuring pricing.
- **OOB_ProfileSpecifications.xml**. Contains the profile attribute specifications referenced in the following custom rules: **Friends&Family**, **SpecialDay**, and **ClosedUserGroup**. This XML file references the names used in the provisioning tags provided by default with the BRM installation. See the discussion about configuring closed user groups in *PDC User's Guide* for more information.
- **OOB_CRs.xml**. Contains the custom rules: **Friends&Family**, **SpecialDay**, and **ClosedUserGroup**. You can use these custom rules in generic and charge selectors when configuring a charge based on a subscriber's Friends & Family, Special Day, or Closed User Group profile. You must load the **OOB_ProfileSpecifications.xml** file before loading this file. See the discussion about configuring closed user groups in *PDC User's Guide* for more information.
- **OOB_ItemTypeSelector.xml**. You must load this file if you are using ECE. This file provides the default billing item assignments that are supported by BRM without any additional configuration. See the discussion about loading the **OOB_ItemTypeSelector.xml** file in *PDC User's Guide* for more information.

Important: Before loading this file into the PDC database, make a backup copy of the customized **config_item_tags.xml** and **config_item_types.xml** files in BRM if you have created custom bill items in BRM. When you load the **OOB_ItemTypeSelector.xml** file into the PDC database, it overwrites the existing item tag-to-item type mapping in the BRM database.

You can load the sample files by using the **ImportExportPricing** utility. See *PDC User's Guide* for more information.

Note: The **Examples** directory also contains sample alias files and sample pricing profile files that are provided only for reference and for use as templates for creating custom alias events or pricing profiles. You should not load the sample alias files and sample pricing profile files after installing PDC.

Creating Service-Event Maps

A service-event map defines which events can be used for a service and which RUMs can be used for each service-event combination.

For example, you map the GSM Session event to the GSM service and the RUMs, Duration and Volume, to the GSM Session event.

You can create a service-event map in the PDC UI. See the PDC Help for more information.

Post-Installation Tasks for the PDC Patch Install

After installing PDC 11.1 Patch Set 12 on an existing PDC 11.1 patch set installation, do the following:

- Start the transformation engines. See ["Starting the Transformation Engines"](#) for more information.
- Restart the WebLogic Server domain administration server or the WebLogic Server domain managed server on which PDC 11.1 Patch Set 12 is deployed. For more information on starting and stopping servers, see the Oracle WebLogic Server documentation.
- (Optional) Restrict the quota limit for a schema user in a tablespace. See ["Restricting Tablespace Quota for a Schema User"](#) for more information.
- If you are using ECE for rating, ensure that you have loaded the following files into PDC to configure the profile attribute specifications, custom rules, and item type selectors in PDC:
 - OOB_ProfileSpecifications.xml
 - OOB_CRs.xml
 - OOB_ItemTypeSelector.xmlSee ["Loading Sample Data"](#) for more information.
- If you are upgrading to PDC 11.1 Patch Set 12, ensure that you migrate offer profiles from BRM into PDC. See ["Migrating Offer Profiles from BRM into PDC"](#) for more information.

Migrating Offer Profiles from BRM into PDC

If you are using ECE for usage charging, ensure that you migrate the existing offer profile data from BRM into PDC and use only PDC for configuring policy specifications.

Important: After you migrate the offer profile data into PDC, delete the existing offer profiles in BRM and *do not* create any new offer profiles in BRM.

To migrate offer profiles from BRM into PDC:

1. Open the `PDC_home/upgrade/PolicySpecificationDataUpgrade.sql` file in a text editor.
2. Specify the following parameters:

```
CREATE DATABASE LINK brmpdclink
```

```

CONNECT TO brm_dbhost_username
IDENTIFIED BY brm_dbhost_password
USING '(DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = pdc_schema_hostname)(PORT = pdc_
schema_port_number)))
      (CONNECT_DATA =
        (SID = pdc_schema_sid)
      )
)';

```

where:

- *brm_dbhost_username* is the BRM database user name.
- *brm_dbhost_password* is the BRM database user password.
- *pdc_schema_hostname* is the PDC schema host name.
- *pdc_schema_port_number* is the port number assigned to the PDC schema.
- *pdc_schema_sid* is the SID of the PDC schema.

3. Save and close the file.
4. Ensure that the BRM and PDC databases are running.
5. Connect to the PDC database using SQL*Plus:

```
sqlplus user_name/password@database_Name
```

where:

- *user_name* is the PDC database user name.
- *password* is the PDC database user password.
- *database_Name* is the service name or database alias of the PDC database.

6. Migrate offer profiles into PDC by running the following command:

```
@PolicySpecificationDataUpgrade.sql
```

The offer profiles are migrated from BRM into PDC in the PDC format as policy specifications and policy labels.

7. Exit SQL*Plus by running the following command:

```
exit
```

8. Restart WebLogic Server.
9. Export the policy specifications and policy labels to XML files by running the following command:

```
ImportExportPricing -export FileNamePrefix -config POLICY_SPECIFICATION
ImportExportPricing -export FileNamePrefix -config POLICY_LABEL
```

where *FileNamePrefix* is the prefix to append to the beginning of the generated XML file name.

The policy specifications and policy labels are exported to the respective XML files.

10. Verify the migrated data in the XML files and make any necessary changes if required.

11. If you make any changes in the XML files, import the policy specifications and policy labels into the PDC database by running the following command:

```
ImportExportPricing -import -config POLICY_LABEL filename  
ImportExportPricing -import -config POLICY_SPECIFICATION filename
```

where *filename* is the name of the XML file.

The policy specifications and policy labels are imported into the PDC database.

12. Publish the required pricing and setup components to ECE by running the following command:

```
ImportExportPricing -publish POLICY_SPECIFICATION -target ece  
ImportExportPricing -publish CHARGE_OFFERING -target ece  
ImportExportPricing -publish ALTERATION_OFFERING -target ece
```

The policy specifications, charge offers, and discount offers are published to ECE.

Note: During PDC installation, the create database link privilege is granted to the PDC schema user. After migrating offer profiles from BRM into PDC, you can revoke the create database link privilege from the PDC schema user by running the following command as the SYS user:

```
sqlplus sys_username/sys_password@  
revoke create database link from pdc_schema_hostname;
```

Verifying the Pricing Design Center Installation

This chapter describes how to verify the Oracle Communications Pricing Design Center (PDC) installation.

Verifying the PDC Installation

You can verify that PDC is installed by checking the state of all installed components or by logging in to PDC.

To check the state of all installed components:

1. Log in to the PDC domain administration server.
2. In the **Domain Structure** section, click **Deployments**.

The Summary of Deployments screen appears.

3. Ensure that all of the managed servers are running.
4. If PDC is installed successfully, the following deployments appear in **Active** state:
 - JobDispatcher
 - PricingDesignCenter

To log in to PDC:

1. Open a browser window.
2. Enter the URL provided by the Installer at the end of the installation.

Note: You can also get the URL to access PDC from the *PDC_Home/install/readme.txt* file, where *PDC_Home* is the directory in which you installed PDC.

3. Click **Go**.

The PDC login page appears.

4. Do the following:
 - a. In the **User Name** field, enter the user name.
 - b. In the **Password** field, enter the password.

The PDC home page appears, verifying that PDC is installed successfully.

Verifying the BRM Integration Pack Installation

You can verify that BRM Integration Pack is installed by checking if the values entered during the PDC 11.1 Patch Set 12 BRM Integration Pack installation are stored in the following configuration files:

- *BRM_Integration_Pack_Home*/apps/syncpdc/SyncPDCConfiguration.xml
- *BRM_Integration_Pack_Home*/apps/transformation/TransformationConfiguration.xml
- *BRM_Integration_Pack_Home*/apps/migration/MigrationConfiguration.xml

where *BRM_Integration_Pack_Home* is the directory in which you installed BRM Integration Pack.

Uninstalling Pricing Design Center

This chapter describes how to uninstall Oracle Communications Pricing Design Center (PDC).

Uninstalling PDC

You use Oracle Universal Installer to uninstall PDC. You can also uninstall other components of the PDC product using Oracle Universal Installer.

Note: Oracle Universal Installer does not uninstall the PDC patch. You can restore the previous release installation by replacing the patch set directories using the backup copy of your previous release installation. See ["Restoring the Previous Installation"](#) for more information.

To uninstall PDC:

1. Go to the *temp_dir/pdc/Disk1/install* directory, where *temp_dir* is the directory in which you unzipped the PDC software.

2. Run the following command:

```
./runInstaller.sh
```

The Welcome screen appears.

3. Click **Deinstall Products**.

The Inventory screen appears.

4. Select the PDC installation name that you entered during PDC installation.

5. Click **Remove**.

The Confirmation screen appears.

6. Click **Yes**.

The User Input screen appears.

7. In the **WebLogic Administrator user password** field, enter the password for the WebLogic Server domain administrator user.

See [Table 2–4, "Pricing Design Center WebLogic Server Connection Information"](#) for more information.

Note: Even if you enter an incorrect WebLogic Administrator password, the uninstallation is completed; however, it is not a clean uninstallation and you cannot log in to Oracle WebLogic Server Administration Console for 30 minutes. In this case, you must perform manual cleanup tasks after uninstalling PDC. See *PDC Release Notes*.

8. Click **OK**.

The selected components are uninstalled.

The Inventory screen appears.

9. Click **Close**.

The Installer removes all of the files except the log files. You must delete the log files manually.

You can check the log files in the **oraInventory/logs** directory. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

Uninstalling BRM Integration Pack

To uninstall Oracle Communications Billing and Revenue Management (BRM) Integration Pack:

Note: Oracle Universal Installer does not uninstall the BRM Integration Pack patch. You can restore the previous release installation by replacing the patch set directories using the backup copy of your previous release installation. See ["Restoring the Previous Installation"](#) for more information.

1. Go to the **temp_dir/pdc/Disk1/install** directory, where **temp_dir** is the directory in which you unzipped the PDC software.
2. Run the following command:

```
./runInstaller
```

The Welcome screen appears.

3. Click **Deinstall Products**.

The Inventory screen appears.

4. Select the BRM Integration Pack installation name that you entered during the BRM Integration Pack installation.

5. Click **Remove**.

The Confirmation screen appears.

6. Click **Yes**.

BRM Integration Pack is uninstalled.

The Inventory screen appears.

7. Click **Close**.

The Installer removes all of the files except the log files. You must delete the log files manually.

You can check the log files in the **oraInventory/logs** directory. The default location of the **oraInventory** directory is in the **/etc/oraInst.loc** (Linux) file or the **/var/opt/oracle/oraInst.loc** (Solaris) file.

Uninstalling PDC Using the Silent Mode

To uninstall PDC using the silent mode:

1. Go to the *temp_dir*/**pdc/Disk1/install** directory, where *temp_dir* is the directory in which you unzipped the PDC software.
2. Run the following command:

```
./runInstaller.sh -responseFile path -silent -deinstall
```

where *path* is the location of the response file that you created during the GUI installation of PDC.

You receive a message indicating that PDC has been uninstalled successfully.

Administering Pricing Design Center

This chapter provides an overview of basic Oracle Communications Pricing Design Center (PDC) administration tasks.

PDC Administrator Tasks

A PDC administrator is responsible for the day-to-day tasks of maintaining and managing PDC and its users. You perform the following tasks as a PDC system administrator:

- [Managing PDC Security](#)
- [Monitoring PDC](#)
- [Managing PDC](#)
- [Managing the PDC Transformation Process](#)
- [Changing Encrypted Passwords in the Configuration Files](#)
- [Backing Up and Restoring PDC](#)

Managing PDC Security

Oracle WebLogic Server includes a security architecture that provides a secure foundation for applications. PDC depends on the WebLogic Server security framework to secure its resources and servers. Managing PDC security involves the following:

- Managing security realms: Configuring new security realms, changing the default security realm, and deleting security realms.
- Managing users and groups: Defining users and assigning them to a group that can be authenticated in a security realm.
- Managing security providers: Managing security providers that provide security services to applications to protect WebLogic Server resources.
- Managing security policies: Managing security policies that specify who can access a WebLogic Server resource.

The **Wssp1.2-2007-Https-BasicAuth.xml** security policy secures the connection between the PDC Web service API and the client applications using one way secure sockets layer (SSL). You can also add custom security policies to secure the PDC Web service API using WebLogic Server Administration Console.

See the WebLogic Server Administration Console Help for more information on managing security realms, managing users and groups, managing security providers, and managing security policies.

Monitoring PDC

Monitoring your system regularly ensures fast recognition and resolution of problems or issues. You can use WebLogic Server Administration Console to monitor the following:

- The PDC domain
- The PDC administration server and managed servers

See the WebLogic Server Administration Console Help for more information.

Managing PDC

Managing PDC involves managing the following:

- The PDC database
- The WebLogic server on which PDC is installed

Managing the PDC Database

To manage the PDC database and perform administrative tasks, see the Oracle Database Server documentation.

Managing the PDC WebLogic Server

Managing the WebLogic server on which PDC is installed involves:

- Starting and stopping PDC
- Starting and stopping the PDC administration server and managed servers

See the WebLogic Server Administration Console Help for more information on managing the WebLogic server on which PDC is installed.

Managing the PDC Transformation Process

Pricing and setup components configured in PDC must be published to Oracle Communications Billing and Revenue Management (BRM) subscription and rating engines, referred to as the target engines. During the publication process, the data is transformed into the format used by the BRM subscription and rating engines. The rating engines include BRM real-time rating engine (RRE), BRM batch-rating engine (BRE), and Oracle Communications Billing and Revenue Management (BRM) Elastic Charging Engine (ECE).

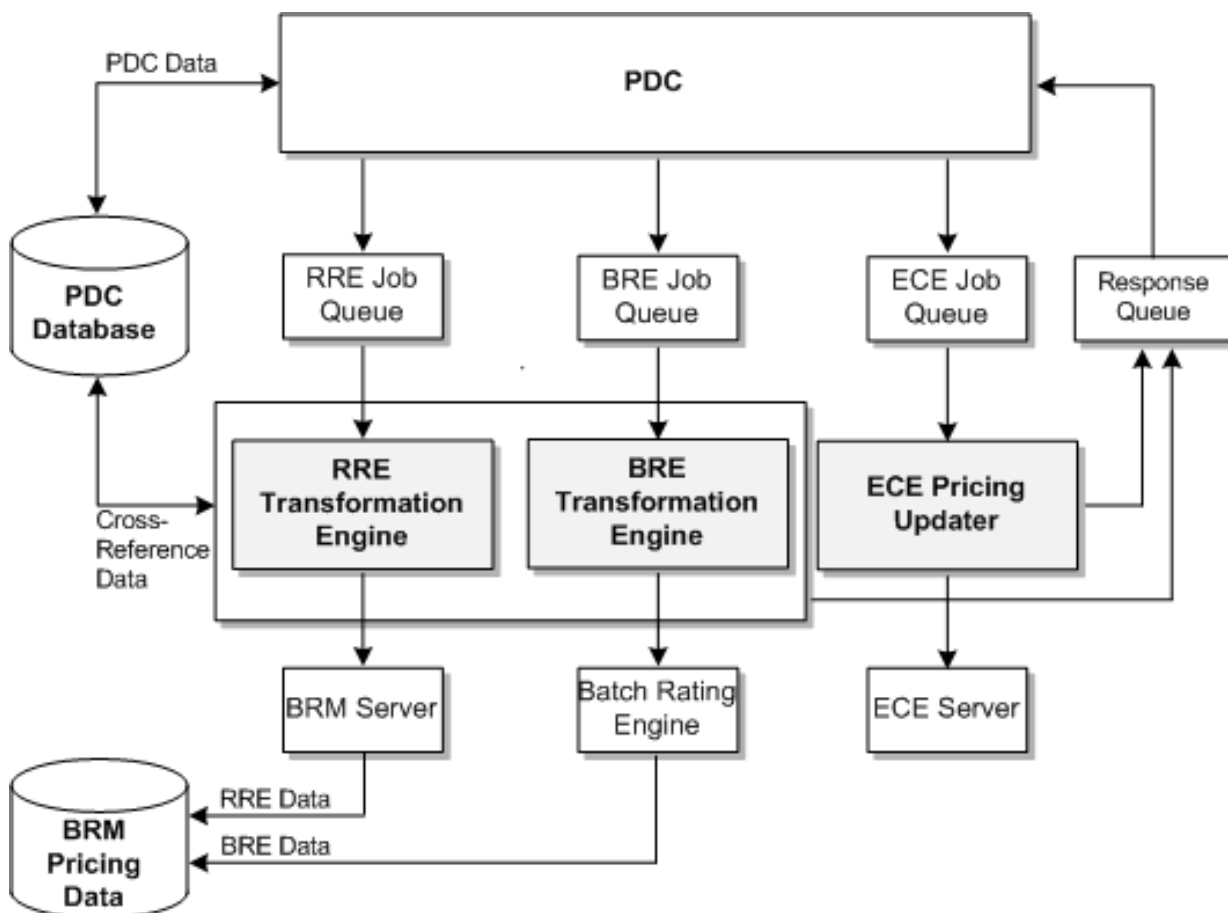
The PDC transformation process for pricing and setup components involves the following steps:

1. Using the PDC GUI application or the **ImportExportPricing** utility, you submit the pricing and setup components that you want to publish.
2. PDC validates the pricing and setup components.
3. PDC creates a transformation job for each target engine.
4. The job dispatcher puts the transformation job in the appropriate target engine work item queue.
5. The transformation engine or the ECE Pricing Updater associated with that queue retrieves the PDC components from the job dispatcher (see ["About the Transformation Engines"](#) and ["About the ECE Pricing Updater"](#)).

6. The transformation engine or the ECE Pricing Updater converts the PDC components into the format required by the target engine (see "[About the Target Engine Load Utilities](#)" and "[About the ECE Pricing Updater](#)").
7. The transformation engine calls the load utility in the BRM server and Batch Rating Engine to load the PDC components into the respective databases, and ECE Pricing Updater loads the PDC components into ECE.
8. The transformation engine updates the tables in its cross-reference database.
9. The transformation engine or the ECE Pricing Updater sends the status to the job dispatcher, which notifies the PDC server.
10. The PDC server updates the status of the changeset.

Figure 9–1 illustrates the PDC transformation process for the ECE and BRM integration.

Figure 9–1 PDC Transformation Process



About the Transformation Engines

PDC uses transformation engines to convert pricing and setup components into the XML format required by the target engines.

The following transformation engines are included with PDC and are installed when you install the BRM Integration Pack:

- **RRETransformationEngine:** This transformation engine supports the BRM real-time rating engine.

- **BRETransformationEngine:** This transformation engine supports the BRM batch rating engine.

The transformation engines use information in the *BRM_Integration_Pack_Home/apps/transformation/TransformationConfiguration.xml* file (where *BRM_Integration_Pack_Home* is the directory in which you installed BRM Integration Pack) to connect to their target engine, to the cross-reference database, to the PDC server, and to the log files of the target engine.

About the Target Engine Load Utilities

After converting pricing and setup components into the appropriate XML format, the RRE and BRE transformation engines call their associated load utilities to load the components into the respective databases. The load utilities are as follows:

- **loadpricelist:** The RRE transformation engine uses this utility to load pricing and setup components into the target BRM database. To connect to the target database, this utility uses the **Infranet.properties** file. For more information, see the BRM documentation.
- **LoadIfwConfig:** The BRE transformation engine uses this utility to load pricing and setup components into the target BRM database. To connect to the target database, this utility uses the **LoadIfwConfig.reg** file. For more information, see the BRM documentation.

About the ECE Pricing Updater

The ECE Pricing Updater loads pricing and setup components into ECE automatically when you publish pricing and setup components in PDC for its target engine. The ECE Pricing Updater is packaged with ECE. For more information, see the ECE documentation.

Troubleshooting Transformation Errors

See "[Troubleshooting Pricing Design Center](#)" for information about troubleshooting transformation errors.

Starting the Transformation Engines

The transformation engines do not automatically start when you start the PDC server. You must manually start them by running the following scripts:

- For real-time rating: *BRM_Integration_Pack_Home/Transformation/apps/bin/startRRETransformer*
- For batch rating: *BRM_Integration_Pack_Home/Transformation/apps/bin/startBRETransformer*. This script is optional if you are using ECE for usage rating.

When you run the scripts, at the command prompt, enter the key password to decrypt the encrypted passwords in the *BRM_Integration_Pack_Home/apps/transformation/TransformationConfiguration.xml* file and start the transformation engines.

Status of the Transformation Engines

If you suspect that a transformation engine has stopped running, use standard system commands to check the status of the transformation engine process.

Following are the names of the BRM transformation engine processes:

- For real-time rating:
oracle.communications.brm.pdc.server.transformation.rre.RRETransformationEngine
- For batch rating:
oracle.communications.brm.pdc.server.transformation.bre.BRETransformationEngine

Stopping the Transformation Engines

Use the following scripts to stop the transformation engines:

- For real-time rating: *BRM_Integration_Pack_Home/Transformation/apps/bin/stopRRETransformer*
- For batch rating: *BRM_Integration_Pack_Home/Transformation/apps/bin/stopBRETransformer*

Changing Encrypted Passwords in the Configuration Files

The passwords for the WebLogic Server domain, PDC user, transformation cross-reference database, migration cross-reference database, and BRM database are stored in the following configuration files as encrypted text:

- **ImportExportConfiguration.xml:** This file is used to configure the **ImportExportPricing** utility. See the discussion about the **ImportExportPricing** utility in *PDC User's Guide*.
- **SyncPDCConfiguration.xml:** This file is used to configure the **SyncPDC** utility. See the discussion about configuring **SyncPDC** in *PDC User's Guide*.
- **TransformationConfiguration.xml:** This file is used by the transformation engines to connect to their target engine.
- **MigrationConfiguration.xml:** This file is used to configure the **MigrateBRMPricing** utility. See the discussion about configuring **MigrateBRMPricing** in *PDC Pricing Migration Guide*.

To change the encrypted passwords in the configuration files, see the following topics:

Note: You cannot change an encrypted password directly in the configuration file. You must encrypt the new password manually and update the entry in the appropriate configuration file.

- [Changing the Encrypted WebLogic Server Domain Password](#)
- [Changing the Encrypted Transformation Cross-Reference Database Password](#)
- [Changing the Encrypted Migration Cross-Reference Database Password](#)
- [Changing the Encrypted PDC User Password](#)
- [Changing the Encrypted BRM Database Password](#)

Changing the Encrypted WebLogic Server Domain Password

To change the encrypted WebLogic Server domain password:

1. Go to the *PDC_home/apps/bin* directory, where *PDC_home* is the directory in which the PDC software is installed.
2. Run the following command:

encrypt

The **Enter Password** prompt appears.

3. Enter the new password for the WebLogic Sever domain.

The **Enter Key Password** prompt appears.

4. Enter the password PDC uses for accessing the PDC alias key in the keystore (*PDC_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.

5. Enter the password used for accessing the keystore.

The command window displays the new password for the WebLogic Server domain in encrypted form. For example:

```
FJwT2BlHcws
```

6. Copy the encrypted password.
7. Open the *PDC_home/apps/bin/ImportExportConfiguration.xml* file in a text editor.
8. Search the file for the following text:

```
<adminPassword>AdminPassword</adminPassword>
```

9. Replace *AdminPassword* with the copied encrypted password.
10. Save and close the file.
11. Go to the *BRM_Integration_Pack_home/apps/bin* directory.
12. Run the following command:

encrypt

The **Enter Password** prompt appears.

13. Enter the new password for the WebLogic Sever domain.

The **Enter Key Password** prompt appears.

14. Enter the password PDC uses for accessing the PDC alias key in the keystore (*BRM_Integration_Pack_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.

15. Enter the password used for accessing the keystore.

The command window displays the new password for the WebLogic Server domain in encrypted form. For example:

```
FJwT2BlHcws
```

16. Copy the encrypted password.
17. Open the *BRM_Integration_Pack_home/apps/syncpdc/SyncPDCCConfiguration.xml* file in a text editor.
18. Search the file for the following text:

```
<pricingServer>  
<adminPassword>AdminPassword</adminPassword>  
</pricingServer>
```

19. Replace *AdminPassword* with the copied encrypted password.
20. Save and close the file.
21. Open the *BRM_Integration_Pack_home/apps/transformation/TransformationConfiguration.xml* file in a text editor.
22. Search the file for the following text:

```
<pricingServer>
  <password>AdminPassword</password>
</pricingServer>
```

23. Replace *AdminPassword* with the copied encrypted password.
24. Save and close the file.
25. Open the *BRM_Integration_Pack_home/apps/migration/MigrationConfiguration.xml* file in a text editor.
26. Search the file for the following text:

```
<pricingServer>
  <adminpassword>AdminPassword</adminpassword>
</pricingServer>
```

27. Replace *AdminPassword* with the copied encrypted password.
28. Save and close the file.

Changing the Encrypted Transformation Cross-Reference Database Password

To change the encrypted transformation cross-reference database password:

1. Go to the *BRM_Integration_Pack_home/apps/bin* directory.
2. Run the following command:

```
encrypt
```

The **Enter Password** prompt appears.

3. Enter the new password for the transformation cross-reference database.
The **Enter Key Password** prompt appears.
4. Enter the password PDC uses for accessing the PDC alias key in the keystore (*BRM_Integration_Pack_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.

5. Enter the password used for accessing the keystore.

The command window displays the new password for the transformation cross-reference database in encrypted form. For example:

```
FJwT2B1Hcws
```

6. Copy the encrypted password.
7. Open the *BRM_Integration_Pack_home/apps/syncpdc/SyncPDCCConfiguration.xml* file in a text editor.
8. Search the file for the following text:

```
<xrefDatabase>
  <password>CrossRefPassword</password>
</xrefDatabase>
```

9. Replace *CrossRefPassword* with the copied encrypted password.
10. Save and close the file.
11. Open the *BRM_Integration_Pack_home/apps/transformation/TransformationConfiguration.xml* file in a text editor.
12. Search the file for the following text:

```
<xrefDatabase>
  <password>CrossRefPassword</password>
</xrefDatabase>
```
13. Replace *CrossRefPassword* with the copied encrypted password.
14. Save and close the file.
15. Open the *BRM_Integration_Pack_home/apps/migration/MigrationConfiguration.xml* file in a text editor.
16. Search the file for the following text:

```
<xrefDatabase>
  <password>CrossRefPassword</password>
</xrefDatabase>
```
17. Replace *CrossRefPassword* with the copied encrypted password.
18. Save and close the file.

Changing the Encrypted Migration Cross-Reference Database Password

To change the encrypted migration cross-reference database password:

1. Go to the *BRM_Integration_Pack_home/apps/bin* directory.
2. Run the following command:

```
encrypt
```

The **Enter Password** prompt appears.
3. Enter the new password for the migration cross-reference database.

The **Enter Key Password** prompt appears.
4. Enter the password PDC uses for accessing the PDC alias key in the keystore (*BRM_Integration_Pack_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.
5. Enter the password used for accessing the keystore.

The command window displays the new password for the migration cross-reference database in encrypted form. For example:

```
FJwT2B1Hcws
```
6. Copy the encrypted password.
7. Open the *BRM_Integration_Pack_home/apps/migration/MigrateConfiguration.xml* file in a text editor.
8. Search the file for the following text:

```
<migrateDatabase>
  <password>MigrationCrossRefPassword</password>
```

```
</migrateDatabase>
```

9. Replace *MigrationCrossRefPassword* with the copied encrypted password.
10. Save and close the file.

Changing the Encrypted PDC User Password

To change the encrypted PDC user password:

1. Go to the *PDC_home/apps/bin* directory.
2. Run the following command:

```
encrypt
```

The **Enter Password** prompt appears.

3. Enter the new password for the PDC user that has to be encrypted.
The **Enter Key Password** prompt appears.
4. Enter the password PDC uses for accessing the PDC alias key in the keystore (*PDC_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.

5. Enter the password used for accessing the keystore.

The command window displays the new password for the PDC user in encrypted form. For example:

```
FJwT2B1Hcws
```

6. Copy the encrypted password.
7. Open the *PDC_home/apps/bin/ImportExportConfiguration.xml* file in a text editor.
8. Search the file for the following text:

```
<pdcPassword>PDCUserPassword</pdcPassword>
```

9. Replace *PDCUserPassword* with the copied encrypted password.
10. Save and close the file.
11. Go to the *BRM_Integration_Pack_home/apps/bin* directory.
12. Run the following command:

```
encrypt
```

The **Enter Password** prompt appears.

13. Enter the new password for the PDC user that has to be encrypted.
The **Enter Key Password** prompt appears.
14. Enter the password PDC uses for accessing the PDC alias key in the keystore (*BRM_Integration_Pack_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.

15. Enter the password used for accessing the keystore.

The command window displays the new password for the PDC user in encrypted form. For example:

FJwT2B1Hcws

16. Copy the encrypted password.
17. Open the *BRM_Integration_Pack_home/apps/syncpdc/SyncPDCConfiguration.xml* file in a text editor.
18. Search the file for the following text:

```
<pdcpPassword>PDCUserPassword</pdcpPassword>
```
19. Replace *PDCUserPassword* with the copied encrypted password.
20. Save and close the file.
21. Open the *BRM_Integration_Pack_home/apps/migration/MigrationConfiguration.xml* file in a text editor.
22. Search the file for the following text:

```
<pdcpPassword>PDCUserPassword</pdcpPassword>
```
23. Replace *PDCUserPassword* with the copied encrypted password.
24. Save and close the file.

Changing the Encrypted BRM Database Password

To change the encrypted BRM database password:

1. Go to the *BRM_Integration_Pack_home/apps/bin* directory.
2. Run the following command:

```
encrypt
```

The **Enter Password** prompt appears.
3. Enter the new password for the BRM database.

The **Enter Key Password** prompt appears.
4. Enter the password PDC uses for accessing the PDC alias key in the keystore (*BRM_Integration_Pack_home/apps/conf/pdc.jks*).

The **Enter Keystore Password** prompt appears.
5. Enter the password used for accessing the keystore.

The command window displays the new password for the BRM database in encrypted form. For example:

FJwT2B1Hcws
6. Copy the encrypted password.
7. Open the *BRM_Integration_Pack_home/apps/transformation/TransformationConfiguration.xml* file in a text editor.
8. Search the XML file for the following line:

```
<bredatabase>  
<password>breDBPassword</password>  
</bredatabase>
```
9. Replace *breDBPassword* with the copied encrypted password.
10. Save and close the file.

Backing Up and Restoring PDC

This section describes the tasks that you can perform to back up and restore your PDC system.

To prevent any data loss and minimize the impact of software or hardware failure, back up your system immediately after installing or updating the system. Repeat the backup process whenever you make any changes in the data or in the configuration files.

If you do not back up the PDC system regularly, you need to reinstall and reconfigure PDC if the system is corrupted due to operational or system errors. Reinstalling and reconfiguring eliminates any chance of recovering and reprocessing data processed by the PDC system at the time of the error.

To perform a complete backup of your PDC system, make a complete offline copy of the following:

- The WebLogic server **domains** directory; by default, *MW_Home/user_projects/domains/PDC*. For instructions, see ["Backing Up a Directory"](#).
- The PDC installation directory and its content: *PDC_home*. *PDC_home* contains the PDC keystore. For instructions, see ["Backing Up a Directory"](#).
- The Oracle Inventory (**oraInventory**) directory. Open the */etc/oraInst.loc* (Linux) file or the */var/opt/oracle/OraInst.loc* (Solaris) file to find the default location of the **oraInventory** directory. For instructions, see ["Backing Up a Directory"](#).
- BRM Integration Pack and its content: *BRM_Integration_Pack_home*. This pack includes the keystore for BRM Integration Pack. For instructions, see ["Backing Up a Directory"](#).
- The PDC directory and its content: *PDC_BRM_home*. For instructions, see ["Backing Up a Directory"](#).
- The PDC database schema. Make a complete offline backup of your PDC database schema using the appropriate backup tools for your schema version.

For example, on the machine on which the PDC users are created, run the Oracle database export (**exp**) utility to export the data in the PDC database to a file and then store it in a safe location. You can later run the import (**imp**) utility to import the data from the file into the PDC database when you restore PDC. See your database documentation for more information on performing full database backups.

- The transformation cross-reference database schema. Make a complete offline backup of your transformation cross-reference database schema using the appropriate backup tools for your schema version.

For example, on the machine on which the PDC users are created, run the Oracle database export (**exp**) utility to export the data in the transformation cross-reference database to a file and store it in a safe location. You can later run the import (**imp**) utility to import the data from the file into the transformation cross-reference database when you restore PDC. See your database documentation for more information on performing full database backups.

- The migration cross-reference database schema, if you installed the migration utility during the PDC 11.1 Patch Set 4 or PDC 11.1 Patch Set 5 installation. Make a complete offline backup of your migration cross-reference database schema using the appropriate backup tools for your schema version.

For example, on the machine on which the PDC users are created, run the Oracle database export (**exp**) utility to export the data in the migration cross-reference

database to a file and store it in a safe location. You can later run the import (**imp**) utility to import the data from the file into the migration cross-reference database when you restore PDC. See your database documentation for more information on performing full database backups.

- The PDC database.

Make a complete offline backup of your PDC database using the appropriate backup tools for your database version and ensure that the backup is completely valid and usable. The backup must contain both the database definition and all the database contents. See your database documentation for more information on performing full database backups.

Important: Store this backup in a safe location. The data in these files will become necessary if you encounter any issues or during system failure.

Backing Up a Directory

To back up a directory:

1. Go to the directory for which you want to create a backup.
2. Copy the content of the directory to a new directory:

```
cp -R DirectoryName NewName
```

where *NewName* is the name for the new directory.

3. Create an archive of the entire directory:

```
tar cvf NewName.tar NewName
```

A compressed TAR file, of all copied files, is created with the extension **tar** (for example, *weblogic_domain_bkp.tar*).

4. Store the backup copy in a safe location (for example, in a different file system outside of PDC).

Restoring a Complete System Backup

To restore a complete PDC system backup:

1. On the machine in which PDC is installed, delete or rename the damaged directories:

- To delete, run the following command:

```
rm -r Directory_Name
```

- To rename, run the following command:

```
mv Directory_Name
```

2. Retrieve the backup tar files.
3. Extract the backup copy of the directories from the tar files:

```
tar xvf DirectoryName.tar
```

The command recreates the directories in your restored installation directory.

4. Import the following schemas into a Oracle database or databases in the restored machine or in another machine:

- PDC database schema
- Transformation cross-reference database schema
- Migration cross-reference database schema (if applicable)

For example, if you have exported the data into a file by using the Oracle database export (**exp**) utility, run the Oracle database import (**imp**) utility to import the data from the file into a Oracle database. See your database documentation for more information.

5. Ensure that PDC is connected to the database or databases in which the schemas that you imported in step 4 are available by updating the database connection details in the following files:

- *BRM_Integration_Pack_home*/apps/syncpdc/SyncPDCCConfiguration.xml
- *PDC_home*/apps/bin/ImportExportConfiguration.xml
- *BRM_Integration_Pack_Home*/apps/migration/MigrationConfiguration.xml
- *BRM_Integration_Pack_Home*/apps/transformation/TransformationConfiguration.xml

6. Start all PDC processes.
7. Verify that the PDC configuration and the PDC data are recovered.

Troubleshooting Pricing Design Center

This chapter provides guidelines to help you troubleshoot problems with Oracle Communications Pricing Design Center (PDC). It contains information about log files, diagnosing common problems, and contacting Oracle Global Support.

Troubleshooting Checklist

When any problems occur, it is best to do some troubleshooting before you contact Oracle Global Support:

- You know your installation better than Oracle Global Support does. You know if anything in the system has been changed, so you are more likely to know where to look first.
- Troubleshooting skills are important. Relying on Oracle Global Support to research and solve all of your problems prevents you from being in full control of your system.

If you have a problem with your PDC system, ask yourself these questions first, because Oracle Global Support will ask them of you:

- What exactly is the problem? Can you isolate it?
Oracle Global Support needs a clear and concise description of the problem, including when it began to occur.
- What do the log files say?
This is the first thing that Oracle Global Support asks for. Check the error log for the PDC component you are having problems with.
- Has anything changed in the system? Did you install any new hardware or new software? Did the network change in any way? Does the problem resemble another one you had previously? Has your system usage recently jumped significantly?
- Is the system otherwise operating normally? Has response time or the level of system resources changed? Are users complaining about additional or different problems?

Using Error Logs to Troubleshoot PDC

PDC error log files provide detailed information about system problems. If you are having a problem with PDC, look in the log files. PDC logs specific details about the PDC GUI and the transformation in separate sets of files.

PDC GUI Logs

PDC logs specific details about actions performed in the PDC GUI in Oracle WebLogic Server log files. See the Oracle WebLogic Server Administration Console Help for more information.

Transformation Engine Logs

PDC generates two types of transformation engine log files for each transformation engine:

- Master log file: This file logs the basic details of the transformation engine, such as the initialization details of the transformation engine, and so forth.
- Transaction log file: This file logs the details of the transactions performed by the transformation engine, such as work item details, details of calls to Oracle Communications Billing and Revenue Management (BRM) utilities, and so forth. A separate transaction log file is generated for every transaction.

The location of the transformation log files is specified in the *BRM_Integration_Pack_Home/apps/transformation/TransformationConfiguration.xml* file in the **<transformationLog>** elements, where *BRM_Integration_Pack_Home* is the directory in which you installed the BRM Integration Pack.

You can define the logging level of the transformation engine log files in the *BRM_Integration_Pack_Home/apps/transformation/log-config.properties* file. The default logging level set in the file is **INFO**.

Diagnosing PDC Problems

PDC problems can be diagnosed using the Oracle WebLogic Server Diagnostic Framework. The Oracle WebLogic Server Diagnostic Framework allows you to collect, archive, and access diagnostic information about applications hosted on the WebLogic server. See the Oracle WebLogic Server Administration Console Help for more information.

[Table 10–1](#) lists some common problems with PDC and shows you how to diagnose the error messages and resolve the problems.

Table 10–1 Common PDC Problems and Solutions

Problem	Possible Causes	Solution
Importing pricing components by using the ImportExportPricing utility fails.	Validation error due to one of the following reasons: ■ Incorrect configuration of the pricing components in the input XML file. ■ The input XML file does not conform to the format detailed in the XSD file for pricing components. ■ A feature configured for the pricing component is not supported by the target engine.	Check the ImportExportPricing utility log file for details of the error, correct the error, and import the pricing components again.

Table 10–1 (Cont.) Common PDC Problems and Solutions

Problem	Possible Causes	Solution
Changeset is successfully submitted through the PDC UI, but returns error.	There is invalid data that was not detected during validation.	Check the transformation engine log files for details of the error: ■ If the error message states that this is a "Configuration Missing" error, it is likely that a prerequisite setup component was not transformed successfully. Verify that all the referenced setup components are configured correctly. If required, update and resubmit the setup components and then use the Fix option to resubmit the changeset. ■ If there is nothing wrong with your configuration, verify that the target engine mappings (supported configurations) for the service, event, account, and RUMs used in the pricing components are correct. Ensure that the changes made in BRM to these components have been synchronized with PDC.
-	Error in the load utility of the target engine in BRM.	The error message will not provide the details of the error. Check the BRM loadpricelist and LoadIFWConfig utility log files for details of the error.
-	Transformation error	Transformation errors for pricing components submitted are returned in the PDC UI. Check the error messages in the PDC UI and follow the instructions below the error.
Error while submitting changeset with message "Error publishing changeset"	The job dispatcher is not configured correctly.	Check that the job dispatcher is deployed correctly and the status is Active in the WebLogic Administration Console. Check the Oracle WebLogic Server log files for relevant messages.
Changeset when submitted remains in pending state for a duration longer than normal.	Transformation engines are not running.	Check that the transformation engines are running on the system where BRM Integration Pack is installed by using the standard operating system commands.
-	Transformation engines are running but are configured to connect to the wrong WebLogic server instance.	Verify the host name of the WebLogic server in the <i>BRM_Integration_Pack_Home/apps/transformation/TransformationConfiguration.xml</i> file. If required, update the host name of the WebLogic server and restart the transformation engines.

Getting Help for PDC Problems

If you cannot resolve the PDC problem, contact Oracle Global Support.

Before you contact Oracle Global Support, try to resolve the problem with the information logged in the log files. See ["Using Error Logs to Troubleshoot PDC"](#) for

more information. If this does not help to resolve the problem, note the following information:

- A clear and concise description of the problem, including when it began to occur.
- Relevant portions of the relevant log files.
- Relevant configuration files.
- Recent changes in your system after which the problem occurred, even if you do not think they are relevant.
- List of all PDC components and patches installed on your system.

When you are ready, report the problem to Oracle Global Support.