Oracle Public Sector Revenue Management

Installation Guide

Release 2.5.0 Service Pack 1

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ORACLE

Oracle Public Sector Revenue Management Installation Guide

Contents

Preface

This guide provides an overview of installing Oracle Public Sector Revenue Management and is intended for anyone interested in the installation process. This section includes:

To complete installation you should have:

- Administrative privileges on the host where you are installing the software.
- Experience installing and configuring application servers and other software.

Related Documents

The following documentation is included with this release.

Installation, Configuration, and Release Notes

- *Oracle Public Sector Revenue Management Release Notes*
- *Oracle Public Sector Revenue Management Quick Install Guide*
- *Oracle Public Sector Revenue Management Installation Guide*
- *Oracle Public Sector Revenue Management Database Administrator Guide*
- *Oracle Public Sector Revenue Management Licensing Information User Manual*

User Guides

- *Oracle Public Sector Revenue Management Business User Guide*
- *Oracle Public Sector Revenue Management Administrative User Guide*

Supplemental Documents

- *Oracle Public Sector Revenue Management Security Guide*
- *Oracle Public Sector Revenue Management Server Administration Guide*

Updates to Documentation

Additional and updated information about the product is available from the **Knowledge Base** section of **My Oracle Support** (http://support.oracle.com). Please refer to **My Oracle Support** for more information. Documentation updates are also posted on the Oracle Technology Network documentation page as they become available (http://docs.oracle.com/cd/E72219_01/documentation.html).

Conventions

The following text conventions are used in this document:

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

Additional Resources

For more information and support, visit the Oracle Support Web site at:
http://www.oracle.com/support/index.html

Chapter 1

Introduction

This chapter provides an overview of the installation of Oracle Utilities Public Sector Revenue Management.

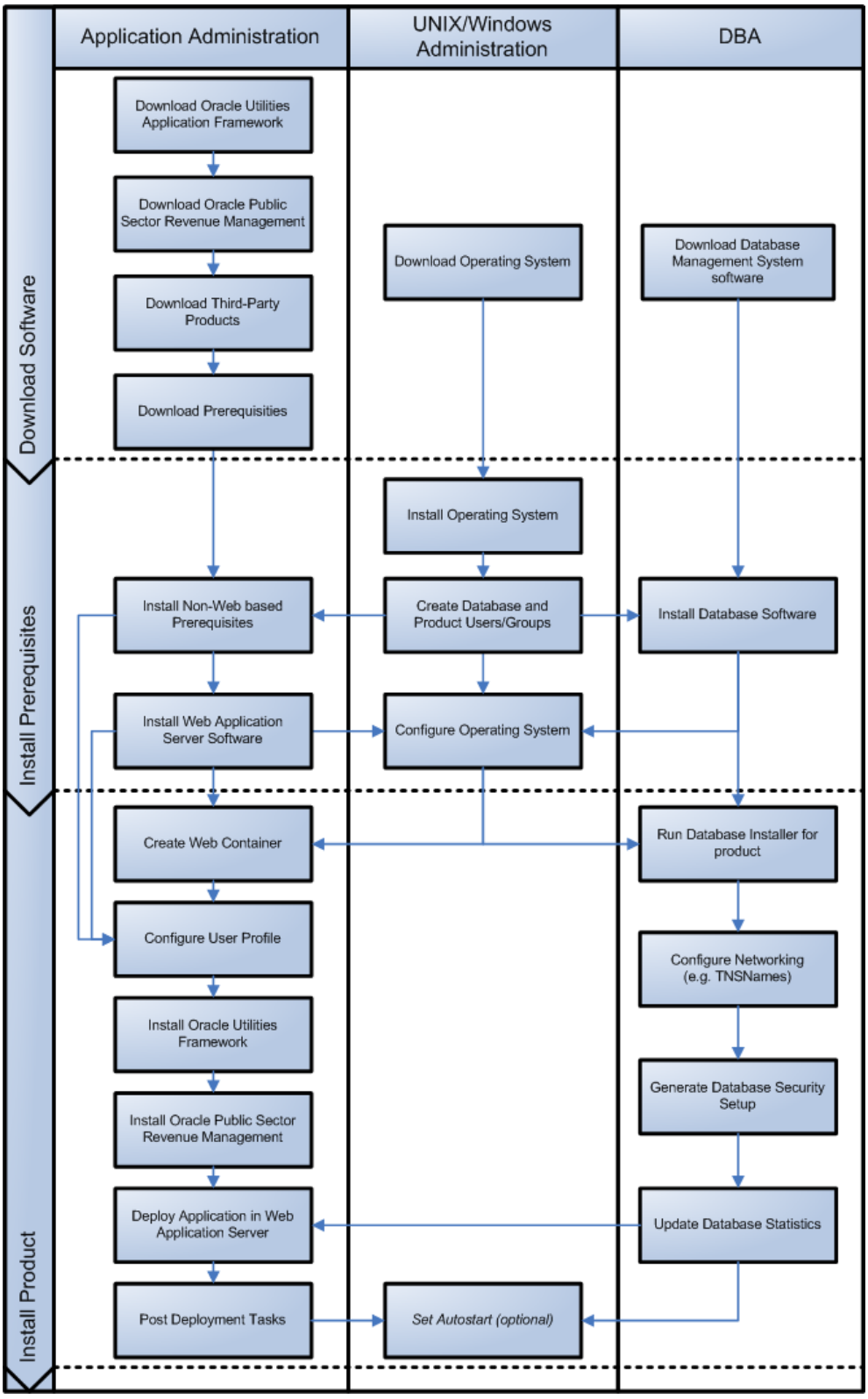
Installation Overview

Installing Oracle Public Sector Revenue Management involves the following steps:

1. Review the different tiers of the application architecture as described in Application Architecture.
2. Understand the hardware requirements for installing the application and the supported platforms for the application and database servers as described in Supported Platforms and Hardware Requirements.

   Note: The installation and administration of the database server tier is described in detail in the document Oracle Public Sector Revenue Management *Database Administrator's Guide*.
3. Install the database as described in the document Oracle Public Sector Revenue Management *Database Administrator's Guide*.
4. Plan your installation as described in Planning the Installation.
5. Install all required third-party software as described in Installing Prerequisite Software. The required software is listed for each supported combination of operating system and application server.
6. Install the framework for the application as described in Installing the Application Server Component of Oracle Utilities Application Framework.
7. Install Oracle Public Sector Revenue Management as described in Installing the Application Server Component of Oracle Public Sector Revenue Management.
8. Follow the installation guidelines described in Additional Tasks.

The following diagram provides an overview of the steps that need to be taken to install and configure Oracle Public Sector Revenue Management:


Application Administration
UNIX/Windows Administration
DBA
Download Software
Install Prerequisites
Install Product
Download Oracle Utilities Application Framework
Download Oracle Public Sector Revenue Management
Download Third-Party Products
Download Prerequisities
Download Operating System
Download Database Management System software
Install Operating System
Install Non-Web based Prerequisites
Create Database and Product Users/Groups
Install Database Software
Install Web Application Server Software
Configure Operating System
Create Web Container
Run Database Installer for product
Configure User Profile
Configure Networking (e.g. TNSNames)
Install Oracle Utilities Framework
Generate Database Security Setup
Install Oracle Public Sector Revenue Management
Deploy Application in Web Application Server
Update Database Statistics
Post Deployment Tasks
Set Autostart (optional)

Application Architecture

The Oracle Utilities Application Framework application is deployed on multiple tiers.

Please see the Oracle Public Sector Revenue Management *Server Administration Guide* for a more detailed description of the application architecture and individual tiers.

Tier 1: Desktop/Client, or Presentation Tier

This tier is implemented in a browser-based client. Users use a desktop client web browser to log in to and use the Oracle Public Sector Revenue Management application. Note also that a desktop machine running Microsoft Windows and the Oracle client is required to perform some of the Oracle Public Sector Revenue Management product installation steps.

Tier 2: Web Application / Business Application Server, or Business Logic Tier

This tier is implemented in a web application server, business application server, or the batch server. The business application component can be installed as part of the web application server, or as a separate component. Except where explicitly noted, most of the Oracle Utilities Application Framework installation documentation assumes that the web application and business application servers reside together. The batch infrastructure will also run within this tier. You can have multiple batch server instances that serve the application.

Tier 3: Database, or Persistence Tier

This tier is implemented in a database server. The database server stores data maintained by the Oracle Public Sector Revenue Management application. More specifically, the database tier contains the data server files and database executables that physically store the tables, indexes, and other database objects for your system.

Installation Components

The Oracle Public Sector Revenue Management product installation consists of the following components:

- Database Components:
    - Oracle Utilities Application Framework database
    - Oracle Utilities Service and Measurement Data Foundation database
    - Oracle Public Sector Revenue Management database
- Application Components:
    - Oracle Utilities Application Framework application
    - Oracle Utilities Service and Measurement Data Foundation application

- Oracle Public Sector Revenue Management application

For a successful installation, you must install ALL of the above components.

Installation Types

The first step in the installation procedure is to determine the installation type that meets your business requirements. The following are the possible installation types:

- Initial Installation: A base installation, typically used for a production environment.
- Upgrade Installation: An upgrade installation from version 2.5.0.0 to version 2.5.0.1.0.

Please see Recommendations for Creating a Production Environment for information about which installation type is appropriate for a production environment.

The following sections describe these installation types in detail.

Initial Installation

This installation type is applicable when installing Oracle Public Sector Revenue Management for the first time or from scratch. For an initial install, you must install all of the following components:

- Database components:

  Refer to the "Initial Install" section of the Oracle Public Sector Revenue Management *Database Administrator's Guide* for more information.

- Application components:
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework Single Fix Pre-Requisite Rollup for Oracle Utilities Service and Measurement Data Foundation
  - Oracle Utilities Service and Measurement Data Foundation application
  - Oracle Public Sector Revenue Management application

Refer to chapter "Installing Oracle Utilities Meter Data Management - Initial Installation" for the steps involved in installing each of the above components.

Upgrade Installation

For an upgrade, you must upgrade all of the following components:

- Database components:

  Refer to the "Upgrade Install" section of the Oracle Public Sector Revenue Management *Database Administrator Guide* for more information.

- Application components:
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework Single Fix Pre-Requisites
  - Oracle Public Sector Revenue Management application

Recommendations for Creating a Production Environment

For a production environment, Oracle recommends that you complete the Initial Installation installation type. If there is any custom configuration that needs to be migrated from a development or "gold" environment into production, the migration can be done by using the Configuration Migration Assistant (CMA). Please refer to the appendix "Configuration Migration Assistant" in the *Oracle Public Sector Revenue Management Administrative User Guide* for more details about CMA.

Oracle does not recommend creating a production environment by using the Demo Installation installation type, or by cloning an existing Demo installation.

Media Pack Components

The Oracle Public Sector Revenue Management Media Pack includes the following:

Documentation Packages

- Oracle Public Sector Revenue Management v2.5.0.1.0 Quick Install Guide
- Oracle Public Sector Revenue Management v2.5.0.1.0 Release Notes
- Oracle Public Sector Revenue Management v2.5.0.1.0 Install Documentation
- Oracle Public Sector Revenue Management v2.5.0.1.0 User Documentation

Installation Packages

- Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform
- Oracle Utilities Application Framework v4.3.0.4.0 Prerequisite Single Fixes
- Oracle Public Sector Revenue Management v2.5.0.1.0 Multiplatform
- Oracle Public Sector Revenue Management v2.5.0.1.0 Oracle Database
- Oracle Public Sector Revenue Management v2.5.0.1.0 Reports
- Oracle Public Sector Revenue Management v2.5.0.1.0 Sample programs

Chapter 2

Supported Platforms and Hardware Requirements

The following sections provide information on the supported platforms and requirements, including:

Software and Hardware Considerations

There are many factors that can influence software and hardware decisions. For example, your system may have to satisfy specific performance, availability, or scalability requirements, or to support running in a language other than English. These business requirements, together with the chosen system architecture, should be used in initial software and hardware planning.

Some of the questions that you should answer before beginning the installation include:

- On which hardware platform and operating system will Oracle Public Sector Revenue Management be deployed?
- On which web server product will Oracle Public Sector Revenue Management deploy?
- On which database product will Oracle Public Sector Revenue Management deploy?
- Do you plan to deploy multiple Oracle Public Sector Revenue Management instances on the same physical server?
- How do you plan to deploy Oracle Public Sector Revenue Management?
    - Web/application/database on the same physical server
    - Web/application on one server and database on separate server
    - Each component on its own server

For detailed descriptions of various deployment architecture choices that may aid in planning, please see the document *Oracle Utilities Application Framework Architecture Guidelines,* available on My Oracle Support (Article ID 807068.1).

The final hardware and software decisions must comply with the specific requirements of Oracle Public Sector Revenue Management, as described in the rest of this chapter.

Operating Systems and Application Servers

The table below details the MINIMUM operating system and application server combinations on which this version of Oracle Public Sector Revenue Management is supported.

Operating System and Web Browser (Client)	Operating System (Server)	Chipset	Application Server	Database
Microsoft Windows OS 7, 8.1, 10 (Internet Explorer 11, Firefox ESR 45)	AIX 7.1 TL01+ AIX 7.2 TL00+	POWER	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+	Oracle 12.1.0.1+
	Oracle Linux 6.5+, 7.x (based on Red Hat Enterprise Linux)*	x86_64	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+	Oracle 12.1.0.1+
	Oracle Solaris 11	SPARC	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+	Oracle 12.1.0.1+
	Windows Server 2012 R2 (Not supported in production)	x86_64	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+	Oracle 12.1.0.1+

Refer to the Product Support Matrix (Doc ID 2069391.1) on Oracle Support to determine if support for newer versions of the listed products have been added.

Please note the following:

- Version numbers marked with a "+" are the MINIMUM version supported. That version and all future 4th digit updates will be supported.

  Example: Oracle 12.1.0.1+ means that 12.1.0.1 and any higher 12.1.0.x versions of Oracle are supported.

  * An "x" indicates that any version of the digit designed by the "x" is supported.

    Example: Linux 7.x indicates that any version of Linux 7 (7.0, 7.1, 7.2 etc) will be supported.

Windows Server

- Windows Server is **not** supported for Production environments. Wherever Windows Server is referenced within this guide, it is supported for Test or Development environments **only**.

WebLogic Server

- WebLogic Server Standard and Enterprise Edition 12.1.3.0+ are supported for both embedded and native installations. Starting at Weblogic 12.2.*, embedded installations will be not be supported. Only the native installation will be supported.
- WebLogic Server Enterprise Edition is required if using application clustering.

- Customers must download Oracle WebLogic Server from the Oracle Software Delivery Cloud.

Oracle VM Support
This version of Oracle Public Sector Revenue Management is supported on Oracle VM Server for x86 for supported releases of Oracle Linux and Microsoft Windows operating systems.

Refer to My Oracle Support knowledge base article 249212.1 for Oracle's support policy on VMWare.

Hardware and Web Browser Requirements

The following section outlines client side hardware requirements for Oracle Public Sector Revenue Management.

Client Side Hardware Requirements

Configuration	Processor	Memory (RAM)	Monitor (Display)
Minimum	1 GHz or faster 64-bit (x64) processor	2 GB	1280x1024
Recommended*	3 GHz or faster 64-bit (x64) processor	4 GB	1280X1024

* The Recommended configuration supports better performance of the client.

Web Browser Requirements

The web browsers listed below are supported when used on each of the operating systems indicated:

Browsers	Windows OS
Internet Explorer 11 Firefox ESR 45	Microsoft Windows OS 7, 8.1, 10 (64-bit)

Application Server Memory Requirements

For each application server environment a minimum of 4 GB of real memory is required, plus 6 GB of swap space. The approximate disk space requirements in a standard installation are as follows (the size represents the MINIMUM required):

Location	Size	Usage
	minimum	This is the location where the application and framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files.
	minimum	This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected.
Location of the application web work files on the web servers	minimum	This location is used by various web server vendors to expand the application. It should be considered when installing these products. Refer to the individual web server documentation to determine the location of the temporary files.
Installation Temporary Area		The application gets installed from this location. You need enough space to un-compress the files and install the application.
Oracle Data Area	4 GB minimum	This location is where the Oracle database data files are stored. The size of this space should be based on the requirements of the production environment. For an initial or demo database install 4 GB should be sufficient.

Support for Software Patches and Upgrades

Due to the ongoing nature of software improvement, vendors will periodically issue patches and service packs for the operating systems, application servers and database servers on top of specific versions that Oracle products have already been tested against.

If it is necessary to apply an upgrade, please do so in a test environment that is running on the same platform as your production environment prior to updating the production environment itself. The exception to this is Hibernate software version 4.1.0. This version should not be upgraded.

Always contact Oracle Support prior to applying vendor updates that do not guarantee backward compatibility.

Chapter 3

Planning the Installation

This section provides information for planning an Oracle Public Sector Revenue Management installation, including:

- Installation Considerations
- Prerequisite Software List
- Installing Prerequisite Software

Before Installation

Refer to My Oracle Support for up-to-date additional information about installing Oracle Public Sector Revenue Management.

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Public Sector Revenue Management. This step is included as part of the installation instructions.

Installation Considerations

Please review the following prior to installation:

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Public Sector Revenue Management. Refer to the *Oracle Public Sector Revenue Management Release Notes* for more information.

Embedded vs Native/Clustered Installation

By default, Oracle Utilities Application Framework uses Oracle WebLogic in embedded mode. This means the Oracle WebLogic installation is essentially pointed to the product installation and the executables of Oracle WebLogic are only used to execute the code. This has the advantage of being simple and quick to implement with the Oracle Utilities Application Framework generating a simple configuration for Oracle WebLogic to use.

If you want to take advantage of more advanced WebLogic features such as high performance (multiple managed servers) and high availability (clustering) configuration, do not use the embedded install. Rather, use the native/clustered installation which allows you to deploy the Oracle Utilities Application Framework JEE components within Oracle WebLogic, as you would with other JEE applications.

Application Server Clustering

If you are considering application server clustering, refer to the following whitepaper, available on My Oracle Support, for additional information:

- Implementing Oracle ExaLogic and/or Oracle WebLogic Clustering (Doc ID: 1334558.1)
- Additional information about Weblogic clustering can be found at http://docs.oracle.com/cd/E17904_01/web.1111/e13709/toc.htm.

Native Mode in WebLogic

If you plan on using the Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to the whitepaper titled: "Native Installation Oracle Utilities Application Framework (Doc Id: 1544969.1) on My Oracle Support.

Directory Names

Directory cannot contain whitespace characters.

Prerequisite Software List

Before you install Oracle Public Sector Revenue Management, you must install prerequisite software. Refer to the respective installation documentation of the software for instructions on downloading and installing.

This section includes information on the following:

- Prerequisite Software for Database Server
- Prerequisite Software for Application Server
- Web Browser Requirements

Prerequisite Software for Database Server

The prerequisite software for the database component of Oracle Public Sector Revenue Management includes:

- Oracle Database Server 12.1.0.1+ Standard or Enterprise Edition
  This is required for installing the database component of the Oracle Public Sector Revenue Management product.

Prerequisite Software for Application Server

The prerequisite software for the application component of Oracle Public Sector Revenue Management is as follows:

- Oracle 12.1.0.1 Client
- Oracle Client 12c — Runtime Option
- IBM Java Software Development Kit
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit) or Oracle WebLogic 12c (12.2.1.1+) 64-bit, as required.

Web Browser Requirements

The web browsers listed below are supported when used on each of the operating systems indicated:

Browsers	Windows OS
Internet Explorer 11 Firefox ESR 45	Microsoft Windows OS 7, 8.1, 10 (64-bit)

Installing Prerequisite Software

This section describes the software that needs to be installed for each of the supported operating system and application server combinations including:

This section describes the software that needs to be installed for each of the supported operating system and application server combinations, including:

- AIX 7.1 TL01 or AIX 7.2 TL0 Application Server
- Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server
- Oracle **Solaris 11 Application Server**

AIX 7.1 TL01 or AIX 7.2 TL0 Application Server

This section describes the software requirements for operating the application using the AIX application server including:

- Supported Application Servers
- AIX Operating System Running on Power5 and Power6 Architecture
- IBM Java Software Development Kit
- Oracle 12.1.0.1 Client
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit)
- Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server

Supported Application Servers

Operating System	Chipset	Application Server
AIX 7.1 TL1 or 7.2 TLO (64-bit)	POWER 64-bit	Oracle WebLogic 12.1.3.0+ (64-bit) version

AIX Operating System Running on Power5 and Power6 Architecture

This section describes requirements for AIX running on Power5 and Power6 architecture.

UNIX Administrator User ID

The following user groups and accounts have to be created to install and administer the application

Description	Default Value	Customer Defined Value
Oracle Public Sector Revenue Management Administrator User ID	cissys	
Oracle Public Sector Revenue Management User Group	cisusr	

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user ID is often referred to as the "cissys" user ID. You should substitute that with the customer defined user ID when not using the default value. After the initial install or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID is the only one given access to the installed files.

1. Create a group called cisusr (user group).
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

   The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

   To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

   ```
   set +o noclobber
   ```

Security Configuration

Various options exists to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 022 to ensure files created during normal operation have the correct permissions.

Replace these users and groups for your installation defaults:

User	Group	Description
cissys	cisusr	This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application.
cisadm	cisusr	Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

IBM Java Software Development Kit

Version 8.0 SR15 64-bit, IBM SDK, Java Technology Edition, Version 8.0.

Installation of Java is a prerequisite for using Oracle WebLogic as an application server.

At the time of release, AIX Java packages could be obtained from:

http://www.ibm.com/developerworks/java/jdk/aix/service.html

The web server requires the 64-bit Java platform in order to function. The main prerequisite for the web server is the version of Java mentioned above.

For the Administrator user ID (cissys), ensure that the environment variable JAVA_HOME is set up, and that "java" can be found in cissys' PATH variable.

Oracle 12.1.0.1 Client

Install the Oracle Client as described in the Oracle Client installation documentation. Use the cissys account to install the Oracle Client. If another user installs the Oracle Client, make sure the cissys user ID has the proper execute permissions.

For the cissys user ID, ensure that the environment variable ORACLE_CLIENT_HOME is set up, and that ORACLE_CLIENT_HOME/perl/bin is the first Perl listed in the cissys account's PATH variable.

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

   ```
   export HIBERNATE_JAR_DIR=<Hibernate 3rd party jars depot>
   ```

2. Download the hibernate-release-4.1.0.Final.zip file from http://sourceforge.net/projects/hibernate/files/hibernate4/
3. Click the "4.1.0.Final" link to download the zip file.
4. Extract the contents of the archive file:

   ```
   jar -xvf hibernate-release-4.1.0.Final.zip
   ```

   Note: You must have Java JDK installed on the machine to use the jar command. Make sure you install the JDK supported for your platform.

5. Copy the jar files to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following commands:

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
   ```

```
cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-
4.1.0.Final.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-
2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-
GA.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-
3.1.0.CR2.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/jboss-
transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

6. Download the hibernate-search-5.5.4.Final-dist.zip file from https://sourceforge.net/projects/hibernate/files/hibernate-search/
7. Click the "5.5.4.Final" link to download the zip file.
8. Extract the contents of the archive file using the following command

```
jar -xvf hibernate-search-5.5.4.Final-dist.zip
```

9. Copy the jboss-logging-3.3.0.Final.jar file to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following command:

```
cp hibernate-search-5.5.4.Final/dist/lib/required/jboss-
logging-3.3.0.Final.jar to $HIBERNATE_JAR_DIR
```

Oracle WebLogic Server 12.1.3.0+ (64-bit)

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+.

Oracle WebLogic 12c (12.2.1.1+) 64-bit

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server

This section describes the software requirements for operating the application using the Oracle Linux or Red Hat Linux application server.

Supported Application Servers

Operating System	Chipset	Application Server
Oracle Linux 6.5+ or 7.x (64-bit) Red Hat Enterprise Linux 6.x or 7.x (64-bit)	x86_64	Oracle WebLogic 12.1.3.0+ (64-bit) version

Oracle Linux or Red Hat Enterprise Linux Operating System Running on x86_64 64-bit Architecture

This section describes details for Oracle Linux or Red Hat Enterprise Linux running on x86_64 64-bit architecture.

UNIX Administrator User ID

The following user groups and accounts have to be created to install and administer the application:

Description	Default Value	Customer Defined Value
Oracle Public Sector Revenue Management Administrator User ID	cissys	
Oracle Public Sector Revenue Management User Group	cisusr	

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user ID is often referred to as the "cissys" user ID. You should substitute that with the customer defined user ID when not using

the default value. After the initial install or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID is the only one given access to the files installed.

1. Create a group called cisusr (user group)
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

Security Configuration

Various options exists to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 022 to ensure files created during normal operation have the correct permissions.

Replace these users and groups for your installation defaults:

User	Group	Description
cissys	cisusr	This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application.
cisadm	cisusr	Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

Oracle Java Development Kit Version 8+, 64-bit

At time of release, Oracle Java packages could be obtained from:

https://support.oracle.com

The Oracle WebLogic Server requires the 64-bit version. The main prerequisite for the web server is the version of Java mentioned above.

For the user ID cissys, ensure that the environment variable JAVA_HOME is setup, and that java_home/bin and java_home/lib can be found in cissys' PATH variable.

Oracle Client 12.1.0.1+

Install the Oracle Client as described in the Oracle Client installation documentation. Use the cissys account to install the Oracle Client. If another user installs the Oracle Client, make sure the cissys user ID has the proper execute permissions.

For the cissys user ID, ensure that the environment variable ORACLE_CLIENT_HOME is set up, and that ORACLE_CLIENT_HOME/perl/bin is the first Perl listed in the cissys account's PATH variable.

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

   ```
   export HIBERNATE_JAR_DIR=<Hibernate 3rd party jars depot>
   ```

2. Download the hibernate-release-4.1.0.Final.zip file from http://sourceforge.net/projects/hibernate/files/hibernate4/
3. Click the "4.1.0.Final" link to download the zip file.
4. Extract the contents of the archive file:

   ```
   jar -xvf hibernate-release-4.1.0.Final.zip
   ```

   Note: You must have Java JDK installed on the machine to use the jar command. Make sure you install the JDK supported for your platform.

5. Copy the jar files to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following commands:

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-
   core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/
   hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-
   commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-
   4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-
   2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
   ```

```
cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-
GA.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-
3.1.0.CR2.jar $HIBERNATE_JAR_DIR

cp hibernate-release-4.1.0.Final/lib/required/jboss-
transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

6. Download the hibernate-search-5.5.4.Final-dist.zip file from https://sourceforge.net/projects/hibernate/files/hibernate-search/
7. Click the "5.5.4.Final" link to download the zip file.
8. Extract the contents of the archive file using the following command

```
jar -xvf hibernate-search-5.5.4.Final-dist.zip
```

9. Copy the jboss-logging-3.3.0.Final.jar file to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following command:

```
cp hibernate-search-5.5.4.Final/dist/lib/required/jboss-
logging-3.3.0.Final.jar to $HIBERNATE_JAR_DIR
```

Oracle WebLogic Server 12.1.3.0+ (64-bit)

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+.

Oracle WebLogic 12c (12.2.1.1+) 64-bit

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Oracle Solaris 11 Application Server

This section describes the software requirements for operating the application using the Oracle Solaris 11 application server.

- Supported Application Server
- Oracle Solaris 11 Operating System Running on SPARC-based 64-bit Architecture
- Oracle Java Development Kit Version 8+, 64-bit

- Oracle Client 12.1.0.1+
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit)
- Oracle WebLogic 12c (12.2.1.1+) 64-bit

Supported Application Server

Operating System	Chipset	Application Server
Oracle Solaris 11 (64-bit)	SPARC	Oracle WebLogic 12.1.3.0+ (64-bit) version

Oracle Solaris 11 Operating System Running on SPARC-based 64-bit Architecture

This section describes details for Oracle Solaris 11 when running on SPARC-based 64-bit architecture.

UNIX Administrator User ID

The following user groups and accounts have to be created to install and administer the application:

Description	Default Value	Customer Defined Value
Oracle Public Sector Revenue Management Administrator User ID	cissys	
Oracle Public Sector Revenue Management User Group	cisusr	

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user ID is often referred to as the "cissys" user ID. You should substitute that with the customer defined user ID when not using the default value. After the initial install or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID is the only one given access to the files installed.

1. Create a group called cisusr (user group)
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

Security Configuration

Various options exists to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 022 to ensure files created during normal operation have the correct permissions.

Please replace these users and groups for your installation defaults:

User	Group	Description
cissys	cisusr	This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application.
cisadm	cisusr	Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

Oracle Java Development Kit Version 8+, 64-bit

This software is only required for Oracle WebLogic installations. At the time of release, the Oracle Java packages used in the test cycle were downloaded from:

https://support.oracle.com

The Oracle WebLogic Server requires the 64-bit version. The main prerequisite for the web server is the version of Java mentioned above.

For the user ID cissys, ensure that the environment variable JAVA_HOME is setup, and that java_home/bin and java_home/lib can be found in cissys' PATH variable.

Oracle Client 12.1.0.1+

Install the Oracle Client as described in the Oracle Client installation documentation. Use the cissys account to install the Oracle Client. If another user installs the Oracle Client, make sure the cissys user ID has the proper execute permissions.

For the cissys user ID, ensure that the environment variable ORACLE_CLIENT_HOME is set up, and that ORACLE_CLIENT_HOME/perl/bin is the first Perl listed in the cissys account's PATH variable.

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

   ```
   export HIBERNATE_JAR_DIR=<Hibernate 3rd party jars depot>
   ```

2. Download the hibernate-release-4.1.0.Final.zip file from http://sourceforge.net/projects/hibernate/files/hibernate4/
3. Click the "4.1.0.Final" link to download the zip file.
4. Extract the contents of the archive file:

   ```
   jar -xvf hibernate-release-4.1.0.Final.zip
   ```

   Note: You must have Java JDK installed on the machine to use the jar command. Make sure you install the JDK supported for your platform.

5. Copy the jar files to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following commands:

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```

6. Download the hibernate-search-5.5.4.Final-dist.zip file from https://sourceforge.net/projects/hibernate/files/hibernate-search/
7. Click the "5.5.4.Final" link to download the zip file.

8. Extract the contents of the archive file using the following command

```
jar -xvf hibernate-search-5.5.4.Final-dist.zip
```

9. Copy the jboss-logging-3.3.0.Final.jar file to your Hibernate jar directory ($HIBERNATE_JAR_DIR) using the following command:

```
cp hibernate-search-5.5.4.Final/dist/lib/required/jboss-
logging-3.3.0.Final.jar to $HIBERNATE_JAR_DIR
```

Oracle WebLogic Server 12.1.3.0+ (64-bit)

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+.

Oracle WebLogic 12c (12.2.1.1+) 64-bit

Oracle WebLogic software can be downloaded from the Oracle web site. This application server will run as a 64-bit application.

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Installation Checklist

The following checklist will help guide you through the installation process of the application tier. The details for each step are presented in subsequent chapters.

1. Create Group/User ID.
2. Install prerequisite software (see Installing Prerequisite Software for more information).
3. Install one of the following web servers:
   - Oracle WebLogic 12.1.3.0+
4. Review and complete the Installation and Configuration Worksheets.
5. Install Oracle Utilities Application Framework.
6. Install Oracle Utilities Application Framework Service Pack.
7. Install Oracle Public Sector Revenue Management.
8. Deploy the Oracle Public Sector Revenue Management application.
9. Complete the post-installation tasks.
10. Optional: Configure third-party product integration, such as reporting tools.

Chapter 4

Installing the Application Server Component of Oracle Utilities Application Framework

Installing the Oracle Utilities Application Framework ("the framework") is the prerequisite and foundation for installing a framework-based application such as Oracle Public Sector Revenue Management. This section describes the process for installing the Oracle Utilities Application Framework, including:

- Installation Overview
- Pre-Installation Tasks
- Installing Oracle Utilities Application Framework

Installation Overview

The installation packages for your Oracle Utilities Application Framework-based application must be downloaded from the Oracle Software Delivery Cloud.

Application server installations are new, you cannot upgrade an existing application server. The database installation can be an initial install or an upgrade install.

Before you proceed with the installation process:

1. Complete the database installation/upgrade process. Refer to the *Oracle Public Sector Revenue Management Database Administrator's Guide*.
2. Make sure that you have installed all the required third-party software as described in the Installing Prerequisite Software section.

Once the Oracle Utilities Application Framework installation is successfully completed and the framework application environment is created, Oracle Public Sector Revenue Management can be installed on top of the framework environment.

You can download the installation packages from the Oracle Software Delivery Cloud.

This section describes how to install a working Oracle Utilities Application Framework Server, which can then be further configured manually to allow for production performance levels.

Application server installation packages delivered for this version are multi-platform and are ready to install on any supported platform (as described in the Supported Platforms and Hardware Requirements section).

Pre-Installation Tasks

Hardware and Software Version Prerequisites

The section Supported Platforms and Hardware Requirements contains all of the available platforms that are required with this release of the product.

Database Installation

Verify that the database has been installed and is operational. See Oracle Public Sector Revenue Management *Database Administrator's Guide* for more information.

Installation Prerequisites

Chapter 3: Planning the Installation describes all preparations that need to be done on the server prior to installing the application server. Please read carefully the server setup requirements and make sure that all prerequisite software is installed and that all required environment variables are set. Correct server setup and proper environment variable settings are an essential prerequisite for successful environment installation.

System Architecture Overview

Oracle Utilities Application Framework V4.3.0.4.0 is a decoupled system architecture involving a business service application tier and a web application tier. Typically both will run on the same server, but the design does allow each tier to be installed on separate servers.

The design implements a stateless session bean (EJB technology, under Java EE 7), to provide remote access to service invocations. The root web app and XAI web apps can be configured to access service processing locally (as in previous versions), or to make a remote EJB call to perform the service request. In the latter case, the served containers, effectively, run as very thin servlet wrappers around the remote call.

For all supported application servers except for WebLogic expanded configuration (SDK environment), the deployment is in the form of two Enterprise Archive (ear) Files: SPLService.ear and SPLWeb.ear. Web Archive (war) files are created during the installation process but are not deployed.

Copying and Decompressing Install Media

The Oracle Utilities Application Framework installation file is delivered in jar format for both UNIX and Windows platforms. If you are planning to install multiple Oracle Utilities Application Framework environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

To copy and decompress the install media, follow these steps:

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.4.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

   ```
   cd <TEMPDIR>
   jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
   ```

   Note: You will need to have Java JDK installed on the machine used to (un)jar the application server installation package. Please install the JDK that is supported for the install on your platform to be able to use the jar command.
   Java packages are located at: http://www.oracle.com/technetwork/java/archive-139210.html

A sub-directory named "FW.V4.3.0.4.0-SP4" is created. It contains the installation software for the Oracle Utilities framework application server.

Set Permissions for the cistab File in UNIX

Every Oracle Utilities Application Framework environment installed on a server must be registered in the /etc/cistab file located on that server. On UNIX servers, generally only the root user ID has write permissions to the /etc directory. Since the installation process is run by the Oracle administrator user ID (cissys), this user ID may not be able to write to /etc/cistab table.

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the <TEMPDIR>/FW.V4.3.0.4.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc

directory (if it is the first Oracle Utilities Application Framework application environment on the server) and registers a new environment.

The generated script also changes the owner of /etc/cistab file to the Oracle Utilities Application Framework administrator user ID, so that the next time a new environment is created by the same Oracle Utilities Framework administrator user ID, you do not need to run the generated script with the root user ID. Instead the install utility itself proceeds with the registration.

Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Application Framework.

Installation Process (Brief Description)

1. Log on as the Oracle Utilities Framework administrator (the default is cissys on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure your application server and any third-party software required for your platform, as outlined in Chapter 3**:** Planning the Installation
3. Change directory to the <*TEMPDIR*>/FW.V4.3.0.4.0 directory.
4. Set the following path:

   ```
   export PATH=/<JAVA_HOME>/bin:$PATH
   ```

   Note: The above command is only applicable on a Unix platform. <JAVA_HOME> is the location where the JDK has been installed.
5. Start the application installation utility by executing the appropriate script:

   UNIX: ksh ./install.sh

   Windows: install.cmd
6. Follow the messages and instructions that are produced by the application installation utility. Use the completed worksheets in the Installation and Configuration Worksheets section to assist you.
7. Installation of Oracle Utilities Framework Application Server is complete if no errors occurred during installation.

Installation Process (Detailed Description)

1. Log on to the host server as Oracle Utilities Application Framework administrator.

   Logon as cissys (on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure application server and third-party software.

   Complete all steps outlined in Installing Prerequisite Software You will need to obtain specific information for the install.
3. Change directory to the <*TEMPDIR*>/FW.V4.3.0.4.0 directory and start the application installation utility by executing the appropriate script:

   UNIX: ksh ./install.sh

Windows: install.cmd

4. On the Environment Installation Options menu, select item 1: Third Party Software Configuration.

   Use the completed Third Party Software Configuration worksheet in the Installation and Configuration Worksheets section to complete this step.

5. Select menu item 2: Keystore Options.

   Use the completed Keystore Options Worksheet to complete this step. See Installation and Configuration Worksheets.

6. Select menu item 50: Environment Installation Options.

   Use the completed Environment Installation Options Worksheet to complete this step. See Installation and Configuration Worksheets.

   Note: You must create the directory for output (the Log Mount Point). The installation process fails if this directory does not exist.

   - Specify the environment name and the environment directory names for a new installation on a menu screen.
   - Specify the type of the database your environment will be connected to (the default will be Oracle).
   - Specify the web application server your environment will run with (the default will be WebLogic).
   - Enter P to accept the selected options.
   - During this step, the specification of a new environment is checked for validity against /etc/cistab and the permissions on mount points and directories.
   - Below are the mandatory lists of configurable items along with descriptions for a few items.

7. Configure environment parameters.
   - During this step you will configure environment parameters such as web server hosts and ports, database name, and user ID.
   - The application installation utility shows default values for some configuration options.
   - Use the completed Environment Configuration Worksheet to assist you.
   - Note: Every option requires a value for a successful install. It is important to provide all values.
   - When you are done with the parameters setup, proceed with the option P.
   - All of the options will be written in the following File: $ SPLEBASE/etc/ENVIRON.INI.
   - You will be warned if you did not edit a section. You may proceed if you want to keep the default settings.
   - The application installation utility copies the installation media to a new environment.
     - The installation utility copies the new version software from the temporary installation media directory to the new environment.

- If any interruption occurs during this step, you can rerun the install utility from the beginning and follow the interactive instructions. The application installation utility is able to recover from such a failure.

- The application installation utility generates environment configuration parameters:
  - The application installation utility automatically executes the script initialSetup.sh (on UNIX) or initialSetup.cmd (on Windows), located in $SPLEBASE/bin (%SPLEBASE%\bin on Windows) directory. This script populates different application template configuration files with the new environment variables values and completes the rest of the installation steps.

8. Set up environment variables.

   Once the ENVIRON.INI file is created and contains the correct environment parameters, the application installation utility starts a sub shell to the current process by executing the splenviron.sh (on UNIX) or splenviron.cmd (on Windows) script, located in $SPLEBASE/bin (or *%SPLEBSE%\etc for Windows)* directory. This script sets up all the necessary environment variables and shell settings for the application server to function correctly.

   From this point, a number of environment variables have been set up. Some key ones are:

   - $PATH - an adjustment to $PATH is made so that all of the environment scripts and objects will be in the path.
   - $SPLEBASE (%SPLEBASE%) - stands for <SPLDIR>/<SPLENVIRON> directory
   - $SPLOUTPUT (%SPLOUTPUT%) - stands for <SPLDIROUT>/<SPLENVIRON> directory

     Note: Make sure that this directory exists. Otherwise the installation script will fail.

   - $SPLENVIRON (%SPLENVIRON%) - environment name

   For future operations or any post installation steps, you need to first execute the following command to connect your session to the new environment:

   UNIX: $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON

   Windows:%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%

   You need to execute this script each time you want to be connected to the specific environment before performing manual operations such as shutdown, startup or performing an additional application product installation.

   When you have finished the install process, your current online session will be connected to the new environment.

   See the Planning the Installation for settings and configuration.

Chapter 5

Installing the Application Server Component of Oracle Public Sector Revenue Management

This section describes the procedure for installing Oracle Public Sector Revenue Management on top of the previously created Oracle Utilities Application Framework environment. This section includes:

- Pre-installation Tasks
- Installing the Application
- Integrating Customer Modifications into this Release
- Operating the Application
- Installing Service Packs and Patches

You can download the installation package from the Oracle Software Delivery Cloud. If the Framework installation was processed on previously existing Oracle Public Sector Revenue Management environment, then customer modifications relevant for this version and compliant with the proper naming conventions (as described in the Oracle Public Sector Revenue Management *Database Administrator's Guide)* have been preserved in the new environment by the Framework installation process.

To proceed with the Oracle Public Sector Revenue Management installation you need to be connected to the target framework application environment. See the detailed installation instructions in the following section.

You *must* initialize the Framework environment along with the required Patch Set prior to proceeding with Oracle Public Sector Revenue Management Application product installation. For detailed instructions see Preparing for the Installation.

Pre-installation Tasks

This section describes the steps that should be taken before installing Oracle Public Sector Revenue Management.

Installing Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Public Sector Revenue Management.

The patches are available as a convenience rollup inside the PSRM-V2.5.0.1.0-FW-PREREQ-MultiPlatform.zip zip file, which is part of the downloaded Media Pack.

Follow these steps for installing the application and database patches on top of Oracle Utilities Application Framework 4.3.0.4:

1. Copy the file PSRM-V25010-FW-PREREQ-MultiPlatform.jar in the delivered package to a <TEMPDIR>. Unjar using below command:

   ```
   jar -xvf PSRM-V25010-FW-PREREQ-MultiPlatform.jar
   ```

2. Initialize the Framework environment that you want to install the Framework patch rollup into:

   UNIX:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   $SPLEBASE\bin\splenviron.cmd -e %SPLENVIRON%
   ```

3. Install application patches:

   a. Navigate to the <temp location>/ FW-V4.3.0.4-Rollup/Application folder

   b. Execute the group installation script:

   Unix /Linux:

   ```
   chmod a+x installSFgroup.sh
   chmod a+x FW*/*.sh
   ./installSFgroup.sh
   ```

   Windows:

   ```
   installSFgroup.cmd
   ```

4. Install database patches:

   a. Initialize any Framework environment

   UNIX:

   ```
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
   ```

   Windows:

   ```
   $SPLEBASE\bin\splenviron.cmd -e %SPLENVIRON%
   ```

   b. Navigate to the <temp location>/ FW-V4.3.0.4-Rollup/Database folder

   c. Execute the Database Patch Utility:

   Unix:

   ```
   chmod a+x  *.sh
./ouafDatabasePatch.sh  -p "-t O -d
SCHEMA_NAME,DBSERVER:DBPORT:DBSID"
   ```

   Windows:

   ```
ouafDatabasePatch.cmd -p "-t O -d
SCHEMA_NAME,DBSERVER:DBPORT:DBSID"
   ```

Copying and Decompressing Install Media

The Oracle Public Sector Revenue Management installation file is delivered in jar format for both UNIX and Windows platforms.

To copy and decompress the install media, follow these steps:

1. Log in to the application server host as the administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Download the [product-release]-Multiplatform zip file from Oracle Software Delivery Cloud.
3. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Public Sector Revenue Management application environment.
   This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
4. Copy the file, [product-release]-MultiPlatform.jar, in the delivered package to a <TEMPDIR> on your host server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

   ```
   cd <TEMPDIR>
   jar -xvf PSRM-v2.5.0.1.0-MultiPlatform.jar
   ```

   For Windows installations, include the location of the JDK in your path before you execute the jar command.

   A sub-directory is created for both Unix and Windows platforms. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

Preparing for the Installation

1. Log on as Oracle Public Sector Revenue Management Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

   UNIX:

   ```
   $SPLEBASE/bin/splenviron.sh  -e $SPLENVIRON
   ```

   Windows:

   ```
   $SPLEBASE\bin\splenviron.cmd -e %SPLENVIRON%
   ```

3. Stop the environment if running.

   UNIX:

   ```
   $SPLEBASE/bin/spl.sh stop
   ```

   Windows:

   ```
   %SPLEBASE%\bin\spl.cmd stop
   ```

Installing the Application

1. Change to the <TEMPDIR>/PSRM.V2.5.0.1.0 Directory.
2. Set the following path:

   ```
   export PATH=<JAVA_HOME>/bin:$PATH
   ```

   Note: The above command is only applicable on a Linux platform. <JAVA_HOME> is the location where the JDK has been installed.
3. Execute the script:

   UNIX:

   ```
   ksh ./install.sh
   ```

   Windows:

   ```
   install.cmd
   ```

   Note: On UNIX, ensure that you have the proper execute permission on install.sh
4. Follow the messages and instructions that are produced by the install utility. Please note that some of the steps may take some time to complete.
5. If the install utility execution was not stopped due to errors and you did not interrupt the execution, you have finished the installation of the Oracle Public Sector Revenue Management Application product.
6. Execute the following commands:

Unix:

```
splenviron.sh -e <ENV_NAME>
configureEnv.sh
```

Type **P** and <ENTER> (you don't need to change anything)

```
splenviron.sh -e <ENV_NAME>
initialSetup.sh
```

Windows:

```
splenviron.cmd -e <ENV_NAME>
configureEnv.cmd -e <ENV_NAME>
```

Type **P** and <ENTER> (you don't need to change anything)

```
splenviron.cmd -e <ENV_NAME>
initialSetup.cmd
```

Notes.

- In case you are using demo certificates, please execute the below command before starting the environment:

  ```
  cd $SPLEBASE/bin
  perl demo_gen_cert.plx
  ```

7. Start up the environment.

The final step of the installation process is the environment startup. The install utility executes the command spl.sh start (for UNIX) or spl.cmd start (for Windows) to start up the environment. You may start the environment by this command any time. Follow the messages on the screen and check the logs in $SPLSYSTEMLOGS

(%SPLSYSTEMLOGS% on Windows) directory to ensure that the environment was started successfully. If the startup failed, identify the problem by reviewing the logs, and start up the environment manually while you are connected to the new environment in your online session.

Integrating Customer Modifications into this Release

In order to integrate customer modifications from previous releases into this version of the Installation Guide, the customer modifications have to be re-applied to a new environment using the source code and database utilities provided with the software development kit. Please refer to the Oracle Public Sector Revenue Management Software Development Kit product documentation for instructions on this process.

Operating the Application

At this point your installation and custom integration process is complete.

Be sure to read the Oracle Public Sector Revenue Management *Server Administration Guide* for more information on further configuring and operating the Oracle Public Sector Revenue Management system.

Installing Service Packs and Patches

Periodically, Oracle releases a service pack of single fixes for its products. A service pack is an update to an existing release that includes solutions to known problems and other product enhancements. A service pack is not a replacement for an installation, but a pack consisting of a collection of changes and additions for it. The service pack may include changes to be applied to the application server, the database, or both. The service pack includes all files necessary for installing the collection of changes, including installation instructions.

Between services packs, Oracle releases patches to fix individual bugs. For information on installing patches, see knowledge base article ID 974985.1 on My Oracle Support.

Service packs and patches can be downloaded from My Oracle Support (https://support.oracle.com/).

Chapter 6

Upgrading Oracle Public Sector Revenue Management

This release supports the following upgrade paths:

- Oracle Public Sector Revenue Management version 2.5.0.0.0 to version 2.5.0.1.0.

This chapter includes:

Before You Upgrade

Review the list of operating system, application server and database server combinations that this version of Oracle Public Sector Revenue Management is certified to operate on, in the Chapter 2: Supported Platforms and Hardware Requirements.

For further assistance, contact My Oracle Support before you upgrade.

> **Note:** If you are upgrading a previously installed application server, it is recommended that you make a backup before you start the upgrade procedure. The upgrade installation will remove your existing environment including your configurations.

Upgrade Procedure

The upgrade installation procedure consists of:

Database Component Upgrade

Upgrade of the database component of Oracle Public Sector Revenue Management must be complete before you can proceed with the following sections. Refer to the section

"**Upgrade Install**" of the Oracle Public Sector Revenue Management *Database Administrator's Guide*, which provides instructions on upgrading the database component.

Application Components Upgrade

A successful upgrade consists of the following steps:

- Upgrading the Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4.0.0) Application Component
- Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup
- Upgrading the Oracle Public Sector Revenue Management Application Component to V2.5.0.1.0
- Upgrading the Oracle Public Sector Revenue Management Application Component to V2.5.0.1.0

Upgrading the Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4.0.0) Application Component

This section describes how to upgrade the application component of Oracle Utilities Application Framework, including:

- Copying and Decompressing Install Media
- Setting Permissions for the cistab file in UNIX
- Upgrading the Application Component

Copying and Decompressing Install Media

The Oracle Utilities Application Framework installation file is delivered in jar format for both UNIX and Windows platforms. If you are planning to install multiple Oracle Utilities Application Framework environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

To copy and decompress the install media, follow these steps:

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.4.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
```

> **Note:** You will need to have Java JDK installed on the machine used to (un)jar the application server installation package. Please install the JDK that is supported for the install on your platform to be able to use the jar command.
> Java packages are located at: http://www.oracle.com/technetwork/java/archive-139210.html

A sub-directory named "FW.V4.3.0.4.0-SP4" is created. It contains the installation software for the Oracle Utilities framework application server.

Setting Permissions for the cistab file in UNIX

Every Oracle Utilities Application Framework environment installed on a server must be registered in the /etc/cistab file located on that server. On UNIX servers, generally only the root user ID has write permissions to the /etc directory. Since the installation process is run by the Oracle administrator user ID (cissys), this user ID may not be able to write to /etc/cistab table.

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the ../App/FW.V4.3.0.4.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities Framework application environment on the server) and registers a new environment.

The generated script also changes the owner of /etc/cistab file to the Oracle Utilities Framework administrator user ID, so that the next time a new environment is created by the same Oracle Utilities Framework administrator user ID, you do not need to run the generated script with the root user ID. Instead the install utility itself proceeds with the registration.

If you are reinstalling an existing environment, only the validation of /etc/cistab entry is done by the install utility, no new registration occurs. The install utility interactively instructs you about every step that needs to occur in each specific case.

If you are planning to upgrade an existing environment it is your responsibility to take a backup prior to the upgrade process. The installation utility does not create a backup of existing environment.

Upgrading the Application Component

This section outlines the steps for installing the application component of Oracle Utilities Application Framework V4.3.0.4.0.

> **Note:** Customers who have a version prior to 2.1.0.3.0 must install 2.1.0.3.0 before upgrading to 2.2.0.1.0.

1. Login to the Application Server host as administrator (the default is cissys on UNIX) or as a user with Administrator privileges (on Windows).
2. Change directory to the bin folder.

   ```
   cd <install_dir>/bin
   ```

   where <install_dir> is the location where the Oracle Utilities Service and Measurement Data Foundation Base application component is installed.

3. Initialize the environment by running the appropriate command:

   UNIX

   ```
   ./splenviron.sh -e <ENV NAME>
   ```

   Windows

   ```
   splenviron.cmd -e <ENV NAME>
   ```

4. Stop the environment, if running:

   UNIX

   ```
   $SPLEBASE/bin/spl.sh stop
   ```

   Windows

   ```
   %SPLEBASE%\bin\spl.cmd stop
   ```

5. Change directory to ../App/FW.V4.3.0.4.0.

   NOTE: While installing the FW V4.3.0.4.0 from the previous environment to V2.2.0.1.0, the install utility removes the existing environment and re-creates the environment. Take a backup before you proceed with installing FW V4.3.0.4.0 to retain any configurations for future reference.

6. Start the application installation utility by executing the appropriate script:

   UNIX:

   ```
   ksh ./install.sh
   ```

   Windows:

   ```
   install.cmd
   ```

7. The Oracle Utilities Application Framework specific menu appears.
8. Follow the messages and instructions that are produced by the application installation utility.
9. Select each menu item to configure the values. For detailed description of the values, refer to Appendix A**:** Installation and Configuration Worksheets.
10. The following is the mandatory list of configurable items with descriptions for a few items. Where you see <Mandatory>, enter values suitable to your environment. You can assign default values to the rest of the menu items.

```
**********************************
* Environment Installation Options *
**********************************
 1. Third Party Software Configuration
       Oracle Client Home Directory: <Mandatory>
       Web Java Home Directory:      <Mandatory>
       Child JVM Home Directory:
       COBOL Home Directory:
       Hibernate JAR Directory: <Mandatory>
       ONS JAR Directory:
       Web Application Server Home Directory: <Mandatory>
       ADF Home Directory:
       OIM OAM Enabled Environment:
2. Keystore Options
```

```
      Store Type:                                          JCEKS
      Alias:                                               ouaf.system
      Alias Key Algorithm:                                 AES
      Alias Key Size:                                      128
      HMAC Alias:                                        ouaf.system.hmac
      Padding:                                             PKCS5Padding
      Mode:                                                CBC
50. Environment Installation Options
       Environment Mount Point: <Mandatory> - Install Location
       Log Files Mount Point:<Mandatory> - ThreadPoolWorker Logs
                                           Location
       Environment Name:<Mandatory>
       Web Application Server Type:                         WLS
       Install Application Viewer Module:                   true

Each item in the above list should be configured for a successful
install.
Choose option (1,2,50, <P> Process, <X> Exit):
```

11. Once you enter 'P' after entering mandatory input values in the above menu, the system populates another configuration menu.

```
************************************************************
* Environment Configuration *
************************************************************
 1. Environment Description
       Environment Description:    <Mandatory>

 2. Business Application Server Configuration
       Business Server Host:       <Mandatory> - Hostname on which
                                    application being installed
       WebLogic Server Name:       myserver
       Business Server Application Name: SPLService
       MPL Admin Port Number:     <Mandatory> - Multipurpose Listener
                                                Port
       MPL Automatic startup:      false

 3. Web Application Server Configuration
       Web Server Host:            <Mandatory>
       WebLogic SSL Number:     <Mandatory>
       WebLogic Console Port Number:  <Mandatory>
       WebLogic Additional Stop Arguments:
       Web Context Root:           ouaf
       WebLogic JNDI User ID:      <Mandatory>
       WebLogic JNDI Password:     <Mandatory>
       WebLogic Admin System User ID:    <Mandatory>
       WebLogic Admin System Password:   <Mandatory>
       WebLogic Server Name:             myserver
       Web Server Application Name:      SPLWeb
       Deploy Using Archive Files:                          true
       Deploy Application Viewer Module:                    true
       Enable The Unsecured Health Check Service:           false
       MDB RunAs User ID:
       Super User Ids:                                    SYSUSER

 4. Database Configuration
       Application Server Database User ID:   <Mandatory>
       Application Server Database Password:    <Mandatory>
       MPL Database User ID:                    <Mandatory>
       MPL Database Password:                   <Mandatory>
```

```
       XAI Database User ID:                    <Mandatory>
       XAI Database Password:                   <Mandatory>
       Batch Database User ID:                  <Mandatory>
       Batch Database Password:                  <Mandatory>
      Web JDBC DataSource Name: <Mandatory>
       JDBC Database User ID: <Mandatory>
       JDBC Database Password: <Mandatory>
       Database Name:                            <Mandatory>
       Database Server:                          <Mandatory>
       Database Port:                            <Mandatory>
       ONS Server Configuration: <Mandatory>
       Database Override Connection String: <Mandatory>
      Character Based Database: <Mandatory>
      Oracle Client Character Set NLS_LANG: AMERICAN_AMERICA.AL32UTF8

 5. General Configuration Options
       Batch RMI Port:                          <Mandatory> - RMI port
                                                            for batch
       RMI Port number for JMX Business:
       RMI Port number for JMX Web:
       JMX Enablement System User ID:
       JMX Enablement System Password:
       Coherence Cluster Name:                   <Mandatory> - Unique
                                                       name for batch
       Coherence Cluster Address:                <Mandatory> - Unique
                                                    Multicast address
       Coherence Cluster Port:                   <Mandatory> - Unique
                                                port for batch cluster
       Coherence Cluster Mode:                   <Mandatory> - prod

6. SSL Certificate Keystore
       Certificate Keystore Type:                          CUSTOM
       Identify Keystore File:
       Identify Keystore File Type:                        jks
       Identify Keystore Password:
       Identity Private Key Alias:
       Trust Keystore File:
       Trust Keystore File Type:                           jks
       Trust Keystore Password:
       Trust Private Key Alias:

7. OUAF TrustStore Options
       Import TrustStore Directory:
       Store Type:                                         JCEKS
       Alias:                                              ouaf.system
       Alias Key Algorithm:                                AES
       Alias Key Size:                                     128
      HMAC Alias:                                       ouaf.system.hmac
       Padding:                                            PKCS5Padding
       Mode:                                               CBC

Each item in the above list should be configured for a successful
install.

Choose option (1,2,3,4,5,6,7, <P> Process, <X> Exit):
```

12. When you are done with the parameter setup, proceed with the option P. The utility writes the configured parameters and their values into the configuration file.

Once the install has finished, the installation log location appears on the screen. If the log does not list any error messages, the installation of the application component of Oracle Utilities Application Framework is complete. You can now install Oracle Utilities Service and Measurement Data Foundation as described in the following section.

Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup

1. Navigate to ../App/FW43040_Rollup.
2. Refer to the Readme.txt inside 'Application-Server-Multiplatform' file for instructions on installing the Oracle Utilities Application Framework 4.3.0 Service Pack 4 Prerequisite Single Fixes.

These patches are also available for download separately from My Oracle Support.

Upgrading the Oracle Public Sector Revenue Management Application Component to V2.5.0.1.0

This section describes how to install the application component of Oracle Public Sector Revenue Management, including:

- Copying and Decompressing Install Media
- Upgrading the Application Component

Copying and Decompressing Install Media

The Oracle Public Sector Revenue Management installation file is delivered in jar format for both UNIX and Windows platforms.

To copy and decompress the install media, follow these steps:

1. Log in to the application server host as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Navigate to ../App/PSRM.Vv2.5.0.1.0 directory.

Upgrading the Application Component

Follow the steps below to install Oracle Public Sector Revenue Management application component:

1. Log in to the application server host as Oracle Public Sector Revenue Management Administrator (default cissys).
2. Change directory:

   ```
   cd <install_dir>/bin
   ```

   where <install_dir> is the location where the Oracle Utilities Service and Measurement Data Foundation application component is installed.
3. Initialize the environment by running the appropriate command:

   UNIX

   ```
   ./splenviron.sh -e <ENV NAME>
   ```

   Windows

   ```
   splenviron.cmd -e <ENV NAME>
   ```

4. If the environment is running, stop it by running the appropriate command:

   UNIX

   ./spl.sh stop

   Windows

   ```
   spl.cmd stop
   ```

5. Execute the install script:

   Note: On UNIX, ensure that you have the proper execute permission on install.sh.

   UNIX

   ```
   ksh ./install.sh
   ```

   Windows

   ```
   install.cmd
   ```

   Choose option P to proceed with the installation.

   Installation of Oracle Utilities Oracle Public Sector Revenue Management Server is complete if no errors occurred during the installation.

6. Start up the environment. Run the following command:

   UNIX

   ```
   spl.sh start
   ```

   Windows

   ```
   spl.cmd start
   ```

Follow the message on the screen and review the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

If the startup failed, identify the problem by reviewing the logs. Resolve any issues before attempting to restart the environment.

> **Note**: The first time you start Oracle Public Sector Revenue Management, you need to log into the Weblogic console and give system access to cisusers role. The Weblogic console application can be accessed through the following URL: http://<hostname>:<portname>/consoleAfter the Upgrade

After you complete the upgrade installation, verify the following:

1. Verify installation logs created under decompressed installer location for any errors.
2. Confirm installation logs do not contain any errors.
3. Confirm all the configurations are correct. Refer to Appendix A**:** Installation and Configuration Worksheets for details.
4. Confirm that the database is ready.
5. Start the application server. For instructions, refer to Appendix D: Common Maintenance Activities.
6. To operate the application, refer to the following section.

Post-Upgrade Steps

1. Log in to the application server host server as the administrator User ID (default cissys).
2. Change directory:

   ```
   cd <install_dir>/bin
   ```

   where <install_dir> is the location where the Oracle Utilities Application Framework application component is installed.
3. Initialize the environment by running the appropriate command:

   UNIX:

   ```
   ./splenviron.sh -e <ENV NAME>
   ```

   Windows:

   ```
   splenviron.cmd -e <ENV NAME>
   ```
4. Navigate to $SPLEBASE/bin.
5. Perform the post-installation steps as described below:

   UNIX:

   ```
   ksh ./configureEnv.sh
   ```

   Windows:

   ```
   configureEnv.cmd
   ```

   Note: On UNIX, ensure that you have the proper execute permission on configureEnv.sh.
6. Generate the appviewer by following the steps in **Generating the Application Viewer** on page 7-2.
7. Verify and review the log files to ensure that there are no errors during the upgrade process.

Generating Demo Certificates

In case you are using demo certificates, please execute the below command before starting the environment:

```
cd $SPLEBASE/bin
perl demo_gen_cert.plx
```

Forcing the Environment to Use the Current Keystore

This process does the following:

- Prompts for and encyrpts new application-stored passwords.
- Synchronizes the keystore to the database (if Oracle Utilities Application Framework version 4.2.0.3.0 or later).
- Regenerates the user hashes.

- Invalidates any database-stored passwords.

Use this option when, for example, a keystore has been lost, preventing the system from decrypting the passwords stored in the configuration files or database. In such a case, all passwords will need to be reentered.

For Oracle Utilities Application Framework version 4.2.0.3.0 and higher, perform the following steps:

- Using configureEnv.sh|cmd, re-enter the menu passwords to encrypt the data.
- Run initialSetup.sh|cmd to update property files with the encrypted data.
- Run the following command:

```
   Perl   $SPLEBASE/bin/run_java_standalone.plx
com.splwg.shared.common.ResetCryptographyKey
```

Operating the Application

At this point your installation and custom integration process is complete. Be sure to read the Oracle Public Sector Revenue Management *Server Administration Guide* for more information on further configuring and operating the system.

Chapter 7

Additional Tasks

This section describes tasks that should be completed after installing Oracle Public Sector Revenue Management, including:

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Integrating Existing Customer Modifications
- Generating the Application Viewer
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Configuring Secure Sockets Layer (SSL)
- Setting Up an Application Keystore
- Deploying Inbound WebServices (IWS)
- Domain Templates (Linux WebLogic 12.1.3.0+, WebLogic 12.2.1.1+ only)
- Database Patching

Importing Self-Signed Certificates

If you are using self-signed certificates and the Inbound Web Services (IWS) feature, then it is necessary to import these certificates into the OUAF truststore file.

Perform the following commands:

1. Start WebLogic.
2. Initialize a command shell and setup the environment by running the following:

UNIX

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
 For example:
/ouaf/TEST_ENVIRON1/bin/splenviron.sh -e TEST_ENVIRON1
```

Windows

```
%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
```

```
 For example:
D:\ouaf\TEST_ENVIRON1\bin\splenviron.cmd -e TEST_ENVIRON1
```

3. Execute the following script to generate all information:

   UNIX

   ```
   $SPLEBASE/bin/initialSetup.sh -i
   ```

   Windows

   ```
   %SPLEBASE%\bin\ initialSetup.cmd –i
   ```

   Note: This needs to be performed before deploying the IWS application.

Customizing Configuration Files

If you wish to make customer modifications to various configuration files, create a 'CM copy' of the template file or a user exit. This preserves your changes whenever initialSetup is executed; otherwise, your changes to the delivered template files will be lost if it is patched in the future:

For example, to customize hibernate properties of the SPLWeb web application, perform the following:

1. Locate the hibernate.properties.template in the $SPLEBASE/templates directory
2. Copy the file to cm.hibernate.properties.template.
3. Apply your changes to cm.hibernate.properties.template.
4. Update application war file with the latest changes by executing the following command:

   UNIX

   ```
   $SPLEBASE/bin/initialSetup.sh
   ```

   Windows

   ```
   %SPLEBASE%\bin\initialSetup.cmd
   ```

Refer to the Oracle Utilities Application Framework SDK documentation for more details.

Integrating Existing Customer Modifications

Existing Customer Modifications (CM) applied to an application server on an earlier release cannot be applied directly to a later version. CM code needs to be applied from an SDK version compatible with this release.

Refer to SDK documentation for more information about migrating CM code.

Generating the Application Viewer

You may extend application viewer capabilities within an environment by generating additional items. These include information about algorithm types, algorithms,

maintenance objects and data dictionary information. The Javadoc indexes are also re-built.

To generate the additional items in the application viewer, perform the following:

1. Shut down the environment.
2. Initialize a command shell and setup the environment by running the following:

   UNIX
   $SPLEBASE/bin/splenviron.sh -e $SPLENVIRON

   For example:

   ```
   /ouaf/TEST_ENVIRON1/bin/splenviron.sh -e TEST_ENVIRON1
   ```

   Windows
   %SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%

   For example:

   ```
   D:\ouaf\TEST_ENVIRON1\bin\splenviron.cmd -e TEST_ENVIRON1
   ```

3. Execute the following script to generate all information.

   UNIX
   ```
   ksh $SPLEBASE/bin/genappvieweritems.sh
   ```

   Windows:

   ```
   %SPLEBASE%\bin\genappvieweritems.cmd
   ```

4. Restart your application.

Building Javadocs Indexes

Rebuilding Javadoc indexes is already part of generating application viewer above. However, there are times when you need to run it separately. For example, this is required after customer modifications (CM) have been applied to an environment when it includes Java code.

Perform the following to rebuild the Javadoc indexes.

Windows
```
%SPLEBASE%\bin\buildJavadocsIndex.cmd
```

UNIX
```
ksh $SPLEBASE/bin/buildJavadocsIndex.sh
```

Configuring the Environment for Batch Processing

See the *Server Administration Guide* for information on configuring the environment for batch processing.

Customizing the Logo

To replace the Oracle Utilities logo on the main menu with another image, put the new image <customer_logo_file>.png file into the directory $SPLEBASE/etc/conf/root/cm and create a new "External" Navigation Key called CM_logoImage. To do that, run the Oracle Utilities application from the browser with the parameters: http://<hostname>:<port>/cis.jsp?utilities=true&tools=true.

From the Admin menu, select Navigation Key.

Add the above Navigation Key with its corresponding URL Override path.

The syntax for the URL path is:

Windows:

http://<host name>:<port>/<Web Context>/cm/<customer_logo_file>.png

UNIX:

http://<host name>:<port>/<Web Context>/cm/<customer_logo_file>.png

The root directory may be deployed in war file format for runtime environment (SPLApp.war). Use provided utilities to incorporate your cm directory into SPLApp.war file.

Configuring Secure Sockets Layer (SSL)

Secure Sockets Layer (SSL) provides secure connections by allowing two applications connecting over a network to authenticate each other's identity and by encrypting the data exchanged between the applications. Authentication allows a server, and optionally a client, to verify the identity of the application on the other end of a network connection. Encryption makes data transmitted over the network intelligible only to the intended recipient

Follow these steps to configure Secure Sockets Layer:

1. Obtain an identity (private key and digital certificates) and trust (certificates of trusted certificate authorities) for WebLogic Server.

   Use the digital certificates, private keys, and trusted CA certificates provided by the WebLogic Server, the CertGen utility, the keytool utility, or a reputable vendor such as Entrust or Verisign to perform this step.

2. Store the identity and trust.

   Private keys and trusted CA certificates which specify identity and trust are stored in keystores.

3. Configure the identity and trust keystores for WebLogic Server in the WebLogic Server Administration Console.

   See "Configure keystores" in the Oracle WebLogic Server Administration Console Online Help.

   For additional information on configuring keystores, refer to http://docs.oracle.com/middleware/1213/wls/WLACH/taskhelp/security/ConfigureKeystoresAndSSL.html

4. Set SSL configuration options for the private key alias and password in the WebLogic Server Administration Console.

Optionally, set configuration options that require the presentation of client certificates (for two-way SSL).

For additional information, refer to the following topics:

- Servers: Configuration: SSL (*http://docs.oracle.com/middleware/1213/wls/WLACH/pagehelp/Corecoreserverserverconfigssltitle.html*)
- Configure two-way SSL (*http://docs.oracle.com/middleware/1213/wls/WLACH/taskhelp/security/ConfigureTwowaySSL.html*)
- Obtaining and Storing Certificates for Production Environments (*http://docs.oracle.com/middleware/1213/wls/SECMG/identity_trust.htm#SECMG798*)
- Configuring Keystores with WebLogic Server (*http://docs.oracle.com/middleware/1213/wls/SECMG/identity_trust.htm#SECMG383*)

Note: Depending on your choice of implementation you may need to change some configuration files. These files are managed by templates and will be overwritten if the procedures documented in "Customizing Configuration Files" are not followed.

The identity and trust keystore files and other SSL certificate related options are configured using the configureEnv.sh|cmd utility.

Setting Up an Application Keystore

This section describes how to set up a keystore in your system. The keystore is used for functionality such as digital signatures for document numbers, and encryption for credit card security.

Note that this different from the Oracle Utilities Application Framework (also called the system) keystore and the WebLogic SSL keystores.

For additional information about document numbers, digital signatures, and encryption, see the online help.

For additional information about using the Java keytool utility, see the following section of the Oracle Java SE documentation:

http://docs.oracle.com/javase/7/docs/technotes/tools/solaris/keytool.html

Follow this procedure to set up the keystore in your environment:

1. Generate the keystore. The following command creates the file ".mykeystore" in directory ${SPLEBASE}:

```
keytool -genkeypair -alias <keyalias> -keyalg RSA -sigalg
SHA256withRSA -keystore ${SPLEBASE}/<filename> -keysize 1024
-storetype JCEKS -dname "CN=<name>, OU=<unit>, O=<organization>,
C=<country>" -validity 365
```

For example:

```
keytool -genkeypair -alias ouaf.application -keyalg RSA -sigalg
SHA256withRSA -keystore ${SPLEBASE}/.mykeystore -keysize 1024
-storetype JCEKS -dname "CN=Mark Jones, OU=TUGBU, O=Oracle, C=US"
-validity 365
```

The utility will prompt you for the keystore and key passwords. Make sure that they are the same.

2. Configure the following template files by adding the following entries:

   For WebLogic Server:

   - To enable in WebLogic, edit the following in ${SPLEBASE}/templates/startWeblogic.sh.template:

```
JAVA_OPTIONS="$JAVA_OPTIONS
-Dcom.oracle.ouaf.keystore.file=$SPLEBASE/<filename>"

JAVA_OPTIONS="$JAVA_OPTIONS
-Dcom.oracle.ouaf.keystore.password=<keystore_password>"
```

   For <keystore_password>, use the same password entered in the keytool utility.

   - To enable this in batch, edit the threadpoolworker.properties.template:

```
com.oracle.ouaf.keystore.file=@force_forward_slash(SPLEBASE)@/
.mykeystore
com.oracle.ouaf.keystore.password=<keystore_password>
```

   Note: Because the path needs to be passed with forward slashes even on Windows platforms, the force_forward_slash function will convert any "\" to "/".

   For <keystore_password>, use the same password entered in the keytool utility.

   List of spl.properties templates (located in ${SPLEBASE}/templates/ folder):

   - spl.properties.iws.template
   - spl.properties.template
   - spl.properties.service.template
   - spl.properties.XAIApp.template
   - spl.properties.standalone.template

3. Re-initialize the environment to propagate these changes by executing the initialSetup.sh/cmd.
4. Restart the environment.

Deploying Inbound WebServices (IWS)

All existing XAI Inbound Services have been duplicated as Inbound Web Services as the application moves toward deprecation of XAI and full transition to IWS in the next release. The duplicated services are designed to work seamlessly in this release, and customers providing custom services are encouraged to migrate to IWS to take full advantage of the new, more efficient Web service technology.

For more information on migrating from XAI to IWS, please refer to Migrating from XAI to IWS Oracle Utilities Application Framework (Doc ID 1644914.1) on My Oracle Support.

Note: This is an optional step for customers using IWS instead of XAI services.

For deploying IWS, please follow the steps below:

UNIX

1. Enable the Web Services Functionality as shown below:
   a. cd $SPLEBASE/bin
   b. Execute configureEnv.sh –a

   Select option 50 and set the option "Enable Web Services Functionality" to true. Enter "P" to process.
2. Execute initialSetup.sh as shown below:

```
cd $SPLEBASE/bin
ksh ./initialSetup.sh
```

3. Set the classpath as shown below:

```
$ CLASSPATH=$WL_HOME/server/lib/weblogic.jar:$CLASSPATH
$ export CLASSPATH
$ cd $SPLEBASE/bin
```

4. Execute the following command:

```
$ java weblogic.Admin -username <username> -password <password>
STOREUSERCONFIG -userconfigfile $SPLEBASE/etc/.wlsuserconfig -
userkeyfile $SPLEBASE/etc/.wlsuserkey
```

   Select y

5. Execute the below step in $SPLEBASE/bin. Please note that the application server should be up before running the below command.

```
ksh ./iwsdeploy.sh
```

WINDOWS:

1. Enable the Web Services Functionality as shown below:

```
cd %SPLEBASE%\bin
```

2. Execute configureEnv.cmd –a

   Select option 50 and set the option "Enable Web Services Functionality" to true. Enter "P" to process.

3. Execute initialSetup.cmd as shown below:

```
cd %SPLEBASE%\bin initialSetup.cmd
```

4. Set the classpath as shown below:

```
set CLASSPATH=%WL_HOME%\server\lib\weblogic.jar;%CLASSPATH%
```

5. Execute the following command:

```
java weblogic.Admin -username system -password ouafadmin
STOREUSERCONFIG -userconfigfile %SPLEBASE%\etc\.wlsuserconfig -
userkeyfile %SPLEBASE%\etc\.wlsuserkey
```

   Select y

6. Execute the below step in %SPLEBASE%\bin. Please note that the application server should be up before running the below command.

```
iwsdeploy.cmd
```

Domain Templates (Linux WebLogic 12.1.3.0+, WebLogic 12.2.1.1+ only)

The intended use of the domain templates is for native/clustered installation of the Oracle Utilities Application Framework (OUAF) environment into a WebLogic domain. The domain template(s) defines the core set of resources within a WebLogic domain, including an Administration Server along with the basic configuration information for a Oracle Utilities Application Framework based application. The domain template is a "snapshot" of the delivered embedded "splapp" domain. When working with domain templates you will need to manage the application (stopping, starting, deployment, undeployment) utilizing the WebLogic delivered utilities.

- Install and configure application stack (OUAF and Edge Product)

  Note: Environment will need to be configuring to deploy in ear format.
- Review domain templates (Simple /Complex)
- Execute config.sh and enter the path of the domain template file
- Configure domain
- Complete domain configuration

  Note: Configure nodemanager.properties and setDomainEnv.sh
- Update SPLEBASE (ENVIRON.INI)

Detailed Description

The product installation includes a two predefined WebLogic Server Domain templates. The delivered domain templates are located under the SPLEBASE:

$SPLEBASE/tools/domaintemplates

- Oracle-Utilities-Simple-Linux-12.1.3.0.0.jar
- Oracle-Utilities-Complex-Linux-12.1.3.0.0.jar
- Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar

The Simple Domain Template is for use with one machine and does not include a WebLogic cluster, this domain configuration is similar to current delivered embedded splapp domain, with the exception that there will be two WebLogic servers (utilities_server1 and a "Admin Server").

The Complex Domain Template is configured for use with a pre-configured WebLogic cluster, with one machine configured, node manager settings, and one managed server configured.

The delivered domain templates defines the full set of resources within an Oracle Utilities Application Framework domain including:

- Demo certificates (the demo certificates will need to be updated for production use)
- Setting of XML Registry Settings
- Setting of Default users and groups
- Machine configuration
- Default Users and Groups

Note: The Users and Groups match the delivered values delivered with the embedded domain.

- JTA Settings
- Node Manager Settings
- WebLogic Server

Configure Node Manager Properties to allow SSL

Follow the steps below to update the nodemanager.properties with the correct Private Key Passphrase.

Under the following location: DOMAIN_HOME/nodemanager update the following properties in the nodemanager.properties file:

- CustomIdentityKeyStorePassPhrase=
- CustomIdentityPrivateKeyPassPhrase=

Set these to the value "0uaf_demo_c3rt"

Note: At first when the node manager is started, the values in the file will be encrypted. These values will need to updated in production configuration with the proper values based on your configuration.

Configure setDomainEnv.sh Script

You will need to set the value of SPLEBASE with the proper value for your implementation. Under the following location, DOMAIN_HOME/bin, update the setDomainEnv.sh file and add the following

```
SPLEBASE="${SPLEBASE}"
```

Note: You will need to update ${SPLEBASE} with appropriate value based on your configuration.

Update SPLEBASE

The following update in the configuration indicates if the embedded configuration is being utilized or if the environment is a native installation to Weblogic. When this item is populated in the environment, the delivered base tools will be able to identify that the starting and stopping of the environment are being done under the domain home.

1. Initialize the Environment: splenviron.sh –e <Environment_Name>
2. Execute: configureEnv.sh –a
3. Select Menu Item: 52. Advanced Web Application Configuration

==========

4. 02. Configuration Option: Domain Home Location

   Current Value <ENTER>:

   The WebLogic Domain Home location, when this parameter is populated you will need to use the native WebLogic tools for maintenance (starting, stopping, deployment, and undeployment).

   Enter Value: <Enter your domain home location>

5. Once the Domain Home location has been completed, Enter <P> Process

Update setDomainEnv.sh

Edit setDomainEnv.sh and change antlr, serializer and xalan jar versions to the following:

- antlr-2.7.7.jar
- serializer-2.7.2.jar
- xalan-2.7.2.jar

Update setUserOverrides.sh

Edit setUserOverrides.sh and add the below to JAVA_OPTIONS. For AIX, the below parameters also need to be added to JAVA_OPTIONS.

```
-
Djavax.xml.transform.TransformerFactory=org.apache.xalan.processor
.TransformerFactoryImpl -
Djavax.xml.validation.SchemaFactory:http://www.w3.org/2001/
XMLSchema=org.apache.xerces.jaxp.validation.XMLSchemaFactory
```

Database Patching

The database patching utility is delivered under SPLEBASE and is Java-based so you are able to create a standalone package to be able to install database patches on a separate server that has Java 7 installed. You can also install database patches using the components that are delivered under SPLEBASE without the need to move the database patching utility to a different server.

The following is an overview of the process to install database patches on a separate server. You will need to create a jar file containing the utilities and supporting files to allow you to run the database patch installer on another server.

To generate the jar file:

1. Initialize a command shell:

The scripts that are provided with the system need to be run from a shell prompt on the machine where you installed the application server. Before such scripts can be run the shell must be "initialized" by running the splenviron script provided with the system.

UNIX

Log on to your UNIX box as the Oracle Utilities Administrator (default cissys) and open a shell prompt.

In the following example, replace the variables

- $SPLEBASE with the Full directory name that you installed the application into
- $SPLENVIRON with the name you gave to the environment at installation time

To initialize the environment enter:

```
$SPLEBASE/bin/splenviron.sh -e $SPLENVIRON
```

For example:

/ouaf/DEMO/bin/splenviron.sh -e DEMO

Windows
The command window should be opened on the Windows server that you installed the application on.

In the below example you should replace the following variables:

- %SPLEBASE%: The Full directory name that you installed the application into
- %SPLENVIRON%: The name you gave to the environment at installation time

To initialize the environment, type the following in your command prompt:

```
%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
```

For example:

```
D:\ouaf\DEMO\bin\splenviron.cmd -e DEMO
```

2. Execute the following script to generate the jar file.

   UNIX

   ```
   ksh $SPLEBASE/bin/createDBStandlone.sh
   ```

   Windows

   ```
   %SPLEBASE%\bin\createDBStandlone.cmd
   ```

   Note: By default, the output jar db_patch_standalone.jar is created in SPLEBASE/tools/dbstandalone. You can use the –l option to change the default directory.

3. Transfer the generated jar (db_patch_standalone.jar) to the Windows/Unix machine where you want to run the database patching utility.
4. Extract the contents of the archive file:

   ```
   jar xvf db_patch_standalone.jar
   ```

   Note: You must have Java 7 JDK installed on the machine to use the jar command. Be sure to install the JDK that is supported for your platform.

Overview of Database Patching Application

The database patching utility requires you have Java 7 JDK installed on the machine to execute the database patch application process.

The patch application process will perform following items to account for executing patch application under SPLEBASE or on a standalone server.

The database patch application utility will look do the following when it is executed:

- Checks to see if the environment variable $SPLEBASE is set.

If the $SPLEBASE variable is set, the utility uses the libraries under $SPLEBASE to apply the patch.

- When the $SPLEBASE is not set, the utility checks to see if the TOOLSBIN environment variable is set.

If the TOOLSBIN is set, the utility uses the libraries under the TOOLSBIN location.

- When both SPLEBASE and TOOLSBIN environment are not set, the utility prompts for the location of the TOOLSBIN.

The TOOLSBIN is the location of the of the application scripts ouafDatabasePatch.sh[cmd]

Unix Example:
The TOOLSBIN location would be set to /ouaf/dbpatch/bin

```
export TOOLSBIN=/ouaf/dbpatch/bin
```

Unix Sample - Database Patch Application (ouafDatabasePatch.sh)

Note: The default permissions (ouafDatabasePatch.sh), may need to be adjusted to be executed by your user and group, when applying database fixes.

- Sample Execution – Passing a Password

```
./ouafDatabasePatch.sh -x ouafadm -p "-t O -d
CISADM_Z1_12C_43020_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution – Prompting for a Password

```
./ouafDatabasePatch.sh  -p "-t O -d
CISADM_Z1_12C_43020_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution - passing in the tools bin location

```
/ouafDatabasePatch.sh -u
    ouafDatabasePatch.sh [-h] [-u] [-v] [-x] [-t tools dir] [-p
ouafparms]
          -h   displays help of ouafpatch
          -u   displays usage of ouafDatabasePatch.sh
          -v   displays version of ouafpatch
          -x   password to be passed to ouafpatch
          -b   location of the tools bin directory
          -p   parameters directly passed to ouafpatch
               must be the last parameter passed and
               be enclosed with quotes
```

WINDOWS Example:
The TOOLSBIN location would be set to c:\ouaf\dbpatch\bin

```
SET TOOLSBIN=c:\ouaf\dbpatch\bin
```

Windows Sample - Database Patch Application (ouafDatabasePatch.cmd)

- Sample Execution – Passing a Password

ouafDatabasePatch.cmd -x password -p "-t O -d SCHEMA_NAME,DBSERVER:DBPORT:DBSID"

- Sample Execution – Prompting for a Password

ouafDatabasePatch.cmd –p "-t O -d SCHEMA_NAME,DBSERVER:DBPORT:DBSID C"

- Sample Execution - passing in the tools bin location

ouafDatabasePatch.cmd -b "C:\temp\db_patch_standalone\bin" -p "-t O -d SCHEMA_NAME,DBSERVER:DBPORT:DBSID -c C:\temp\dbrollup\CDXPatch2\CDXPatch.ini"

Windows Sample Usage

```
ouafDatabasePatch.cmd -u
USAGE:
USAGE:ouafDatabasePatch.cmd[-h] [-u] [-v] [-x] [-b tools dir] [-p ouafparms]
USAGE:          -h   displays help of ouafpatch
USAGE:          -u   displays usage of ouafDatabasePatch.cmd
USAGE:          -v   displays version of ouafpatch
USAGE:          -x   password to be passed to ouafpatch
USAGE:          -b   location of the tools bin directory
USAGE:          -p   parameters directly passed to ouafpatch
USAGE:               must be enclosed with quotes: "  "
USAGE:
USAGE:
USAGE:
```

Appendix A

Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework. No Customer Install Value fields should be left blank.

> **Note:** Some web application server information will not be available until the software installation steps have been completed as described in the Installing Prerequisite Software section in the Chapter 3: Planning the Installation for prerequisite third-party software installation instructions.

Refer to the *Oracle Public Sector Revenue Management Server Administration Guide* for additional details (default, valid values, usage, etc.), as applicable.

Menu Block 1: Environment ID, Roles, Third Party Software Configuration

The Environment ID, Roles, Third Party Software Configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Environment ID	ENVIRONMENT_ID	
Server Roles	SERVER_ROLES	
Oracle Client Home Directory	ORACLE_CLIENT_HOME	
Web Java Home Directory	JAVA_HOME	
Hibernate JAR Directory	HIBERNATE_JAR_DIR	
**ONS JAR Directory	ONS_JAR_DIR	
Web Application Server Home Directory	WEB_SERVER_HOME	
WebLogic Server Thin-Client JAR Directory	WLTHINT3CLIENT_JAR_DIR	

Menu Option	Name Used in Documentation	Customer Install Value
* ADF Home Directory	ADF_HOME	
OIM OAM Enabled Environment	OPEN_SPML_ENABLED_ENV	

* Denotes optional menu items that may be required for the product installation and variables.

** In order to activate the RAC FCF, the application needs the external ons.jar file, from the ORACLE_HOME path:

```
$ORACLE_HOME/opmn/lib/ons.jar
```

During the installation the relevant option should be populated with the folder location of the ons.jar.

Menu Block 2: Keystore Options

The keystore is a set of files used for encryption, decryption and hash generation. The files reside in the following location:

<SPLEBASE>/ks/.ouaf_keystore

<SPLEBASE>/ks/.ouaf_storepass

In order to run the application correctly, data encryption, decryption and hash generation of data in the database and on the application server must be performed using the same keystore; otherwise, the application will fail.

Please review the section on configuring the OUAF Keystore in the *Oracle Public Sector Revenue Management Security Guide* for information on setting up the keystore properly.

Keystore options include:

Menu Option	Name Used in Documentation	Customer Install Value
Import Keystore Directory	KS_IMPORT_KEYSTORE_FOLDER	
Store Type	KS_STORETYPE	
Alias	KS_ALIAS	
Alias Key Algorithm	KS_ALIAS_KEYALG	
Alias Key Size	KS_ALIAS_KEYSIZE	
HMAC Alias	KS_HMAC_ALIAS	
Padding	KS_PADDING	
Mode	KS_MODE	

Menu Block 50: Environment Installation Options

Environment installation options include:

Menu Option	Name Used in Documentation	Customer Install Value
Environment Mount Point	SPLDIR	
Log File Mount Point	SPLDIROUT	
Environment Name	SPLENVIRON	
Web Application Server Type	SPLWAS	
Installation Application Viewer Module	WEB_ ISAPPVIEWER	
Install Demo Generation Cert Script	CERT_INSTALL_ SCRIPT	
Install Sample CM Source Code	CM_INSTALL_ SAMPLE	

Menu Block 1: Environment Description

The environment description menu option includes:

Menu Option	Name Used in Documentation	Customer Install Value
Environment Description	DESC	

Menu Block 2: [WebLogic] Business Application Server Configuration

WebLogic Business Application Server configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Business Server Host	BSN_WLHOST	
WebLogic Server Name	BSN_WLS_ SVRNAME	
Business Server Application Name	BSN_APP	
MPL Admin Port number	MPLADMINPORT	
MPL Automatic Startup	MPLSTART	

Menu Block 3: [WebLogic] Web Application Server Configuration

WebLogic Web Application Server configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Server Host	WEB_WLHOST	
Weblogic SSL Port Number	WEB_WLSSLPORT	
Weblogic Console Port Number	WLS_ADMIN_PORT	
Weblogic Additional Stop Arguments	ADDITIONAL_STOP_WEBLOGIC	
Web Context Root	WEB_CONTEXT_ ROOT	
WebLogic JNDI User ID	WEB_WLSYSUSER	
WebLogic JNDI Password	WEB_WLSYSPASS	
WebLogic Admin System User ID	WLS_WEB_ WLSYSUSER	
WebLogic Admin System Password	WLS_WEB_ WLSYSPASS	
WebLogic Server Name	WEB_WLS_ SVRNAME	
Web Server Application Name	WEB_APP	
Deploy Using Archive Files	WEB_DEPLOY_EAR	
Deploy Application Viewer Module	WEB_DEPLOY_ APPVIEWER	
Enable The Unsecured Health Check Service	WEB_ENABLE_ HEALTHCHECK	
MDB RunAs User ID	WEB_IWS_MDB_ RUNAS_USER	
Super User Ids	WEB_IWS_SUPER_ USERS	

Menu Block 4 - Database Configuration

The parameters below and in the worksheet are for the database configuration. Note that if changes are made to any of the database menu option items below, thus potentially connecting to a different schema, a warning will be displayed in the screen next to the actual option that has been changed.

Menu Option	Name Used in Documentation	Customer Install Value
Application Server Database User ID	DBUSER	
Application Server Database Password	DBPASS	
MPL Database User ID	MPL_DBUSER	
MPL Database Password	MPL_DBPASS	
XAI Database User ID	XAI_DBUSER	
XAI Database Password	XAI_DBPASS	
Batch Database User ID	BATCH_DBUSER	
Batch Database Password	BATCH_DBPASS	
Web JDBC DataSource Name	JDBC_NAME	
JDBC Database User ID	DBUSER_WLS	
JDBC Database Password	DBPASS_WLS	
Database Name	DBNAME	
Database Server	DBSERVER	
Database Port	DBPORT	
ONS Server Configuration	ONSCONFIG	
Database Override Connection String	DB_OVERRIDE_ CONNECTION	
Character Based Database	CHAR_BASED_DB	
Oracle Client Character Set NLS_LANG	NLS_LANG	

Menu Block 5 - General Configuration Options

The general configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Batch RMI Port	BATCH_RMI_PORT	
RMI Port number for JMX Business	BSN_JMX_RMI_PORT_ PERFORMANCE	

Menu Option	Name Used in Documentation	Customer Install Value
RMI Port number for JMX Web	WEB_JMX_RMI_PORT_PERFORMANCE	
JMX Enablement System User ID	BSN_JMX_SYSUSER	
JMX Enablement System Password	BSN_JMX_SYSPASS	
Coherence Cluster Name	COHERENCE_ CLUSTER_NAME	
Coherence Cluster Address	COHERENCE_ CLUSTER_ADDRESS	
Coherence Cluster Port	COHERENCE_ CLUSTER_PORT	
Coherence Cluster Mode	COHERENCE_ CLUSTER_MODE	

Menu Block 6 - SSL Certificate Keystore (WebLogic Only)

By default, SSL (Secure Sockets Layer) certificates are required for authentication. The product provides demo certificates generated with 1024 byte keys. For production environments, please use your own custom certificates.

Menu Option	Name Used in Documentation	Customer Install Value
Certificate Keystore Type	CERT_KS	
Identify Keystore Type	CERT_IDENT_KS_FILE	
Identify Keystore File Type	CERT_IDENT_KS_TYPE	
Identify Keystore Password	CERT_IDENT_KS_PWD	
Identity Private Key Alias	CERT_IDENT_KS_ALIAS	
Trust Keystore File	CERT_TRUST_KS_FILE	
Trust Keystore File Type	CERT_TRUST_KS_TYPE	
Trust Keystore Password	CERT_TRUST_KS_PWD	
Trust Private Key Alias	CERT_TRUST_KS_ALIAS	

Menu Block 7 - OUAF TrustStore Options

The OUAF truststore configuration is required for IWS.

Menu Option	Name Used in Documentation	Customer Install Value
Import TrustStore Directory	TS_IMPORT_KEYSTORE_FOLDER	
Store Type	TS_STORETYPE	
Alias	TS_ALIAS	
Alias Key Algorithm	TS_ALIAS_KEYALG	
Alias Key Size	TS_ALIAS_KEYSIZE	
HMAC Alias	TS_HMAC_ALIAS	
Padding	TS_PADDING	
Mode	TS_MODE	

Advanced Menu Options

The advanced menu options are not available during installation. These options can be accessed after installation using the following commands:

Unix:

```
$SPLEBASE/bin/configureEnv.sh -a
```

Windows

```
%SPLEBASE%\bin\configureEnv.cmd -a
```

Menu Block 50 - WebLogic Advanced Environment Miscellaneous Configuration

WebLogic advanced environment miscellaneous configurations include:

Menu Option	Name Used in Documentation	Customer Value Install
OUAF DBMS Scheduler User	OUAF_DBMS_SCHEDULER_USER	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Number of Threads	BATCHTHREADS	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	

Menu Option	Name Used in Documentation	Customer Value Install
Enable Batch Edit Funtionality	BATCHEDIT_ ENABLED	
Batch Online Log Directory	BATCH_ONLINE_LOG_DIR	
Enable Web Services Functionality	WEBSERVICES_ ENABLED	
IWS deployment target	WLS_CLUSTER_NAME	
Web Admin Server Host	WEB_ADMIN_SERVER	
GIS Service Running on the same Web Server	GIS	
GIS Service URL	GIS_URL	
GIS WebLogic System User ID	GIS_WLSYSUSER	
GIS WebLogic System Password	GIS_WLSYSPASS	
Online Display Software Home	ONLINE_DISPLAY_HOME	
Max Queries To Hold In Cache Across All Threads	XQUERIES_TO_ CACHE	
Seconds Timeout Flush Cache Completely	XQUERY_CACHE_ FLUSH_TIMEOUT	
Cloud Restriction URLs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Cloud White List Full Path	CLOUD_WHITE_LIST_PATH	
Cloud Custom White List Full Path	CLOUD_CUSTOM_ WHITE_LIST_PATH	

Menu Block 51 - WebLogic Advanced Environment Memory Configuration

WebLogic advanced environment memory configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Application Java Initial Heap Size	WEB_MEMORY_OPT_MIN	
Web Application Java Max Heap Size	WEB_MEMORY_OPT_MAX	
Web Application Java Max Perm Size	WEB_MEMORY_OPT_MAXPER MSIZE	

Menu Option	Name Used in Documentation	Customer Install Value
Web Application Additional Options	WEB_ADDITIONAL_OPT	
Global JVM Arguments	GLOBAL_JVMARGS	
Ant Min Heap Size	ANT_OPT_MIN	
Ant Max Heap Size	ANT_OPT_MAX	
Ant Additional Options	ANT_ADDITIONAL_OPT	
Thread Pool Worker Java Min Heap Size	BATCH_MEMORY_OPT_MIN	
Thread Pool Worker Java Max Heap Size	BATCH_MEMORY_OPT_MAX	
Thread Pool Worker Java Max Perm Size	BATCH_MEMORY_OPT_MAXPERMSIZE	
Thread Pool Worker Additional Options	BATCH_MEMORY_ADDITIONAL_OPT	
Additional Runtime Classpath	ADDITIONAL_RUNTIME_CLASSPATH	

Menu Block 51 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Application Cache Settings	WEB_L2_CACHE_MODE	
Web Server Port Number	WEB_WLPORT	
WebLogic Overload Protection	WLS_OVERRIDE_PROTECT	
Domain Home Location	WLS_DOMAIN_HOME	
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	
Strip HTML Comments	STRIP_HTML_COMMENTS	
Authentication Login Page Type	WEB_WLAUTHMETHOD	
Web Form Login Page	WEB_FORM_LOGIN_PAGE	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_PAGE	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE	

Menu Option	Name Used in Documentation	Customer Install Value
Help Form Login Page	WEB_HELP_FORM_LOGIN_PAGE	
Help Form Login Error Page	WEB_HELP_FORM_LOGIN_ERROR_PAGE	
Web Security Role	WEB_SECURITY_NAME	
Web Principal Name	WEB_PRINCIPAL_NAME	
Application Viewer Security Role	WEB_APPVIEWER_ROLE_NAME	
Application Viewer Principal Name	WEB_APPVIEWER_PRINCIPAL_NAME	
This is a development environment	WEB_ISDEVELOPMENT	
Preload All Pages on Startup	WEB_PRELOADALL	
Maximum Age of a Cache Entry for Text	WEB_MAXAGE	
Maximum Age of a Cache Entry for Images	WEB_MAXAGEI	
JSP Recompile Interval (s)	WEB_wlpageCheckSeconds	

Menu Block 53 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_DEBUG_SETTING	
SPML IDM Schema Name	OIM_SPML_UBER_SCHEMA_NAME	
SPML OIM Name Space	OIM_SPML_NAME_S PACE	
SPML OIM Enclosing Element	OIM_SPML_SOAP_EL EMENT	

Menu Block 54 - WebLogic Diagnostics

WebLogic diagnostic options include:

Menu Option	Name Used in Documentation	Customer Install Value
Diagnostic Context Enabled	WLS_DIAGNOSTIC_CONTEXT_ ENABLED	
Diagnostic Volume	WLS_DIAGNOSTIC_VOLUME	
Built-in Module	WLS_DIAGNOSTIC_BUILT_IN_ MODULE	

Menu Block 53 - OIM Configuration Settings

OIM Configuration Settings include:

Menu Option	Name Used in Documentation	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_DEBUG_SET TING	
SPML IDM Schema Name	OIM_SPML_UBER_SCHEMA_NA ME	
SPML OIM Name Space	OIM_SPML_NAME_SPACE	
SPML OIM Enclosing Element	OIM_SPML_SOAP_ELEMENT	

Menu Block 55 - URI, File and URL Related Options

URI, File and URL Related Options include:

Menu Option	Name Used in Documentation	Customer Install Value
Restriction URLs Enable	CLOUD_RESTRICTION_URLS_E NABLE	
Custom SQL Security	CUSTOM_SQL_ SECURITY	
White List Full Path	CLOUD_WHITE_LIST_PATH	
Custom White List Full Path	CLOUD_CUSTOM_ WHITE_LIST_PATH	
Substitution Variable List File Location	CLOUD_SUBSTITUTION_VARIA BLE_LIST_FILE_LOCATION	

Menu Option	Name Used in Documentation	Customer Install Value
Directory For Variable F1_CMA_FILES	CLOUD_LOCATION_ F1_MIGR_ASSISTANT_FILES	
The following list identifies entries that are visible on the menu but will be deprecated in a future release so they should not be used:		
Directory For Variable F1_BI_EXTRACTS	CLOUD_LOCATION_F1_BI_EX TRACT	
Directory For Variable F1_INTERNAL_FILES	CLOUD_LOCATION_F1_PROD_ INTER_ FILES	
Directory For Variable F1_CUST_APP_BASE	CLOUD_LOCATION_F1_CUST_ APP_ BASE	
Directory For Variable F1_PROCESS_DIR	CLOUD_LOCATION_F1_PROCE SS_DIR	
Directory For Variable F1_SVC_CATALOG_ WSDL_DIR	CLOUD_LOCATION_ F1_SVC_CATALOG_ WSDL_DIR	
Directory For Variable F1_PDB_EXTRACTS	CLOUD_LOCATION_F1_PDB_E XTRACTS	

Appendix B

Installing User Documentation as a Standalone Application

Installing User Documentation

This section provides instructions for installing the Oracle Public Sector Revenue Management user documentation that is supplied with the system. The Oracle Public Sector Revenue Management user documentation is provided in PDF format for printing.

The documentation is also provided in HTML format located inside the Oracle Public Sector Revenue Management application server installation package. It is automatically installed and can be launched from the user interface. The files are under the applications directory packaged in the file named help.war. User documentation is provided in English (ENG). The documentation material is divided into the following subdirectories underneath the language directory.

Installing Stand-Alone Online Help

You can also use the Oracle Public Sector Revenue Management online help in stand-alone mode (that is, you do not have to launch it from the Oracle Public Sector Revenue Management application or access it on the application server).

To install the Oracle Public Sector Revenue Management help for stand-alone operation, copy the help.war from the Oracle Public Sector Revenue Management server (environment) or from the Oracle Public Sector Revenue Management installation package to the server or machine on which you want to access the help. If you want to copy the file from any installed Oracle Public Sector Revenue Management environment, you can locate the file in the $SPLEBASE/splapp/applications directory on the server.

Unzip the help.war file to any directory on your machine. To launch the Oracle Public Sector Revenue Management help in stand-alone mode, open the SPLHelp.html file (located inside the language directory that you wish to use).

> **Note:** Do not change the subdirectory names. The documents use relative path names to link to other documents. Changing the subdirectory names will result in broken links.

Customizing Help for Stand-Alone Operation

You can customize the SPLHelp.html file to open to the file and topic that you most frequently use. To do so, edit the SPLHelp.html file and change the DEFAULT_BOOKMARK to the desired location. The default DEFAULT_BOOKMARK is 'helpHome.html'.

Installing Stand-Alone Help Under Web Server

You can also install Oracle Public Sector Revenue Management online help as a stand-alone web application. You can use any Web Application server like WebLogic. Configure the configuration file for your web application server to use web application help.

For example:

For WebLogic, configure config.xml file for deployed application Name="help" with URI="help.war" and set WebServer DefaultWebApp="help"

Access the documentation from the browser by the following URL:

http://<host name>:<port name>/<WebContext>/<Lang>/SPLHelp.html, where

<hostname>:<portname> is the URL of the web server, <Web Context> is the root web context name specified during Web application server configuration, <Lang> is the name of the language directory, for example, ENG.

Note: Stand-alone online help files are not automatically updated when changes are made to the help files on the application server. You will have to re-install the stand-alone online help files.

Appendix C

Installation Menu Functionality Overview

This chapter provides an overview of the Installation Menu Functionality and also the respective menu details.

The main configuration menu is structured so that related variables and/or options are grouped together and are associated by a menu item number. To access a particular group of variables and options, enter the menu item number associated with that group. Each option is displayed in turn on the screen, along with a prompt so that you can type the desired value for the option, if it is not the same as the default or current value.

When performing the initial installation you need to go through all menu options. The menu options may have a default value, a list of valid values and a validation check.

On each option prompt you can keep the current value by simply leaving the input line empty. In order to erase a variable value you need to enter one dot (“.”). The leading spaces will be trimmed out on each values entered. The menu includes the following:

- **Valid Values: [ALFANUM].** This indicates you will need to enter an alphanumeric value in the prompt.
- **Valid Values: [NUM].** This indicates you will need to enter an numeric value in the prompt.

Please also note the following:

- When all options are set, type <P> at the main menu prompt option. This will save the option values selected throughout the configuration.
- During this processing the global variables are validated and the configuration file <SPLEBASE>/etc/ENVIRON.INI is created or updated. This file contains all the variables inputted and calculated. These are needed by the next part of the installation process.
- To exit the configuration utility without saving any of the values entered, type <X> and press 'Enter'.

Installation Menu Functionality Details

The Environment Installation Utility requires that Oracle Client Home is set in the path for the user performing the installation.

Prior to running the installation utility you will need to review the supported platforms document to ensure you have all of the Third Party software installed.

In this menu if the variables are set prior to execution, that value will be defaulted by the installation utility when performing the installation.

When the installation has been completed successfully, the values will be written to an ENVIRON.INI file. When splenviron.sh / cmd is executed, it will read from the ENVIRON.INI file to set the environment variables. Refer to the *Oracle Utilities Application Framework Server Administration Guide* for details about configuring these values.

Install the Oracle Client software specified in the <<Shared All OUAF - Install_Supported_Platforms_OS_AS.fm section prior to running any of the installation utilities.

The following prompt will appear when executing the installation utility:

```
Enter Oracle Client Home Directory (<ENTER> quit):
```

Note: If the environmental variable ORACLE_CLIENT_HOME is set, the install script will validate the variable. If it passes the validation you will not be prompted for it. This is needed in order to run Perl installation utilities.

Encryption Methods

When the application server choice is Oracle WebLogic, the Oracle Utilities Application Framework installation uses the WebLogic API to encrypt the User ID and password that perform admin functions for the WebLogic application servers. Please refer to the WebLogic documentation for further information about the encryption.

The Oracle Utilities Application Framework installation also uses industry standard cryptography to encrypt passwords that are prompted within the installation.

When these passwords are entered in the command line, the input values are not reflected on the screen when performing the installation.

Appendix D

Common Maintenance Activities

This appendix lists frequently-used commands that you use to perform common maintenance activities, such as starting and stopping the environment and thread pool worker, modifying the configuration items.

Run the following commands to perform these common tasks:

To Initialize the Environment

1. Go the directory <install_dir>/bin.
2. Run the following command:

   UNIX

   ```
   ./splenviron.sh -e <Env_Name>
   ```

   Windows

   ```
   splenviron.cmd -e <Env_Name>
   ```

To Start the WebLogic Server

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh start
   ```

   Windows

   ```
   spl.cmd start
   ```

To Stop the WebLogic Server

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh stop
   ```

   Windows

   ```
   spl.cmd stop
   ```

To Start the Thread Pool Worker

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh -b start
   ```

   Windows

   ```
   spl.cmd -b start
   ```

To Stop the Thread Pool Worker

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh -b stop
   ```

   Windows

   ```
   spl.cmd -b stop
   ```

To Modify the Configuration Values

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   configureEnv.sh
   ```

   Windows

   ```
   configureEnv.cmd
   ```

   The configuration utility launches menu items. Select any Menu option.
3. Change the menu values.
4. After you change the menu values, press P to write the changes to the configuration file.
5. To apply the changes to the environment, run the initial setup script:

   ```
   initialSetup.sh
   ```

To Modify the Advanced Menu Option Values

1. Initialize the environment.

   The configuration utility launches menu items.
2. Run the following command:

   UNIX

   ```
   configureEnv.sh -a
   ```

   Windows

   ```
   configureEnv.cmd -a
   ```

3. Select any menu option.
4. Change the menu values.
5. To apply the changes to the environment, run initial setup script:

   ```
   initialSetup.sh
   ```