Oracle Public Sector Revenue Management

Installation Guide

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ORACLE

Oracle Public Sector Revenue Management Installation Guide

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Preface

This guide describes how to install Oracle Public Sector Revenue Management.

Audience

Oracle Public Sector Revenue Management Installation Guide is intended for system administrators and implementers installing Oracle Public Sector Revenue Management.

To use this document you should have:

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

Related Documents

For more information, refer to these Oracle documents:

Installation Guides and Release Notes

- *Oracle Public Sector Revenue Management V2.4.0.2 Release Notes*
- *Oracle Public Sector Revenue Management V2.4.0.2 Quick Install Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Installation Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Database Administrator's Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Optional Product Installation Guide*

Administration and Business Process Guides

- *Oracle Public Sector Revenue Management V2.4.0.2 Administration Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Business Process Guide*
- *Oracle Utilities Application Framework V4.2.0.3.0 Administration Guide*
- *Oracle Utilities Application Framework V4.2.0.3.0 Business Process Guide*

Supplemental Documents

- *Oracle Public Sector Revenue Management V2.4.0.2 Batch Server Administration Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Server Administration Guide*
- *Oracle Public Sector Revenue Management V2.4.0.2 Security Guide*

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.

Chapter 1

Installation Overview

This section provides an overview of the installation of Oracle Public Sector Revenue Management. Installing Oracle Public Sector Revenue Management involves the following steps:

1. Review the different tiers of the application architecture as described in **Chapter 2: Application Architecture Overview**.
2. Understand the hardware requirements for installing the application and the supported platforms for the application and database servers as described in **Chapter 3: 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. Plan your installation as described in **Chapter 4: Planning the Installation**.
4. Install the database as described in the document Oracle Public Sector Revenue Management *Database Administrator's Guide*.
5. Install all required third-party software as described in **Chapter 6: Installing Application Server Prerequisite Software**. The required software is listed for each supported combination of operating system and application server.
6. If your installation is for a WebSphere Basic or WebSphere Network Deployment application server on AIX, configure your server as described in **Chapter 7: Configuring the WebSphere Application Server**.
7. Install the framework for the application as described in **Chapter 8: Installing the Application Server Component of Oracle Utilities Application Framework**.
8. Install Oracle Public Sector Revenue Management as described in **Chapter 9: Installing the Application Server Component of Oracle Public Sector Revenue Management**.
9. If you have already installed Oracle Public Sector Revenue Management version 2.4.0.1.0, install version 2.4.0.2.0 as described in **Chapter 10: Upgrading to Oracle Public Sector Revenue Management Version 2.4.0.2.0**.
10. Follow the installation guidelines described in **Chapter 11: Additional Tasks**.

Upgrade considerations

An upgrade can be performed in place of an initial installation for the application server. However, it is recommended that you do a clean install and then retrofit all customer modifications (CM code) and configurations into the new install using the best practices discussed in the Oracle Utilities Application Framework Software Development Kit documentation.

Chapter 2

Application Architecture Overview

This section provides an overview of the Oracle Public Sector Revenue Management application architecture.

Please see the Oracle Public Sector Revenue Management *Server Administration Guide* for a more detailed description of the application architecture and individual tiers. The Oracle Public Sector Revenue Management application is deployed on the following 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 or business application 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 Public Sector Revenue Management installation documentation assumes that the web application and business application servers reside together.

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.

Chapter 3

Supported Platforms and Hardware Requirements

This section gives an overview of the tiers on which the product is implemented, and shows each of the operating system/server combinations that the product is certified for. It includes:

- **Software and Hardware Considerations**
- **Requirements by Tier**
- **Supported Platforms**
- **Support for Software Patches and Upgrades**

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.

Requirements by Tier

The application is deployed on multiple Tiers:

- Tier 1, Desktop
- Tier 2, Web/Business Application Server
- Tier 3, Database Server

Tier 1, Desktop: Software and Hardware Requirements

Configuration	Processor	Memory (RAM)	Monitor Display
Minimum	Pentium IV - 2.0 GHz	1024 MB	1024X768** 16-bit Color
Recommended*	Pentium IV - 3.0+ GHz, Or any Core 2 Duo Or any Athlon X2	2048 MB	1280X1024* 32-bit Color

* The Recommended configuration will support better performance of the client.

** To reduce the amount of scrolling required for pages that are longer than 768 or 1024 pixels, consider placing a monitor into vertical position (with narrow side on the bottom).

Web Browser Requirements

The following operating system and web browser combinations are supported:

- Windows 7 (32-bit or 64-bit) with Internet Explorer 9.x or 10.x / Firefox 17 ESR

  Note:

  - Internet Explorer 9.x and 10.x must be in Compatibility Mode
  - Only ESR versions of Mozilla Firefox are supported

Tier 2, Web/Business Application Server: Software and Hardware Requirements

Please consult the **Supported Platforms** on page 3-3 to determine which web application servers can be used with the operating system that will be hosting this tier.

The recommendations that follow are based on a standard installation with both the application and business servers on the same machine and the system running with the default values. The minimum resource requirements exclude third-party software installation requirements. Refer to the third-party vendors for specific requirements. The following sizing excludes the Oracle database server installation.

Memory Requirements

For each application server environment a minimum of 4 GB of real memory is required, plus 6 GB of swap space.

Disk Space Requirements

The approximate disk space requirements in a standard installation are as follows:

Location	Size	Usage
$SPLEBASE	5 GB minimum	This location is 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.
$SPLOUTPUT	2 GB 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	1.5 GB minimum	This location is used by the 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. If you are installing WebLogic using the PSRM template domain, this location is $SPLEBASE/splapp/servers/myserver.
Installation temporary area	4 GB	The application gets installed from this location. You need enough space to uncompress 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.

Tier 3, Database Server: Software and Hardware Requirements

See the **Certified Platform Matrix** on page 3-4 for supported database servers.

Supported Platforms

The installation has been tested and certified to operate on many operating system, application server, and database server combinations. For the software requirements for each of these combinations, see **Chapter 6**: **Installing Application Server Prerequisite Software** for more information.

Certified Platform Matrix

Client Tier	Application Server Tier			Database Tier
	Operating Systems (64bit only)	Chipset	Application Server	
Operating System: Wndows 7 Browsers: IE 9.x or 10.x FireFox 17 ESR	AIX 7.1	P-Series	Oracle WebLogic 10.3.6 (Standard and Enterprise Edition) IBM WebSphere 8.5.0.1 (Basic and ND)	Operating Systems: as supported by the respective DB Server versions Database Servers: Oracle 11.2.0.3 (Standard and Enterprise Edition) Oracle 12.1.0.2 (Standard and Enterprise Edition)
	Oracle Enterprise Linux 5.8 or 6.3	X86	WebLogic 10.3.6	
	Oracle Solaris 11	SPARC	WebLogic 10.3.6	
	Windows Server 2008 R2	X86	WebLogic 10.3.6	

Note: Oracle Database Enterprise Edition and the Partitioning and Advanced Compression options are not mandatory but recommended. Standard Edition should only be considered suitable for very small, pilot projects or development environments where scalability, performance, and database size-on-disk are not important considerations. Oracle Database Enterprise Edition, including the Advanced Compression and Partitioning options, is strongly recommended in all other situations.

Support for Software Patches and Upgrades

Due to the ongoing nature of software improvement, vendors will issue patches and service packs for the operating systems, application servers and database servers on top of specific versions that Oracle Utilities Application Framework has been tested with.

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 Oracle Public Sector Revenue Management production environment.

The exceptions from this rule are Hibernate software version 4.1.0. This version should not be upgraded.

Always contact Oracle Public Sector Revenue Management support prior to applying vendor updates that do not guarantee backward compatibility.

Chapter 4

Planning the Installation

This chapter provides information for planning an Oracle Public Sector Revenue Management (PSRM) installation, including:

- **Supported Upgrade Paths**
- **Installation and Configuration Overview**
- **Application Server Clustering**
- **Native Mode in WebLogic**
- **Before You Install**
- **Installation Checklist**
- **Prerequisite Third-Party Software Overview**
- **Application Framework Installation and Configuration Worksheets**
- **Oracle Public Sector Revenue Management Installation and Configuration Worksheets**

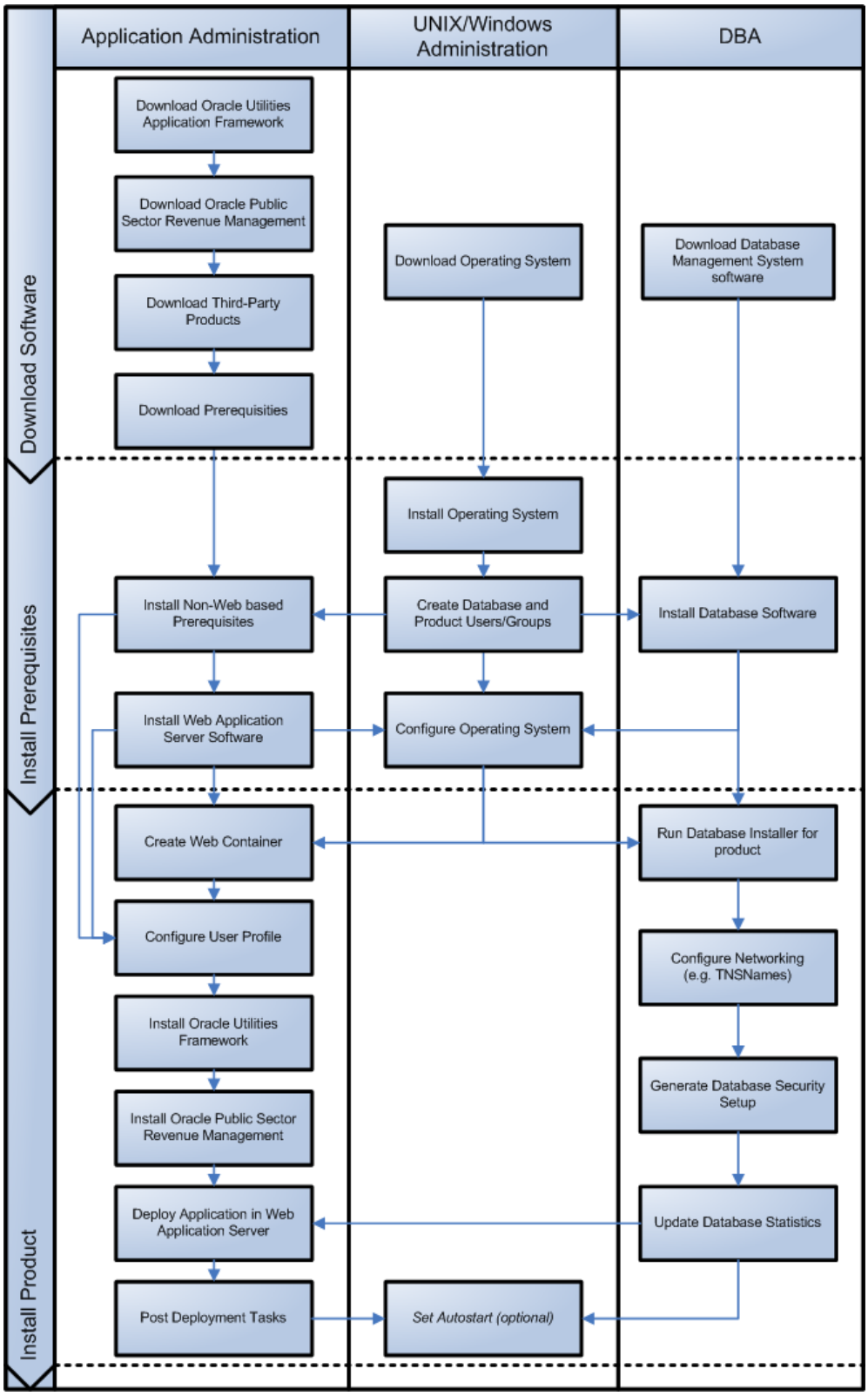
Supported Upgrade Paths

The system supports the following upgrade path:

- Upgrade from PSRM 2.4.0.1.0

Installation and Configuration Overview

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



Before You Install

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

Application Server Clustering

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

- *Implementing Oracle ExaLogic and/or Oracle WebLogic Clustering* (Doc Id: 1334558.1)
- *IBM WebSphere Clustering for Oracle Utilities Application Framework* (Doc Id: 1359369.1)

Native Mode in WebLogic

If you plan on using the product in native mode (instead of embedded mode) within Oracle WebLogic, refer to the whitepaper *Native Installation Oracle Utilities Application Framework* (Doc Id: 1544969.1) on *My Oracle Support*.

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 Application Server Prerequisite Software** on page 6-1 for more information).
    - Oracle client 11.2.0.3 or 12.1.0.1.0
    - Java 6
    - (Optional) Oracle JRockit, if using Oracle WebLogic on Linux as your web server
    - Hibernate 4.1.0
    - Micro Focus Server 5.1 WrapPack 8
3. Install one of the following web servers:
    - Oracle WebLogic 10.3.6
    - IBM WebSphere Basic 8.5.0.1
    - IBM WebSphere ND 8.5.0.1
4. Review and complete the **Application Framework Installation and Configuration Worksheets** on page 4-5 and the **Oracle Public Sector Revenue Management Installation and Configuration Worksheets** on page 4-43.
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.

Prerequisite Third-Party Software Overview

For complete details about installing and configuring the prerequisite third-party software for your specific platform, see **Chapter 6: Installing Application Server Prerequisite Software**.

Application Framework 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, as described in the **Chapter 8: Installing the Application Server Component of Oracle Utilities 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 **Chapter 6: Installing Application Server Prerequisite Software**.

Refer to **Appendix A: Glossary of Acronyms** for definitions of the acronyms used in these worksheets.

Installation Menu Functionality Overview

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 within that group 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.

> **Note:** When working with the menu you will see 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.

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 '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.

In the worksheets there are three different types of values given:

- Default Values are the values that will be defaulted when running the installation utility.
- Security Values denote values that should be changed when in production.
- Example Values are values that can be used for a default installation.

> **Note:** The production environment should not be run with default values. See the *Server Administration Guide* specific to this product, for additional information about configuring these values.

When you enter passwords you will not see the password characters on the screen because they are entered in silent mode. Passwords are encrypted when the values are entered.

Install the Oracle Client software specified in the section **Supported Platforms** 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 the application server choice is IBM WebSphere Basic or IBM WebSphere Network Deployment, the Oracle Utilities Application Framework installation will use industry standard cryptography to encrypt passwords that are prompted within the installation.

In each case these password are entered in the command line but the inputted values are not reflected on the screen when performing the installation.

Third Party Software Configuration

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

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Oracle Client Home Directory	ORACLE_CLIENT_HOME	The home directory of the Oracle Client. The application will use the Perl included under this Oracle Client. Example Location: /oracle/client/product/11.2.0.3	
Web Java Home Directory	JAVA_HOME	Java home that will be used by the web application server. Example Location: /ouaf/java/jdk1.6.0_31 /ouaf/websphere/AppServer/java	
Child JVM Home Directory	CHILD_JVM_JAVA_HOME	Java home that will be used by the child java process that handles COBOL related requests. Example Location: /ouaf/java/jdk1.6.0_31 /ouaf/websphere/AppServer/java	
COBOL Home Directory	COBDIR	COBOL installation location directory. Example Location (Unix/Linux): /opt/SPLcobAS51WP8 Example Location (Windows): D:\MicroFocus\Server5.1\Bin\WIN64	
Hibernate JAR Directory	HIBERNATE_JAR_DIR	Location on the disk where the hibernate-core-4.1.0.Final.jar is installed.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
*ONS JAR Directory	ONS_JAR_DIR	Location on the disk where the ons-11.2.0.2.jar file is installed. **Required for Oracle RAC installation. See the Server Administration Guide for more information.	
Database Home Directory	DATABASE_HOME	Location on the disk where database client is installed for your particular installation. Example Location for Oracle Database: /oracle/client/product/11.2.0.3 Note: This value will be the same as the previously entered for Oracle.	
Web Application Server Home Directory	WEB_SERVER_ HOME	Location on the disk where the application server is installed. Example Location: WebLogic: /ouaf/middleware/ wlserver_10.3 To validate the home directory, check if the following jar files exist in the appropriate path: $WEB_SERVER_HOME/server/lib/ weblogic.jar %WEB_SERVER_HOME%\server\lib\ weblogic.jar WebSphere: /ouaf/IBM/WebSphere85/AppServer WebSphere ND: /ouaf/IBM/WebSphere85ND/	
* ADF Home Directory	ADF_HOME	Location on the disk where ADF is installed. Example Location: /ouaf/jdev11_1_1_6 Note: This menu option is not applicable to Oracle Public Sector Revenue Management.	Press **Enter** to skip this value.

Menu Option	Name Used in Documentation	Usage	Customer Install Value
OIM OAM Enabled Environment	OPEN_SPML_ENABLED_ENV	Denotes if an environment will be integrating with Oracle Identity Manager for user propagation. Valid values: true false Defaulted value: false	

* Denotes optional Menu Options 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, version 11.2.0.3. This ons.jar is located under the Oracle Database Software 11.2.0.3, at the following path:

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

The ons.jar should be copied to the Application Server. During the Oracle Utilities Application Framework installation the relevant option should be populated with the folder location of the ons.jar.

Environment Installation Options

```
50. Environment Installation Options
       Environment Mount Point:
       Log Files Mount Point:
       Environment Name:
       Web Application Server Type:
       Install Application Viewer Module:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Environment Mount Point	<SPLDIR>	The mount point into which the application is installed. For example: /ouaf for UNIX and C:\ouaf for Windows. This mount point MUST exist and the PSRM administrator user ID MUST be able to write to this directory. (This is the user ID that is created specifically to administer the (PSRM) environments; the default is cissys). The installation sets permissions on all subdirectories installed under this directory. See <SPLENVIRON> below for more information on how this mount point is used.	
Log File Mount Point	<SPLDIROUT>	A mount point that will contain any application output or application logs. Example value is /ouaf/sploutput for UNIX installation or C:\ouaf\sploutput for Windows. This mount point MUST exist and the PSRM administrator user ID MUST be able to write to this directory. (This is the user ID that is created specifically to administer the (PSRM) environments; the default is cissys). For each environment initialized, the application logs will be written to the directory <SPLDIROUT>/<SPLENVIRON> Note: Later in the installation the splenviron.sh (splenviron.cmd) script will set the $SPLOUTPUT (%SPLOUTPUT%) environment variable to point to:<SPLDIROUT>/<SPLENVIRON>	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Environment Name	<SPLENVIRON>	A descriptive name to be used as both a directory name under the mount point <SPLDIR> and an environment descriptor. This value typically identifies the purpose of the environment. For example, DEV01 or CONV. On installation a directory <SPLDIR>/<SPLENVIRON> is created, under which the Oracle Utilities Application Framework and Oracle Public Sector Revenue Management software resides. When multiple environments are set up on the machine you will typically have directories such as: /ouaf/DEV01/.... /ouaf/CONV/.... Each of these contains a complete version of the Oracle Utilities Application Framework and Oracle Public Sector Revenue Management. Note: Later in the installation process, the splenviron.sh (splenviron.cmd) script will set $SPLEBASE (%SPLEBASE%) environment variable to point to <SPLDIR>/<SPLENVIRON>	
Web Application Server Type	<SPLWAS>	A web application server for the environment to be used. The following value must be selected: Valid values: WLS: WebLogic WAS: WebSphere WASND: WebSphere ND Note: Not all web application servers are supported on all platforms; refer to Supported Platforms section for details.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Installation Application Viewer Module	<WEB_ISAPPVIEWER>	Denotes if the Application Viewer Web Module will be installed in the environment. When this value is set to false the application viewer will not be accessible in the environment. Valid values: true: Application Viewer module will be installed. false: Application Viewer module will not be installed. Defaulted value: true Note: When the value of false is selected, the Application Viewer will only be installed at a later date by a complete reinstall of the PSRM application server.	

Environment Description

```
1. Environment Description
       Environment Description:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Environment Description	DESC	This is a free form text field to describe the purpose of the environment.	

WebLogic Business Application Server Configuration

The WebLogic parameters below and in the worksheet are for a WebLogic installation.

```
2. Business Application Server Configuration
      Business Server Host:                                <machine_name>
      WebLogic Server Name:                                  myserver
      Business Server Application Name:                      SPLService
      MPL Admin Port Number:
      MPL Automatic startup:                                 false
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Business Server Host	BSN_WLHOST	The host name on which business application server resides. Default value: <current server name>	
WebLogic Server Name	BSN_WLS_SVRNAME	The name of the WebLogic server where the business application resides. Default value: myserver Note: If there is not a previously created WebLogic server, take the default value of "myserver".	
Business Server Application Name	BSN_APP	The name of the business application server. Default value: SPLService	
MPL Admin Port number	MPLADMINPORT	The port number for the Multi Purpose Listener (MPL) Admin Server. Example value: 6502	
MPL Automatic Startup	MPLSTART	Automatically starts the MPL Listener whenever environment starts. Default value: false	

WebSphere ND Business Application Server Configuration

The WebSphere Network Deployment (WebSphere ND) parameters below and in the worksheet are for an IBM WebSphere ND installation.

```
2. Business Application Server Configuration
       Business Server Host:                          <machine_name>
       Bootstrap Port:
       WebSphere Server Name:
       WebSphere Node Name:
       Business Server Application Name:               SPLService
       MPL Admin Port Number:
       MPL Automatic startup:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Business Server Host	BSN_WLHOST	The host name on which business application server resides. Default value: <current server name>	
Bootstrap Port	BSN_WASBOOTSTRAPPORT	The boot strap port number allows the web module to communicate with the EJB module.	
WebSphere Server Name	BSN_SVRNAME	The WebSphere Network Deployment Application Server to host the PSRM application server. Each PSRM application (environment) must be installed in a unique WebSphere ND Application Server. Default value: server2	
WebSphere Node Name	BSN_NODENAME	The name of the WebSphere ND Node Name where the WebSphere ND Application Server is running.	
Business Server Application Name	BSN_APP	The name of the business application server. Default value: SPLService	
MPL Admin Port number	MPLADMINPORT	The port number for the Multi Purpose Listener (MPL) Admin Server. Example value: 6502	
MPL Automatic Startup	MPLSTART	Automatically starts the MPL Listener whenever environment starts. Default value: false	

WebSphere Basic Business Application Server Configuration

The WebSphere parameters below and in the worksheet are for a WebSphere installation.

```
2. Business Application Server Configuration
      Business Server Host:                                <machine_name>
       Bootstrap Port:
       WebSphere Server Name:
       WebSphere Node Name:
       Business Server Application Name:                      SPLService
       MPL Admin Port Number:
       MPL Automatic startup:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Business Server Host	BSN_WLHOST	The host name on which business application server resides. Default value: <current server name>	
Bootstrap Port	BSN_WASBOOTSTRAPPORT	The boot strap port number allows the web module to communicate with the EJB module.	
WebSphere Server Name	BSN_SVRNAME	The WebSphere Application Server to host the OUAF application. Each PSRM application (environment) must be installed in a unique WebSphere ND Application Server. Default value: server2	
WebSphere Node Name	BSN_NODENAME	The name of the WebSphere Node Name where the WebSphere Application Server is running.	
Business Server Application Name	BSN_APP	The name of the business application server. Default value: SPLService	
MPL Admin Port number	MPLADMINPORT	The port number for the Multi Purpose Listener (MPL) Admin Server. Example value: 6502	
MPL Automatic Startup	MPLSTART	Automatically starts the MPL Listener whenever environment starts. Default value: false	

WebLogic Web Application Server Configuration

The WebLogic parameters below and in the worksheet are for a WebLogic installation.

```
3. Web Application Server Configuration
      Web Server Host:                                    <machine_name>
      Web Server Port Number:
      Web Context Root:
      WebLogic JNDI User ID:
      WebLogic JNDI Password:
      WebLogic Admin System User ID:
      WebLogic Admin System Password:
      WebLogic Server Name:                                 myserver
      Web Server Application Name:                          SPLWeb
      Application Admin User ID:
      Application Admin Password:
      Expanded Directories:                                 true
      Application Viewer Module:                            true
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Server Host	WEB_WLHOST	The host name on which the web application server resides. Default value: <current server name>	
Web Server Port Number	WEB_WLPORT	A unique port number within the system that will be assigned to the HTTP port. This is the port number that is used as a part of the client URL request to connect to the host. Example value: 6500	
Web Context Root	WEB_CONTEXT_ROOT	A context root name that allows customers to run multiple instances of PSRM web application on the same server. Default value: ouaf	
WebLogic JNDI User ID	WEB_WLSYSUSER	The user ID the application uses to connect to the EJB component through JNDI. This is the EJB container user ID. Note: If there is no previously created WebLogic user, specify the value as "system". This is a security value.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
WebLogic JNDI Password	WEB_WLSYSPASS	The password the application uses to connect to the EJB component through JNDI Note: If WebLogic JDNI User ID was set to system, specify the value of "ouafadmin" for password. This value will be saved in encrypted format. This is a security value.	
WebLogic Admin System User ID	WLS_WEB_WLSYSUSER	The user ID to log in to the Oracle WebLogic console and to administer Oracle WebLogic. The Oracle WebLogic startup and stop script also utilizes this user ID Note: The installation utility will prompt to enter "Y" to encrypt. Enter Y/y when there is a not a WebLogic user previously created, and specify value of "system". This is a security value.	
WebLogic Admin System Password	WLS_WEB_WLSYSPASS	The password to login to Oracle WebLogic console and to administer Oracle WebLogic. The Oracle WebLogic startup and stop script also utilize this password. Note: The installation utility will prompt to enter "Y" to encrypt. Enter Y/y when there is a not a WebLogic user previously created, and specify value of ouafadmin. This is a security value.	
WebLogic Server Name	WEB_WLS_SVRNAME	The name of the WebLogic server where the web application resides. Default value: myserver Note: If there is not a previously created WebLogic server, take default value of "myserver".	
Web Server Application Name	WEB_APP	The name of the web application server. Default value: SPLWeb Note: For an initial installation, use the default value of "SPLWeb".	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Application Admin User ID	WEB_SPLUSER	This is the default user ID to login to the application through the browser. Example value: SYSUSER Note: The required value for an initial installation is "SYSUSER". This value is also used in communication within the XAI application. This is a security value.	
Application Admin Userid Password	WEB_SPLPASS	This is the password of the application admin user. Example value: sysuser00 Note: The required value for an initial installation is "sysuser00". This value will be saved in encrypted format This is a Security Value.	
Expanded Directories	WEB_ISEXPANDED	When the value is "true" the web application will be deployed in exploded directory format (no WAR files). When the value is "false", the web application will be deployed in ear file format. Valid values: true: Environment expanded (no WAR files) false: Environment with WAR/EAR files Default value: false	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Application Viewer Module	WEB_ISAPPVIEWER	When the value is "true" the application viewer will be deployed to the web server. When the value is "false", the application viewer will not be deployed to the web Server. Note: With either value the application viewer module will still be managed by the upgrade process. Note: When this value is set to false from the initial install menu you will not be able to change this value to true to re-enable the application viewer. Valid values: true: The application viewer module will be deployed to the web server false: The application viewer module will not be deployed to the web server Default value: true	

WebSphere ND Web Application Server Configuration

The WebSphere ND parameters below and in the worksheet are for a WebSphere ND installation.

```
3. Web Application Server Configuration
      Web Server Host:                                    <machine_name>
      Web Server Port Number:
      Web Context Root:
      WebSphere Server Name:
      WebSphere Node Name:
      Web Server Application Name:
      WebSphere JNDI System User ID:
      WebSphere JNDI System Password:
      Application Admin User ID:
      Application Admin Password:
      Expanded Directories:
      Application Viewer Module:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Server Host	WEB_WLHOST	The host name on which the web application server resides. Default value: <machine_name>	
Web Server Port Number	WEB_WLPORT	The WC_defaulthost number for your WebSphere ND server. This is the port number that is used as a part of the client URL request to connect to the host. Example value: 9081	
Web Context Root	WEB_CONTEXT_ROOT	A context root name that allows customers to run multiple instances of web application on the same installation of WebSphere ND server. Default value: ouaf	
WebSphere Server Name	WEB_SVRNAME	The WebSphere ND Application Server to host the PSRM application. Each PSRM must be installed in a unique WebSphere ND Application Server. Default value: server2	
WebSphere Node Name	WEB_NODENAME	The name of the WebSphere ND Node Name where the WebSphere ND Application Server is running.	
Web Server Application Name	WEB_APP	The name of the web application server. Default value: SPLWeb	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
WebSphere JNDI User ID:	WEB_WASUSER	User ID the application utilizes to connect to the EJB component through JNDI. This is the EJB container user ID. Note: This value must be a valid User in the WebSphere ND console.	
WebSphere JNDI System Password:	WEB_WASPASS	The password the application utilizes to connect to the EJB component through JNDI. Note: This value will be saved in encrypted format.	
Application Admin User ID	WEB_SPLUSER	This is the default user ID to login to the application through the browser. Example value: SYSUSER Note: This value is also used in communication within the XAI application. Note: This value must be a valid User in the WebSphere ND console. This is a security value.	
Application Admin Userid Password	WEB_SPLPASS	This is the password of the application admin user. Example value: sysuser00 Note: This value will be saved in encrypted format This is a security value.	
Expanded Directories	WEB_ISEXPANDED	When the value is "true" the web application will be deployed in exploded directory format (no WAR files). When the value is "false", the web application will be deployed in ear file format. Valid values: true: Environment expanded (no WAR files) false: Environment with WAR/EAR files Default value: false Note: You must select "false" for a WebSphere ND installation.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Application Viewer Module	WEB_ISAPPVIEWER	When the value is "true" the application viewer will be deployed to the web server. When the value is "false", the application viewer will not be deployed to the web server. Note: With either value the application viewer module will still be managed by the upgrade process. Note: When this value is set to false from the initial install menu you will not be able to change this value to true to re-enable the application viewer. Valid values: true: The application viewer module will be deployed to the web server) false: The application viewer module will not be deployed to the web server) Default value: true	

WebSphere Basic Web Application Server Configuration

The WebSphere parameters below and in the worksheet are for a WebSphere installation.

```
3. Web Application Server Configuration
       Web Server Host:                                    <machine_name>
       Web Server Port Number:
       Web Context Root:
       WebSphere Server Name:
       WebSphere Node Name:
       Web Server Application Name:
       WebSphere JNDI System User ID:
       WebSphere JNDI System Password:
       Application Admin User ID:
       Application Admin Password:
       Expanded Directories:
       Application Viewer Module:
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Server Host	WEB_WLHOST	The host name on which the web application server resides. Default value: <machine_name>	
Web Server Port Number	WEB_WLPORT	The WC_defaulthost number for your WebSphere Basic server. This is the port number that is used as a part of the client URL request to connect to the host. Example value: 9081	
Web Context Root	WEB_CONTEXT_ ROOT	A context root name that allows customers to run multiple instances of web application on the same installation of WebSphere server. Default value: ouaf	
WebSphere Server Name	WEB_SVRNAME	The WebSphere Basic Application Server to host the PSRM application. Each PSRM must be installed in a unique WebSphere Basic application server. Default value: server2	
WebSphere Node Name	WEB_NODENAME	The name of the WebSphere Basic Node Name where the WebSphere Basic application server is running.	
Web Server Application Name	WEB_APP	The name of the web application server. Default value: SPLWeb	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
WebSphere JNDI User ID:	WEB_WASUSER	User ID the application utilizes to connect to the EJB component through JNDI. This is the EJB container user ID. Note: This value must be a valid User in the WebSphere console. This is a security value.	
WebSphere JNDI System Password:	WEB_WASPASS	The password the application utilizes to connect to the EJB component through JNDI. Note: This value will be saved in encrypted format. This is a security value.	
Application Admin User ID	WEB_SPLUSER	This is the default user ID to login to the application through the browser. Example value: SYSUSER Note: This value is also used in communication within the XAI application. Note: This value must be a valid User in the WebSphere console. This is a security value.	
Application Admin Userid Password	WEB_SPLPASS	This is the password of the application admin user. Example value: sysuser00 Note: This value will be saved in encrypted format This is a security value.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Expanded Directories	WEB_ISEXPANDED	When the value is "true" the web application will be deployed in exploded directory format (no WAR files). When the value is "false", the web application will be deployed in ear file format. Valid values: true: Environment expanded (no WAR files) false: Environment with WAR/EAR files Default value: false Note: You must select false for a WebSphere installation.	
Application Viewer Module	WEB_ISAPPVIEWER	When the value is "true" the application viewer will be deployed to the web server. When the value is "false", the application viewer will not be deployed to the web server. Note: With either value the application viewer module will still be managed by the upgrade process. Note: When this value is set to false from the initial install menu you will not be able to change this value to true to re-enable the application viewer. Valid values: true: The application viewer module will be deployed to the web server) false: The application viewer module will not be deployed to the web server) Default value: true	

Database Configuration

```
4. Database Configuration
       Web Application Database User ID:
       Web Application Database Password:
       MPL Database User ID:
       MPL Database Password:
       XAI Database User ID:
       XAI Database Password:
       Batch Database User ID:
       Batch Database Password:
       Database Name
       Database Server:
       Database Port:
       ONS Server Configuration:
       Database Override Connection String:
      Oracle Client Character Set NLS_LANG:  AMERICAN_AMERICA.AL32UTF8
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Application Database User ID	DBUSER	The database user ID that has been configured on the database for the web application server connection. This is a security value.	
Web Application Database Password	DBPASS	The database password that has been configured on the database for the web application connection. Note: This value will be saved in encrypted format. This is a security value.	
MPL Database User ID	MPL_DBUSER	The database user ID that has been configured on the database for the MPL server connection. This is a security value.	
MPL Database Password	MPL_DBPASS	The database password that has been configured on the database for the MPL server connection. Note: This value will be saved in encrypted format. This is a security value.	
XAI Database User ID	XAI_DBUSER	The database user ID that has been configured on the database for the XAI server connection. This is a security value.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
XAI Database Password	XAI_DBPASS	The database password that has been configured on the database for the XAI server connection. Note: This value will be saved in encrypted format. This is a security value.	
Batch Database User ID	BATCH_DBUSER	The database user ID that has been configured on the database for the batch connection. This is a security value.	
Batch Database Password	BATCH_DBPASS	The database password that has been configured on the database for the batch connection. Note: This value will be saved in encrypted format. This is a security value.	
Database Name	DBNAME	The name of the database instance that the application will be connecting to.	
Database Server	DBSERVER	Host name of the server where database resides.	
Database Port	DBPORT	Database port number on the database server used for connecting to the database	
ONS Server Configuration	ONSCONFIG	ONS Server Configuration is required for Oracle RAC FCF. See the Server Administration Guide for more information. This is an optional value.	
Database Override Connection String	DB_OVERRIDE_CONNECTION	This connection string can be used to override the database information entered above for RAC installation. Set this string to override the standard database connection string, as entered above. See the Server Administration Guide for more information. This is an optional value.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Oracle Client Character Set NLS_LANG	NLS_LANG	The Oracle Database Character Set. Select the Language and Territory that are in use in your country. Default value: AMERICAN_AMERICA.AL32UTF8	

General Configuration Options

Note: See the Oracle Public Sector Revenue Management *Batch Server Administration Guide* for additional details on this configuration.

```
5. General Configuration Options
       Batch RMI Port:
       Batch Mode:                                          CLUSTERED
       Coherence Cluster Name:
       Coherence Cluster Address:
       Coherence Cluster Port:
       Coherence Cluster Mode:                              dev
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Batch RMI Port	BATCH_RMI_PORT	Unique port used by the Batch RMI	
Batch Mode	BATCH_MODE	Valid values: CLUSTERED or DISTRIBUTED Default value: CLUSTERED Note: CLUSTERED is currently the only supported mode for production environments.	
Coherence Cluster Name	COHERENCE_CLUSTER_NAME	Unique name for the batch CLUSTER Note: Value is required when batch mode is CLUSTERED.	
Coherence Cluster Address	COHERENCE_CLUSTER_ADDRESS	Unique multicast address. Note: Value is required when batch mode is CLUSTERED.	
Coherence Cluster Port	COHERENCE_CLUSTER_PORT	Unique port for the batch CLUSTER Note: Value is required when batch mode is CLUSTERED.	
Coherence Cluster Mode	COHERENCE_CLUSTER_MODE	Valid values: dev (Development) prod (Production) Default value: dev	

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
```

Advanced Environment Miscellaneous Configuration

```
50. Advanced Environment Miscellaneous Configuration
       WebSphere Deployment Manager Host Name
       Online JVM Batch Server Enabled:                    false
       Online JVM Batch Number of Threads:                 5
       Online JVM Batch Scheduler Daemon Enabled:          false
       JMX Enablement System User ID:
       JMX Enablement System Password:
       RMI Port number for JMX Business:
       RMI Port number for JMX Web:
       GIS Service Running on the same Web Server:         true
       GIS Service URL:
       GIS WebLogic System User ID:
       GIS WebLogic System Password:
       Online Display Software Home:
       Server Express COBOL Home Directory:
```

Menu Option	Name Used in Documentation	Usage	Customer Value Install
WebSphere Deployment Manager Host Name	WASND_DMGR_HOST	WebSphere Deployment Manager Host name, this value is used for WebSphere ND, when connecting to the WebSphere Deployment Manager. Note: This value will only appear for WebSphere ND.	
Online JVM Batch Server Enabled	BATCHENABLED	When starting a web application server JVM, this property can be set to "true" to allow the on-line application server to also act as a batch worker in the grid. Default value: false Note: This functionality should only be used in low volume environments.	

Menu Option	Name Used in Documentation	Usage	Customer Value Install
Online JVM Batch Number of Threads	BATCHTHREADS	The maximum number of batch processing threads to be executed within a worker JVM when no explicit Distributed Thread Pool is specified. The "DEFAULT" distributed thread pool is used by the batch-scheduling daemon when it initiates processing on batch jobs (typically added via the online system) where no thread pool is specified). Default value: 5 Note: This will be only used and activated when BATCHENABLED is set to true.	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	In a distributed batch environment, this property can be set to "true" to allow a worker JVM to host the batch scheduling daemon. The daemon accepts online batch submissions requests and automatically submits the work for them. Valid values: true, false Default value: false Note: This will be only used and activated when BATCHENABLED is set to true.	
JMX Enablement System User ID	BSN_JMX_SYSUSER	Example value: user This value is optional.	
JMX Enablement System Password	BSN_JMX_SYSPASS	Example value: admin Note: This value will be saved in encrypted format. This value is optional.	
RMI Port number for JMX Business	BSN_JMX_RMI_PORT_PERFORMACE	JMX Port for business application server monitoring. This needs to be set to an available port number on the machine. This value is optional.	

Menu Option	Name Used in Documentation	Usage	Customer Value Install
Online JVM Batch Number of Threads	BATCHTHREADS	The maximum number of batch processing threads to be executed within a worker JVM when no explicit Distributed Thread Pool is specified. The "DEFAULT" distributed thread pool is used by the batch-scheduling daemon when it initiates processing on batch jobs (typically added via the online system) where no thread pool is specified). Default value: 5 Note: This will be only used and activated when BATCHENABLED is set to true.	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	In a distributed batch environment, this property can be set to "true" to allow a worker JVM to host the batch scheduling daemon. The daemon accepts online batch submissions requests and automatically submits the work for them. Valid values: true, false Default value: false Note: This will be only used and activated when BATCHENABLED is set to true.	
JMX Enablement System User ID	BSN_JMX_SYSUSER	Example value: user This value is optional.	
JMX Enablement System Password	BSN_JMX_SYSPASS	Example value: admin Note: This value will be saved in encrypted format. This value is optional.	
RMI Port number for JMX Business	BSN_JMX_RMI_PORT_PERFORMACE	JMX Port for business application server monitoring. This needs to be set to an available port number on the machine. This value is optional.	

Menu Option	Name Used in Documentation	Usage	Customer Value Install
RMI Port number for JMX Web	WEB_JMX_RMI_PORT_PERFORMACE	JMX Port for web application server monitoring This needs to be an available port number for the environment running on the machine. This value is optional.	
GIS Service Running on the same Web Server	GIS	Geographical information (GEOCODING) - GIS Service running on the same web application server Valid values: true, false This value is optional.	
GIS Service URL	GIS_URL	This is the URL of the external web server. Note: This value will be only be used when GIS is set to true. This value is optional.	
GIS WebLogic System User ID	GIS_WLSYSUSER	GIS WebLogic System User ID Note: This value will be only be used when GIS is set to true. This value is optional.	
GIS WebLogic System Password	GIS_WLSYSPASS	GIS WebLogic System Password. Note: This value will be only be used when GIS is set to true. This value is optional.	
Online Display Software Home	ONLINE_DISPLAY_HOME	The location of the Online Display Software installation directory. This value is optional.	
Server Express COBOL Home Directory	SERVER_EXPRESS_COBDIR	Server Express COBOL Home Directory Note: On Windows platforms this directory path will be used in short format. This value will need to be populated when there is CM COBOL Code that needs to be compiled.	

Advanced Environment Memory Configuration

```
51. Advanced Environment Memory Configuration
       JVM Child Memory Allocation:                          512
       JVM Child Additional Options:
       Web Application Java Initial Heap Size:               1024
       Web Application Java Max Heap Size:                   1024
       Web Application Additional Options:
       Ant Min Heap Size:                                    200
       Ant Max Heap Size:                                    800
       Ant Additional Options:
       Thread Pool Worker Java Min Heap Size:                512
       Thread Pool Worker Java Max Heap Size:                1024
       Thread Pool Worker Java Max Perm Size:                192
       Thread Pool Worker Additional Options:
       Additional Runtime Classpath:
       Release Cobol Thread Memory Options:
-Dspl.runtime.cobol.remote.releaseThreadMemoryAfterEachCall=...
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
JVM Child Memory Allocation	JVMMEMORYARG	Heap size for the JVM Child. Default value: 512	
JVM Child Additional Options	JVM_ADDITIONAL_OPT	Additional JVM options that are passed to the Child JVM. Note: For WebLogic installation only.	
Web Application Java Initial Heap Size	WEB_MEMORY_OPT_MIN	Initial heap size for the application server. Default value: 1024 Note: For WebLogic installation only.	
Web Application Java Max Heap Size	WEB_MEMORY_OPT_MAX	Maximum heap size for the application server. Default value: 1024 Note: For WebLogic installation only.	
Web Application Java Max Perm Size	WEB_MEMORY_OPT_MAXPERMSIZE	Maximum Perm Size for the application server. Default value: 500MB (Linux, Solaris) 300MB (Windows) Note: For WebLogic installation only.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Application Additional Options	WEB_ADDITIONAL_OPT	Additional options that will be passed in to the web application server JVM. Optional Entry. Note: For WebLogic installation only.	
Ant Min Heap Size	ANT_OPT_MIN	Minimum Heap Size passed to ANT JVM. Default value: 200	
Ant Max Heap Size	ANT_OPT_MAX	Maximum Heap Size passed to ANT JVM. Default value: 800	
Ant Additional Options	ANT_ADDITIONAL_OPT	Additional options that are passed into the ANT JVM.	
Thread Pool Worker Java Min Heap Size	BATCH_MEMORY_OPT_MIN	Minimum heap size passed to the Thread Pool Worker. Default value: 512	
Thread Pool Worker Java Max Heap Size	BATCH_MEMORY_OPT_MAX	Maximum heap size passed to the Thread Pool Worker. Default value: 1024	
Thread Pool Worker Java Max Perm Size	BATCH_MEMORY_OPT_MAXPERMSIZE	Maximum perm size passed to the Thread Pool Worker Default value: 192	
Thread Pool Worker Additional Options	BATCH_MEMORY_ADDITIONAL_OPT	Additional Memory Options passed into the Thread Pool Worker. This is an optional free form field.	
Additional Runtime Classpath	ADDITIONAL_RUNTIME_CLASSPATH	Additional Classpath Options passed in when starting the WebLogic JVM Note: For WebLogic installation only. This is an optional value.	
Release Cobol Thread Memory Options	REL_CBL_THREAD_MEM	Allow for child JVMs to be optionally configured to release thread-bound memory when each thread is returned to its thread pool. This will increase the number of memory allocations and memory free calls performed by the Microfocus runtime. It will also lower the amount of C-heap memory consumed by child JVMs. Valid values: true, false Default value: false	

Advanced Web Application Configuration

```
52. Advanced Web Application Configuration
       WebLogic SSL Port Number:
       WebLogic Console Port Number:
       WebLogic Additional Stop Arguments:
       Batch Cluster URL:
       Strip HTML Comments:                                false
       Authentication Login Page Type:                     FORM
       Web Form Login Page:                             /loginPage.jsp
      Web Form Login Error Page:                     /formLoginError.jsp
      Application Viewer Form Login Page:                 /loginPage.jsp
      Application Viewer Form Login Error Page:      /formLoginError.jsp
       Help Form Login Page:                            /loginPage.jsp
      Help Form Login Error Page:                     /formLoginError.jsp
       Web Security Role:                                 cisusers
       Web Principal Name:                                cisusers
       Application Viewer Security Role:                  cisusers
       Application Viewer Principal Name:                 cisusers
       This is a development environment:                 false
       Preload All Pages on Startup:                      false
       Maximum Age of a Cache Entry for Text:             28800
       Maximum Age of a Cache Entry for Images:           28800
       JSP Recompile Interval (s):                        43200
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
WebLogic SSL Port Number:	WEB_WLSSPORT	The port number assigned to WebLogic Secure Sockets connection. This is the port number that is used for Secure Sockets connecting to the WebLogic server. The Secure Sockets implementation is disabled in the default configuration. For Production additional actions are required. Do NOT run Production with Demo certificates Refer to the WLS installation guide - Configuring Identity and Trust When this value is populated http will be disabled. Example value: 6501 Note: For WebLogic installation only. This value is optional.	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
WebLogic Console Port Number	WLS_ADMIN_PORT	The port number assigned to WebLogic Console connection. This is the port number that is used for Secure Sockets connecting to the WebLogic Console server. Note: For WebLogic installation only. This value is optional.	
WebLogic Additional Stop Arguments	ADDITIONAL_STOP_WEBLOGIC	WebLogic Additional Stop Arguments This value is required when running the WebLogic Console Port Number and the Application using SSL. Example values: -Dweblogic.security.TrustKeyStore=DemoTrust -Dweblogic.security.TrustKeystoreType=CustomTrust Note: For Production additional actions are required. Do NOT run Production with Demo certificates Refer to the WLS installation guide - Configuring Identity and Trust Note: For WebLogic installation only. This is an optional value.	
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	Example: service:jmx:rmi:///jndi/rmi://[host]:[TPW JMX port]/oracle/ouaf/batchConnector	
StripHTMLComments: false	STRIP_HTML_COMMENTS	Stripping HTML (and JavaScript) comments will increase the security of the system. Default value: false Valid values: true, false	
Authentication Login Page Type	WEB_WLAUTHMETHOD	Specifies which authentication mode should be used. To switch off OUAF Login Page enter: BASIC Valid values: FORM, BASIC Default value: FORM	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Web Form Login Page	WEB_FORM_LOGIN_PAGE	Specify the jsp file used to login into the application. Default value: /loginPage.jsp	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	Specify the jsp file used when there is an error when logging into the application. Default value: /formLoginError.jsp	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_PAGE	Specify the jsp file used to login into the application. Default value: /loginPage.jsp	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE	Specify the jsp file used when there is an error when logging into the application. Default value: /formLoginError.jsp	
Help Form Login Page	WEB_HELP_FORM_LOGIN_PAGE	Specify the jsp file used to login into the application. Default value: /loginPage.jsp	
Help Form Login Error Page	WEB_HELP_FORM_LOGIN_ERROR_PAGE	Specify the jsp file used when there is an error when logging into the application. Default value: /formLoginError.jsp	
Web Security Role	WEB_PRINCIPAL_NAME	Specify the name of the security role. Default value: cisusers	
Web Principal Name	WEB_PRINCIPAL_NAME	Specify the name of a principal that is defined in the security realm. Default value: cisusers	
Application Viewer Security Role	WEB_APPVIEWER_ROLE_NAME	Specify the name of the security role Default value: cisusers	
Application Viewer Principal Name	WEB_APPVIEWER_PRINCIPAL_NAME	Specify the name of a principal that is defined in the security realm. Default value: cisusers	

Menu Option	Name Used in Documentation	Usage	Customer Install Value
This is a development environment	WEB_ISDEVELOPMENT	If the value is "true", the web application may be used for application development, which will trigger certain generation processes. If the value is "false" the environment will be used as a runtime environment. When you choose "true" (development environment) the startup preload pages will be disabled, and the application security will be less strict. This value also controls the amount of logging information written to the application log files. Valid values: true, false Default value: false	
Preload All Pages on Startup	WEB_PRELOADALL	This controls if the pages should be pre-loaded during the startup of the application or not. Valid values: true, false Default value: false	
Maximum Age of a Cache Entry for Text	WEB_MAXAGE	Default value: 28800	
Maximum Age of a Cache Entry for Images	WEB_MAXAGEI	Default value: 28800	
JSP Recompile Interval (s)	WEB_wlpageCheckSeconds	Default value: 43200	

Advanced Web Application Configuration

```
53. OIM Configuration Settings
     SPML SOAP Trace Setting:                                  false
     SPML IDM Schema Name:                                     F1-IDMUser
     SPML OIM Name Space:      http://xmlns.oracle.com/OIM/provisioning
     SPML OIM Enclosing Element:                               SOAPElement
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_DEBUG_SETTING	Name of Oracle Identity Manager library for debug Default value: false Valid values: true, false	
SPML IDM Schema Name	OIM_SPML_UBER_SCHEMA_NAME	Name of Oracle Identity Manager library for schema Defautlt value: F1-IDMUser	
SPML OIM Name Space	OIM_SPML_NAME_SPACE	Default Namespace for Oracle Identity Manager integration Default value: http://xmlns.oracle.com/OIM/provisioning	
SPML OIM Enclosing Element	OIM_SPML_SOAP_ELEMENT	Default top level SOAP Element name for Oracle Identity Manager integration Default value: sOAPElement	

Keystore Options

```
54. Keystore options
(if keystore options are modified, you must run initialSetup.sh|cmd -k
in order to recreate the keystore)
       Store Type:                                          JCEKS
       Alias:                                               ouaf.system
       Alias Key Algorithm:                                 AES
       Alias Key Size:                                      128
       HMAC Alias:                                  ouaf.system.hmac
       Padding:                                          PKCS5Padding
       Mode:                                                CBC
```

Menu Option	Name Used in Documentation	Usage	Customer Install Value
Store Type	KS_STORETYPE	The keystore type. By default this is set to JCEKS.	
Alias	KS_ALIAS	The alias used to encrypt/decrypt passwords by the Oracle Utilities Application Framework to access the keystore. By default this is set to ouaf.system.	
Alias Key Algorithm	KS_ALIAS_KEYALG	The algorithm to be used by the KS_ALIAS entry in keystore to encrypt the passwords. By default this is set to AES.	
Alias Key Size	KS_ALIAS_KEYSIZE	The strength of the keystore for the KS_ALIAS entry. By default this is set to 128.	
HMAC Alias	KS_HMAC_ALIAS	The HMAC alias used by the Encryption Feature Type of the Oracle Utilities Application Framework. By default this is set to ouaf.system.hmac.	
Padding	KS_PADDING	The key padding algorithm used for keystore. By default this is set to PKCS5Padding.	
Mode	KS_STOREPASS_FILE	The keystore Password file.	

Oracle Public Sector Revenue Management 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, as described in **Chapter 9**: **Installing the Application Server Component of Oracle Public Sector Revenue Management**

```
************************************
* Environment Configuration <Environment_Name> *
************************************

 2. Business Application Server Configuration
       JVM Child Process Starting Port Number:
       Number of JVM Child Processes:                    2

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

Choose option (2, <P> Process, <X> Exit):
```

Menu Option	Name used in this Documentation	Usage	Customer Install
JVM Child process starting Port Number	BSN_RMIPORT	JVM Child process starting Port Number Example Value: 6503	
Number of JVM Child processes	BSN_JVMCOUNT	Default: 2	

Chapter 5

Installing the Database

Please review Chapter 1 of this guide and then follow the steps for installing the database as described in the *Oracle Public Sector Revenue Management Database Administrator's Guide.*

Chapter 6

Installing Application Server Prerequisite Software

This chapter describes the software that needs to be installed for each of the supported operating system and application server combinations. The sections for this chapter are:

- **AIX 7.1 Application Server**
- **Oracle Linux 5.8 or 6.3 Application Server**
- **Solaris 11 Application Server**
- **Windows 2008 Application Server**

AIX 7.1 Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
AIX 7.1 (64-bit)	POWER 64-bit	Oracle WebLogic 11gR1 (10.3.6) 64-bit version IBM WebSphere Basic (8.5.0.1) 64-bit version IBM WebSphere ND (8.5.0.1) 64-bit version

Web/Application Server Tier

AIX 7.1 Operating System 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, 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 stack size limit to 50 MB or more in the user profile startup script for cissys user:

```
ulimit -s 51200
```

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. WebSphere Basic and WebSphere Network Deployment can be installed according to the requirements at your site.

Oracle Client 11.2.0.3 or 12.1.0.1.0 — Runtime Option

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.

IBM Java Software Development Kit version 6.0 SR10 64-bit

Installation of Java is a prerequisite for using Oracle WebLogic as a web 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.

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Public Sector Revenue Management.

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/
   ```

   Click the "4.1.0.Final" link to download the zip file.

3. Extract the contents of the archive file:

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

   Note: You will need to have Java JDK installed on the machine used to (un)jar the Hibernate package. Please install the JDK that is supported for the install on your platform to be able to use the jar command.

4. 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
   ```

IBM WebSphere Basic (8.5.0.1) 64-bit

WebSphere must be purchased and downloaded from IBM. It must be installed and configured prior to the PSRM installation. This web application server will run as a 64-bit application.

A single WebSphere server represents a single Oracle Public Sector Revenue Management environment. You can install multiple environments on a single WebSphere Installation by creating additional WebSphere servers. Refer to the Chapter **Configuring WebSphere Application Server** for preinstallation steps.

IBM WebSphere Network Deployment (8.5.0.1) 64-bit

WebSphere Network Deployment must be purchased and downloaded from IBM. It must be installed and configured prior to the PSRM installation. This web application server will run as a 64-bit application.

A single WebSphere ND server represents a single PSRM environment. You can install multiple environments on a single WebSphere Installation by creating additional WebSphere servers. Refer to the Chapter **Configuring the WebSphere Application Server** for preinstallation steps.

Oracle WebLogic 11gR1 (10.3.6) 64-bit

Note: The Adapter for Echelon requires Oracle WebLogic version 10.3.4.

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 11gR1 (10.3.6).

Micro Focus Server 5.1 WrapPack 8

Micro Focus Server is required on the tier that will be hosting the application server where COBOL application code will be deployed.

Micro Focus Server must be installed in the following directory:

/opt/SPLcobAS51WP8

See the "Micro Focus" section in the *Quick Install Guide* for more information on the installation and licensing of this product.

Oracle Linux 5.8 or 6.3 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	Chipsets	Application Server
Oracle Linux 5.8 or 6.3 (64-bit)	x86_64	Oracle WebLogic 11gR1 (10.3.6) 64-bit version

Web/Application Server Tier

Oracle Linux 5.8 or 6.3 Operating System 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, 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 stack size limit to 50 MB or more in the user profile startup script for cissys user:

```
ulimit -s 51200
```

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
```

Note: When working with Oracle Linux 6 and above as an operating system, you will need to create a symbolic link, /usr/bin/ksh pointing to /bin/ksh

Security Configuration

Various options exist 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 Client 11.2.0.3 or 12.1.0.1.0 — Runtime Option

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.

Oracle Java Development Kit Version 6.0 Update 31 or Later, 64-bit

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

http://www.oracle.com/technetwork/java/archive-139210.html

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.

(Optional) Oracle JRockit 6 — R28.2.7

Note: Oracle JRockit can only be used for Web Java Home. You will still need to install the Oracle Java Development Kit for the Child JVM Home.

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

http://www.oracle.com/technetwork/middleware/jrockit/downloads/index.html

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

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Public Sector Revenue Management.

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/
   ```

   Click the "4.1.0.Final" link to download the zip file.

3. 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. Be sure to install the JDK that is supported for your platform.

4. 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
   ```

Oracle WebLogic 11gR1 (10.3.6) 64-bit

Note: The Adapter for Echelon requires Oracle WebLogic version 10.3.4.

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 11gR1 (10.3.6).

Micro Focus Server 5.1 WrapPack 8

Micro Focus Server is required on the tier that will be hosting the application server where COBOL application code will be deployed.

Micro Focus Server must be installed in the following directory:

/opt/SPLcobAS51WP8

See the "Micro Focus" section in the *Quick Install Guide* for more information on the installation and licensing of this product.

Solaris 11 Application Server

This section describes the software requirements for operating the application using the Sun Solaris 10 application server.

Supported Application Servers

Operating System	Chipsets	Application Server
Solaris 11 (64-bit)	SPARC	Oracle WebLogic 11gR1 (10.3.6) 64-bit version

Web/Application Server Tier

Solaris 10 Operating System 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, 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 stack size limit to 50 MB or more in the user profile startup script for cissys user:

```
ulimit -s 51200
```

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 exist 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 Client 11.2.0.3 or 12.1.0.1.0 — Runtime Option

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.

Oracle Java Development Kit Version 6.0 Update 31 or Later, 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:

http://www.oracle.com/technetwork/java/archive-139210.html

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.

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Public Sector Revenue Management.

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/`

   Click the "4.1.0.Final" link to download the zip file.

3. 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. Be sure to install the JDK that is supported for your platform.

4. 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
```

Oracle WebLogic 11gR1 (10.3.6) 64-bit

Note: The Adapter for Echelon requires Oracle WebLogic version 10.3.4.

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 11gR1 (10.3.6).

Micro Focus Server 5.1 WrapPack 8

Micro Focus Server is required on the tier that will be hosting the application server where COBOL application code will be deployed.

Micro Focus Server must be installed in the following directory:

/opt/SPLcobAS51WP8

See the "Micro Focus" section in the *Quick Install Guide* for more information on the installation and licensing of this product.

Windows 2008 Application Server

This section describes the software requirements for operating the application using the Windows application server.

Supported Application Servers

Operating System	Chipsets	Application Server
Windows Server 2008 R2 (64-bit)	x86_64	Oracle WebLogic 11gR1 (10.3.6) 64-bit version

Web/Application Server Tier

Oracle Client 11.2.0.3 or 12.1.0.1.0 — Runtime Option

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.

Oracle Java Development Kit version 6.0 Update 31 or Later, 64-bit

This software is required for the Oracle WebLogic Installation.

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

http://www.oracle.com/technetwork/java/archive-139210.html

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.

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Public Sector Revenue Management.

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/
   ```

   Click the "4.1.0.Final" link to download the zip file.

3. 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. Be sure to install the JDK that is supported for your platform.

4. 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%
```

Oracle WebLogic 11gR1 (10.3.6) 64-bit

Note: The Adapter for Echelon requires Oracle WebLogic version 10.3.4.

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 11gR1 (10.3.6).

Micro Focus Server 5.1 WrapPack 8

Micro Focus Server is required on the tier that will be hosting the application server where

COBOL application code will be deployed.

See the "Micro Focus" section in the *Quick Install Guide* for more information on the installation and licensing of this product.

Chapter 7

Configuring the WebSphere Application Server

Note: This section applies only to installations using WebSphere as an application server.

This section describes tasks that you should complete before you install the Oracle Utilities Application Framework. It also describes configuration tasks you should complete after installing Oracle Public Sector Revenue Management. It includes the following:

- **Configuring WebSphere Basic**
- **Configuring WebSphere Network Deployment**

Configuring WebSphere Basic

Preinstallation Tasks

This section describes tasks that you should complete to configure a WebSphere Basic application server before you install the Oracle Utilities Application Framework.

> **Note:** When working within the WebSphere console make sure to apply and save your changes to the Master Configuration when appropriate.

Setting of WebSphere Security

There are several security configuration options within WebSphere. In a production environment you must use the security implementation appropriate for your security requirements. During the Release cycle we used the User account repository of the Federated repository. The following procedures describe how to apply these security settings.

> **Note:** Refer to the WebSphere Application Server documentation for more details.

1. Start the WebSphere Administrative Console and log in.
2. Go to **Security, Global security.**
   - Check **Enable administrative security.**
   - Check **Enable application security.**
   - Select **Federated repositories** from the Available realm definitions
3. Click **Apply.**

Setting WebSphere Application Groups

1. Start the WebSphere Administrative Console and log in.
2. Go to **Users and Groups - Manage Groups**.

   Create the group name of cisusers (default group).
3. Click **Create.**

Setting WebSphere Application Users

1. Start the WebSphere Administrative Console and log in.
2. Go to **Users and Groups - Manage Users.**
   - Create the user Id of SYSUSER (example user)
   - Add the Group Membership of cisusers (created in the previous step) to the user.
3. Click **Create.**

Setting WebSphere JNDI Users

1. Start the WebSphere Administrative Console and log in.
2. Go to **Users and Groups, Manage Users**.
   - Create the user id of JNDI (example user).
   - Add the Group Membership of cisusers (created in the previous step) to the JNDI user, created in this step.
3. Click **Create.**

Setting WebSphere JNDI Users - CORBA Naming Service Users

1. Start the WebSphere Administrative Console and log in.

2. Go to **Environment, Naming, CORBA Naming Service Users**.

- Add the user id of JNDI (example user).
- Highlight all of the Roles (Cos Naming Read, Cos Naming Write, Cos Naming Create, Cos Naming Delete)

3. Click **Apply.**

   Note: Prior to this step you will need to restart the server1 since when adding CORBA Naming Service Users, the User is not recognized.

4. Note the values for JNDI User and Password. The Oracle Utilities Application Framework will prompt you for this information during the installation.

Creation of Additional Servers in WebSphere - Sample Script

You must also provide the name of servers during OUAF installation. You can use the following sample script to create additional servers using the wsadmin.sh tool.

Note: There are several other ways to accomplish this task.

1. Initialize a wsadmin.sh session:

```
<$WAS_HOME>/bin/wsadmin.sh -host localhost -port
 <SoapConnectorPort> -conntype SOAP -username
 <webSphereUserName> -password <webSphereUserPassword>
```

   Note: Substitute $WAS_HOME, webSphereUserName, SoapConnectorPort, webSphereUserPassword, with values that are appropriate for your installation:

   For example:

```
/ouaf/IBM/WebSphere85/AppServer/bin/wsadmin.sh -host
localhost -port
8889 -conntype SOAP
```

2. Create the server instance:

```
<wsadmin> $AdminTask createApplicationServer
<nodeName> {-name <serverName>}
```

Setting General Server Properties

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers,** and then select **Application Servers.**
3. Select your server name.
4. Under the section General Properties.
   - Deselect **Parallel start**.
   - Deselect **Run in development mode.**
5. Click **OK.**
6. Click **Save** to commit the setting.

Enabling SOAP Communication with WebSphere

The OUAF configuration scripts communicate with WebSphere as a SOAP client by using Jython commands to perform environment maintenance (for example, stop, start, deploy, undeploy).

To enable SOAP communication with WebSphere:

1. In a text editor, open the following file:

$WAS_HOME/profiles/<PROFILE_NAME>/properties/soap.client.props

Edit the property lines as follows:

- com.ibm.SOAP.requestTimeout=0
- com.ibm.SOAP.loginUserid=< WebSphere_User_Id >
- com.ibm.SOAP.loginPassword=< WebSphere_Password >

Note: Refer to IBM WebSphere Application Server documentation for more details.

1. If you want to encode the password in the soap.client.props file, then run the PropFilePasswordEncoder command from the $WAS_HOME/profiles/<PROFILE_NAME>/bin directory.

   This command is specific to IBM WebSphere Application Server. It encodes passwords located in plain-text property files.

2. Save and close the file.

Creation of Additional Servers in WebSphere - Sample Script

You must also provide the name of servers during the installation. You can use the following sample script to create additional servers using the wsadmin.sh tool.

Note: There are several other ways to accomplish this task.

1. Initialize a wsadmin.sh session:

   <$WAS_HOME>/bin/wsadmin.sh -host localhost -port <SoapConnectorPort> -conntype SOAP -username <webSphereUserName> -password <webSphereUserPassword>

   Note: Substitute $WAS_HOME, webSphereUserName, SoapConnectorPort, webSphereUserPassword, with values that are appropriate for your installation:

   For example: /ouaf/IBM/WebSphere85/AppServer/bin/wsadmin.sh -host localhost -port 8889 -conntype SOAP

2. Create the server instance:

   wsadmin> $AdminTask createApplicationServer <nodeName> {-name <serverName>}

Obtaining the Bootstrap Port and WC_defaulthost

You must also provide these port numbers during OUAF installation. Obtain the bootstrap port number and the WC_defaulthost by using the WebSphere administrative console.

Note: The WebSphere application server1 must be running to obtain the bootstrap port number and the WC_defaulthost port number.

To view the bootstrap port number and the WC_defaulthost:

1. Log on to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers, <server_name>** and then select **Ports** under **Communications.**

   The bootstrap port is displayed as BOOTSTRAP_ADDRESS.

   The WC_defaulthost is displayed as WC_defaulthost.

3. Note the values for WC_defaulthost and BOOTSTRAP_ADDRESS. The Oracle Utilities Application Framework will prompt you for this information during the installation.

Set Up a Virtual Host for the Server

1. Select **Environment, Virtual Host, default_host,** and then select **Host Alias.**

2. Click **New.**

   Enter the following:

   - **Host Name:** *
   - **Port:** WC_defaulthost Port Number

Obtaining the WebSphere Node Name

You must also provide the node name during the installation. Obtain the node name by using the WebSphere administrative console.

> **Note:** The WebSphere application server must be running to obtain the bootstrap port number.

To obtain the node name:

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers, <server_name>.**

   Note: Take note of the value for the Node Name.

Installing Oracle Utilities Application Framework as a Non-Root User with IBM WebSphere Installed as Root

Installing Oracle Utilities Application Framework as a non-root user on a WebSphere application server running on AIX requires certain permissions. Prior to the installation, verify that the operating system user account installing the framework has write and execute permissions on the directories in which WebSphere will be installed.

Postinstallation Tasks

This sections describes tasks that you should complete after you have installed Oracle Public Sector Revenue Management on a WebSphere application server.

Setting Environment Entries.

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers.**
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to Environment Entries.
7. Click **New** and add the following Environment Entries:

   Name: SPLENVIRON

   Value: <$SPLENVIRON>

   Note: Substitute $SPLENVIRON with appropriate values for your installation.

   Name: SPLEBASE

   Value: < $SPLEBASE >

   Note: Substitute $SPLEBASE with appropriate values for your installation.

   Name: LIBPATH

Value: <$SPLEBASE >/runtime

Note: Substitute $SPLEBASE with appropriate values for your installation.

Note: You will need to restart the server_name before you attempt to start the application on the server.

8. Click **OK.**
9. Click **Save** to commit the setting.

Setting JVM Memory and Arguments

For Oracle Utilities Application Framework, JVM memory settings must be changed for production environments and/or when processing large volume in a nonproduction environment.

Perform the following steps to set the JVM memory size. The WebSphere application server must be running to set the memory size.

To set the JVM memory size:

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers.**
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to **Additional Properties,** and then click **Java Virtual Machine.**
7. Enter 1024 for **Minimum Heap Size.**
8. Enter 1024 for **Maximum Heap Size.**
9. Enter -Djava.security.auth.login.config=<$SPLEBASE>/splapp/config/java.login.config for Generic JVM arguments.

   Note: Substitute $SPLEBASE with appropriate values for your installation.

   You will need to restart the server_Name before you attempt to start the application on the server.
10. Click **OK.**
11. Click **Save** to commit the setting.

Setting Server Custom Properties.

The following custom properties have been need in the past to enable WebSphere Classloader to load the correct xalan.jar file.

To set the Custom Properties:

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers.**
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to **Additional Properties,** and then click **Java Virtual Machine.**
7. Go to **Additional Properties,** and then click **Custom Properties.**
8. Click **New.**

   Enter the following information:

- **Name**: javax.xml.transform.TransformerFactory
- **Value:** org.apache.xalan.processor.TransformerFactoryImpl

9. Click **OK.**
10. Click **Save** to commit the setting.

Setting the Web Container Custom Properties.

To set the Web Container Custom Properties:

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers.**
3. Select the server name.
4. Go to **Container Settings,** and then click **Web Container Settings.**
5. Select **Web container.**
6. Go to **Additional Properties,** and then click **Custom properties.**
7. Click **New.**

   Enter the following information:

   - **Name:** com.ibm.ws.webcontainer.invokefilterscompatibility
   - **Value:** true

8. Click **OK.**
9. Click **Save** to commit the setting.

Starting and Stopping WebSphere Servers

To start WebSphere use the $WAS_HOME/profiles/<profile_name>/bin/startServer.sh script. For example, run:

```
$WAS_HOME/profiles/<profile_name>/bin/startServer.sh <server_name>
```

To stop WebSphere, use the $WAS_HOME/profiles/<profile_name>/bin/stopServer.sh script. For example, run:

```
$WAS_HOME/profiles/<profile_name>/bin/stopServer.sh <server_name
```

> **Note:** The Oracle Utilities Application Framework utility **spl.sh** does not stop or start the WebSphere servers. It only stops and starts the Oracle Utilities Application Framework-based applications.

Deployment Using Supplied Script

The application deployment script is initialSetup.sh.-d, located in $SPLEBASE/bin (this script deploys both the SPLService.ear and SPLWeb.ear)

> **Note:** Before running the script ensure you have initialized the environment by running splenviron.sh

Deployment via the Admin Console

Follow these steps to deploy the application using the Admin Console:

Deployment Overview

The application needs to be deployed in the following order:

1. SPLService.ear
2. SPLWeb.ear

Note: The SPLService.ear must be successfully deployed before deploying SPLWeb.ear

Deploy SPLService.ear

1. Select the ear file to deploy.
   - Select **Applications, Install New Application.**
   - Select **Remote file system.**
   - Browse to the SPLService.ear or enter the full path to the file.
   - The ear files can be found under $SPLEBASE/splapp/applications.
   - Click **Next.**
2. Select **Option Fast Path - Prompt only when additional information is required.** Click **Next.**
3. On the Select installation options page ensure that **Deploy enterprise beans** is checked. Click **Next.**
4. Assign the module to the WebSphere server instance.

   When deploying an application from the console make sure you select the correct server and click **Apply.**
5. Review the summary page. Review the installation options.
6. Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.
7. Click **Save.** The save process can take more than 20 minutes.

Deploying SPLWeb.ear

1. Select the ear file to deploy.
   - Select **Applications, Install New Application.**
   - Select **Remote file system.**
   - Browse to the SPLWeb.ear or enter the full path to the file.
   - The ear files can be found under $SPLEBASE/splapp/applications.
   - Click **Next.**
2. Select **Option Fast Path - Prompt only when additional information is required.** Click **Next.**
3. Assign the module to the WebSphere server instance.

   When deploying an application from the console make sure you select the correct server and click Apply.
4. Review the summary page. Review the installation options.
5. Click **Finish** The application will then deploy. The deployment process takes about 5 minutes.
6. Click **Save.** The save process can take about more than 20 minutes.

Configure the Applications

You need to apply these steps to both the SPLWeb and SPLService applications unless specified.

1. Set the startup order of the applications (this applies only to SPLWeb):
   - Select the SPLWeb application from **Applications, Enterprise Applications.**
   - Select **Startup behavior.**
   - Change the startup order to 2.
   - Click **OK.**
   - Click **OK** and Save directly to master configuration.
2. Set the class loading order (for both SPLService.ear and SPLWeb.ear): Select Class loading and update detection.
   - Set Polling interval to 0.
   - Under Class loader order select Classes loaded with application class loader first. Click **OK** and Save to master configuration.
3. Set the module starting weight:
   - **SPLService only:** Set the Starting weight to 1.
   - **SPLWeb only:** For each module (.war) set the Starting weight to 10000 and change the Class loader order to Classes loaded with application class loader first
4. Set EJB JNDI names (this applies only to SPLService). Select Enterprise Java Bean Properties and enter the following values:
   - **EJB module:** SPLServiceBean
   - JNDI name for all interfaces
   - **Target Resource JNDI Name:** [Web Context Root]/servicebean
   - **EJB module:** TUGBULiteServiceBean
   - JNDI name for all interfaces
   - **Target Resource JNDI Name:** [Web Context Root]/liteservicebean
5. Click **Ok.**

Configure Application Security

After using the supplied script to deploy the application to WebSphere you will need to configure each application's security before starting the application.

Using the WebSphere administration console select **Applications, Application Types, WebSphere enterprise applications, <Business Server Application Name>, <server name>** (for example, SPLService-server2)**, Security role to user/group mapping.**

For role cisusers:

- Check **Select** and the click **Map Users:**
- Search for SYSUSER and add to the Selected users list.
- Click **OK.**

Note: Repeat the process for <Web Server Application Name>-<server name> (for example, SPLWeb-server2).

Restart the WebSphere Server

It is recommended to stop and then restart the WebSphere server.

If the application is deployed in server1 you can use the admin console to stop and start the server. If the application is deployed in another server you will need to use the scripts that are supplied with WebSphere (stopServer.sh, startServer.sh).

Note: WebSphere admin console runs under server1.

Application URL

The Web link to the WebSphere application will be:

```
http://<hostname>:<WC_default_port>/<context_root>/loginPage.jsp
```

For example, http://oracle:9081/ouaf/loginPage.jsp

Configuring WebSphere Network Deployment

Preinstallation Tasks

This section describes tasks that you should complete to configure a WebSphere ND application server before you install the Oracle Utilities Application Framework.

When working within the WebSphere Network Deployment (WebSphere ND) console make sure to apply and save your changes to the Master Configuration when appropriate.

Setting of WebSphere ND Security

There are several security configuration options within WebSphere ND. In a production environment you must use the security implementation appropriate for your security requirements. During the Release cycle we used the User account repository of the Federated repository. The following procedures describe how to apply these security settings.

> **Note:** Refer to WebSphere ND Application Server documentation for more details.

1. Start the WebSphere ND DPMGR Administrative Console and log in.
2. Go to S**ecurity, Global security.**
   - Check **Enable administrative security.**
   - Check **Enable application security.**
   - Select **Federated repositories** from the Available realm definitions.
3. Click **Apply.**

Setting WebSphere ND Application Groups

1. Start the WebSphere ND Administrative Console and log in.
2. Go to **Users and Groups - Manage Groups.**

   Create the group name of cisusers (default group).
3. Click **Create.**

Setting WebSphere ND Application Users

1. Start the WebSphere ND Administrative Console and log in.
2. Go to **Users and Groups - Manage Users**.
   - Create the user Id of SYSUSER (example user).
   - Add the Group Membership of cisusers (created in the previous step) to the user.
3. Click **Create.**

Setting WebSphere ND JNDI Users

1. Start the WebSphere Administrative Console and log in.
2. Go to **Users and Groups - Manage Users.**

   Create the user id of JNDI (example user).

   Add the Group Membership of cisusers to the user id of JNDI (created above)
3. Click **Create.**

Setting WebSphere ND JNDI Users - CORBA Naming Service Users

1. Start the WebSphere ND Administrative Console and log in.
2. Go to **Environment, Naming - CORBA Naming Service Users.**

- Add the user id of JNDI (example user).
- Highlight all of the Roles (Cos Naming Read, Cos Naming Write, Cos Naming Create, Cos Naming Delete).

3. Click **Apply.**

   Note: the values for JNDI User and Password. The Oracle Utilities Application Framework will prompt you for this information during the installation.

Setting General Server Properties.

1. Connect to the WebSphere ND DPMGR administrative console
2. Select **Servers, Server Types, WebSphere application servers.**
3. Select the your server name.
4. Under the section General Properties.
   - Deselect **Parallel start.**
   - Deselect **Run in development mode.**
5. Click **OK.**
6. Click **Save** to commit the setting.

Enabling SOAP Communication with WebSphere ND

The OUAF configuration scripts communicates with WebSphere ND Deployment Manager as a SOAP client by using Jython commands to perform environment maintenance (e.g. stop, start, deploy, undeploy).

To enable SOAP communication with WebSphere ND:

1. In a text editor, open the following file:

   ```
   $WAS_HOME/profiles/<PROFILE_NAME>/properties/soap.client.props
   ```

   Edit the property lines as follows:

   - com.ibm.SOAP.requestTimeout=0
   - com.ibm.SOAP.loginUserid=< WebSphere_User_Id >
   - com.ibm.SOAP.loginPassword=< WebSphere_Password >

     Note: Refer to IBM WebSphere Application Server documentation for more details,

2. If you want to encode the password in the soap.client.props file, then run the PropFilePasswordEncoder command from the $WAS_HOME/profiles/<PROFILE_NAME>/bin directory.

   This command is specific to IBM WebSphere ND Application Server, and it encodes passwords located in plain-text property files.

3. Save and close the file.

Creation of Additional Servers in WebSphere ND

You must also provide the server names during the installation.

Note: There are several other ways to accomplish this task.

1. Select **Servers, New Servers.**

   This will lead you through a list of steps for creating a new server.

2. Select server type from the drop down list: WebSphere application server. Click **N.ext**

3. Select node from the drop down list that has been created for to host the WebSphere server.

   Enter the Server name

   Note: Both the Node Name and Server Name will be needed for during the OUAF installation process.

4. Select a server template of default

   Click Next

5. Check the box to Generate Unique Ports. Click Next

6. Confirm new server. Click Finished

Obtaining the Bootstrap Port and WC_defaulthost

You must also provide these port numbers during OUAF installation. Obtain the bootstrap port number and the WC_defaulthost by using the WebSphere ND administrative console.

Note: The WebSphere ND Deployment Manager server must be running to obtain the bootstrap port number and the WC_defaulthost port number

To view the bootstrap port number and the WC_defaulthost:

1. Log on to the WebSphere ND administrative console.

2. Select Servers, Application Servers, <server_name>, and then select **Ports** under Communication.

   The bootstrap port is displayed as BOOTSTRAP_ADDRESS. The WC_defaulthost is displayed as WC_defaulthost.

3. Note the values for WC_defaulthost and BOOTSTRAP_ADDRESS. The Oracle Utilities Application Framework will prompt you for this information during the installation.

Set up a New Virtual Host for your Server

1. Select **Environment, Virtual Host, default_host,** and then select **Host Alias.**

2. Click **New.**

3. Enter the following:

   - Host Name:
   - Port: WC_defaulthost Port Number

Obtaining the WebSphere ND Node Name

You must also provide the node name during OUAF installation. Obtain the node name by using the WebSphere ND administrative console.

Note: The IBM WebSphere ND application server must be running to obtain the bootstrap port number.

To obtain the node name:

1. Connect to the WebSphere ND administrative console

2. In the left pane, click **Servers.**

3. Click **Application Servers** under Servers.

4. Click the server instance (server_name, default) on the right section.

5. Click the **Runtime** tab.

   Note: The value for the Node Name.

   Note: If the value of State is not started, then restart the server instance.

Installing Oracle Utilities Application Framework as a Non-Root User with IBM WebSphere Installed as Root

Installing Oracle Utilities Application Framework as a non-root user on a IBM WebSphere ND application server running on AIX certain permissions.

Prior to attempting to install Oracle Utilities Application Framework as a non-root user on a IBM WebSphere ND application server running on AIX, verify that the operating system user account installing Oracle Utilities Application Framework has write and execute permissions on the directories in which IBM WebSphere ND will be installed.

Postinstallation Tasks

This sections describes tasks that you should complete after you have installed the Oracle Utilities Application Framework and Oracle Public Sector Revenue Management on a WebSphere application server.

Setting Environment Entries.

1. Connect to the IBM WebSphere ND administrative console.
2. Select **Servers** and then select **Application Servers.**
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to **Environment Entries.**
7. Click **New** and add the following Environment Entries:

   Add the following entries:

   Name: SPLENVIRON

   Value: <$SPLENVIRON>

   Note: Substitute $SPLENVIRON with appropriate values for your installation.

   Name: SPLEBASE

   Value: < $SPLEBASE >

   Note: Substitute $SPLEBASE with appropriate values for your installation.

   Name: LIBPATH

   Value: <$SPLEBASE >/runtime

   Note: Substitute $SPLEBASE with appropriate values for your installation.

   Note: You will need to restart the server_name before you attempt to start the application on the server.
8. Click **OK.**
9. Click **Save** to commit the setting.

Setting JVM Memory and Arguments

For Oracle Utilities Application Framework, JVM memory settings must be changed for production environments and/or when processing large volume in a nonproduction environment.

Perform the following steps to set the JVM memory size. The IBM WebSphere ND application server must be running to set the memory size.

To set the JVM memory size:

1. Connect to the IBM WebSphere ND administrative console.
2. Select **Servers,** and then select **Application Servers.**
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to **Additional Properties,** and then click **Java Virtual Machine.**
7. Enter 1024 for **Minimum Heap Size.**
8. Enter 1024 for **Maximum Heap Size.**
9. Enter -Djava.security.auth.login.config=<$SPLEBASE>/splapp/config/java.login.config for Generic JVM arguments.

   Note: Substitute $SPLEBASE with appropriate values for your installation.

   You will need to restart the server_Name before you attempt to start the application on the server.
10. Click **OK.**
11. Click **Save** to commit the setting.

Setting Server Custom Properties.

The following custom properties have been need in the past to enable WebSphere ND Classloader to load the correct xalan.jar file.

To set the Custom Properties:

1. Connect to the WebSphere ND administrative console.
2. Select **Servers,** and then select Application Servers.
3. Select the server name.
4. Go to **Server Infrastructure,** and then click **Java and Process Management.**
5. Select **Process Definition.**
6. Go to **Additional Properties,** and then click **Java Virtual Machine.**
7. Go to **Additional Properties,** and then click **Custom Properties.**
8. Click **New.**

   Enter the following information:

   Name: javax.xml.transform.TransformerFactory

   Value: org.apache.xalan.processor.TransformerFactoryImpl
9. Click **OK.**
10. Click **Save** to commit the setting.

Setting Up the Web Container Custom Properties.

To set the Web Container Custom Properties:

1. Connect to the WebSphere ND administrative console.
2. Select **Servers,** and then select **Application Servers.**

3. Select the server name.
4. Go to **Container Settings,** and then click **Web Container Settings.**
5. Select Web container
6. Go to **Additional Properties,** and then click **Custom properties.**
7. Click **New.**

   Enter the following information:

   Name: com.ibm.ws.webcontainer.invokefilterscompatibility

   Value: true
8. Click **OK.**
9. Click **Save** to commit the setting.

Starting and Stopping WebSphere ND servers

You can use the WebSphere ND console to stop and start the servers. You can also use the command line scripts supplied with WebSphere ND.

> **Note:** The Oracle Utilities Application Framework utility **spl.sh** does not stop or start the IBM WebSphere ND servers. It only stops and starts the Oracle Public Sector Revenue Management applications.

Deployment Using Supplied Script

The application deployment script is initialSetup.sh.-d, located in $SPLEBASE/bin (this deploys both the SPLService.ear and SPLWeb.ear).

> **Note:** Before running the script ensure you have initialized the environment by running splenviron.sh

Deployment via the Admin Console

Follow these steps to deploy the application using the Admin Console:

Deployment Overview

The application needs to be deployed in the following order:

1. SPLService.ear
2. SPLWeb.ear

   > **Note:** The SPLService.ear must be successfully deployed before deploying SPLWeb.ear

Deploy SPLService.ear

1. Select the ear file to deploy.
   - Select **Applications, Install New Application.**
   - Select **Remote file system.**
   - Browse to the SPLService.ear or enter the full path to the file.
   - The ear files can be found under $SPLEBASE/splapp/applications.

   Click **Next.**
2. Select **Option Fast Path - Prompt only when additional information is required.**

   Click **Next.**
3. On the Select installation options page

Ensure **Deploy enterprise beans** is selected.

Click **Next.**

4. Assign the module to the IBM WebSphere ND server instance.

   When deploying an application from the console make sure you select the correct server and click **Apply.**

5. Review the summary page. Review the installation options

6. Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.

7. Click **Save.** The save process can take about more than 20 minutes.

Deploying SPLWeb.ear

1. Select the ear file to deploy.

   - Select **Applications, Install New Application.**
   - Select **Remote file system.**
   - Browse to the SPLWeb.ear or enter the full path to the file.
   - The ear files can be found under $SPLEBASE/splapp/applications.

   Click **Next.**

2. Select **Option Fast Path - Prompt only when additional information is required.**

   Click **Next.**

3. Assign the module to the IBM WebSphere ND server instance.

   When deploying an application from the console make sure you select the correct server and click **Apply.**

4. Review the summary page. Review the installation options

5. Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.

6. Click **Save.** The save process can take about more than 20 minutes.

Configure the Applications

You need to apply these steps to both the SPLWeb and SPLService applications unless specified.

1. Set the startup order of the applications (this applies only to SPLWeb):

   - Select the SPLWeb application from **Applications, Enterprise Applications.**
   - Select **Startup behavior.**
   - Change the startup order to 2.

   Click **OK.**

   Click **OK** and Save directly to master configuration.

2. Set the class loading order (for both SPLService.ear and SPLWeb.ear): Select Class loading and update detection.

   - Set Polling interval to 0.
   - Under Class loader order select Classes loaded with application class loader first. Click OK and Save to master configuration.

3. Set the module starting weight:

   - SPLService only - set the Starting weight to 1.

- SPLWeb only - for each module (.war) set the Starting weight to 10000 and change the Class loader order to Classes loaded with application class loader first

4. Set EJB JNDI names (this applies only to SPLService). Select Enterprise Java Bean Properties and enter the following values:
   - **EJB module:** SPLServiceBean
   - JNDI name for all interfaces
   - **Target Resource JNDI Name:** [Web Context Root]/servicebean
   - **EJB module:** TUGBULiteServiceBean
   - JNDI name for all interfaces
   - **Target Resource JNDI Name:** [Web Context Root]/liteservicebean
5. Click **Ok.**

Configure Application Security

After using the supplied script to deploy the application to IBM WebSphere ND you will need to configure each application's security before starting the application.

Using the IBM WebSphere ND administration console select **Applications, Enterprise Applications, Business-<server name>** (for example, SPLService-server2), **Security role to user/group mapping.**

For role cisusers:

- Check **All Authenticated.**
- Check **Select** and click **Look up users:**
- Search for SYSUSER and add to the Selected users list.
- Click **OK.**

  Note: Repeat the process for <Web Server Application Name>-<server name>(for example, SPLWeb-server2).

Restart the IBM WebSphere ND Server

It is recommended to stop and then restart the WebSphere ND server.

Application URL

The Web link to the IBM WebSphere ND application will be:

```
http://<hostname>:<WC_default_port>/<context_root>/loginPage.jsp
```

For example, http://oracle:9085/ouaf/loginPage.jsp

Chapter 8

Installing the Application Server Component of Oracle Utilities Application Framework

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

- **Installation Overview**
- **Preinstallation Tasks**
- **Installing Oracle Utilities Application Framework V4.2.0 Service Pack 3**

Installation Overview

This process replaces any previously delivered and installed version of the Oracle Utilities Application Framework Server. Before you proceed:

1. Make sure that you have installed all the required third-party software as described in **Chapter 6: Installing Application Server Prerequisite Software**.
2. Complete the database installation (refer to the *Oracle Public Sector Revenue Management Database Administrator's Guide*).
3. If you plan to upgrade a previously installed application server make a backup before you start a new installation.

The application server installation process of Oracle Public Sector Revenue Management consists of the following:

1. Installing Oracle Utilities Application Framework V4.2.0 Service Pack 3
2. Installing Oracle Public Sector Revenue Management

As a first step of the application server installation, download and install the framework application server. The installation process creates and configures the application server environment.

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.

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.

This section describes how to install a working Oracle Utilities Application Framework, 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 section **Supported Platforms**). You must complete the database installation before installing the application server.

Preinstallation Tasks

Hardware and Software Version Prerequisites

The section **Supported Platforms** 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 6: Installing Application Server Prerequisite Software 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 V4.2.0 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 6), 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 (i.e., 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 Framework environments operated by different Oracle Utilities Administrator user ids, you must complete each of the following installation steps for each Administrator user ID.

1. Log in to the application server host as the Oracle Utilities Application Framework (PSRM) administrator user ID (default cissys).
2. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   This directory must be located outside any current or other working Oracle Utilities Application Framework (PSRM) environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
3. Copy the file FW-V4.2.0.3.0-MultiPlatform.jar in the delivered package to a <TEMPDIR> on your host server.

Note: When you use FTP to transfer this file, remember to use the BINARY option for the FTP transfer.

4. Decompress the file:

```
cd <TEMPDIR>

jar -xvf FW-V4.2.0.3.0-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.

A subdirectory named "FW.V4.2.0.3.0" 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 (PSRM) 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.V4.2.0.3.0 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 installation process. The installation utility does not create a backup of existing environment.

Installing Oracle Utilities Application Framework V4.2.0 Service Pack 3

This section outlines the steps for installing the Oracle Utilities Application Framework.

Brief Description of the Installation Process

1. Log on as the Oracle Utilities Application Framework PSRM 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 6: Installing Application Server Prerequisite Software**.
3. Change directory to the <*TEMPDIR*>/FW.V4.2.0.3.0 directory.
4. Start the application installation utility by executing the appropriate script:

   UNIX: ksh ./install.sh

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

Detailed Description of the Installation Process

1. Log on to the host server as Oracle Utilities Application Framework (PSRM) 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 **Chapter 6: Installing Application Server Prerequisite Software**. You will need to obtain specific information for the install.
3. Change directory to the <*TEMPDIR*>/FW.V4.2.0.3.0 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 **Application Framework Installation and Configuration Worksheets** to complete this step.
5. Select menu item 50: Environment Installation Options.

   Use the completed Environment Installation Options Worksheet to complete this step. See **Application Framework 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.

6. 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 manual or electronic 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:
7. 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 **Planning the Installation** for settings and configuration.

Chapter 9

Installing the Application Server Component of Oracle Public Sector Revenue Management

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

- **Preinstallation Tasks**
- **Installing the Application**
- **Installing User Documentation**
- **Integrating Customer Modifications into this Release**
- **Operating the Application**

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

You *must* initialize the Framework environment. For detailed instructions see **Preparing for the Installation** on page 9-2.

Preinstallation Tasks

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

Installation Prerequisite

The Oracle Utilities Application Framework 4.2.0.3.0 and Oracle Utilities Application Framework patches must be installed prior to installing Oracle Public Sector Revenue Management 2.4.0.2.0.

Copying and Decompressing Install Media

The installation file is delivered in jar format for both UNIX and Windows platforms.

Oracle Public Sector Revenue Management is delivered as a separate installation package. Please refer to the **Supported Platforms** on page 3-3 for versions and installation details regarding the database and operating system. Also see **Chapter 6: Installing Application Server Prerequisite Software** for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework (PSRM) administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. 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.
3. Copy the file Release-PSRM-V2.4.0.2.0-<Platform>.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.
4. Decompress the file:

   ```
   cd <TEMPDIR>

   jar -xvf Release-PSRM-V2.4.0.2.0-<Platform>.jar
   ```

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

For both Unix and Windows platforms, a sub-directory named PSRM-V2.4.0.2.0 is created. 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 Utilities Application Framework (PSRM) 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-V2.4.0.2.0 directory.
2. Execute the install script:

   UNIX:

   Note: Ensure that you have the proper execute permission on install.sh.

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

   Windows:

   ```
   install.cmd
   ```

3. Choose option Y to proceed with the installation.
4. Enter the JVM port and the Number of Processes.
5. When you are finished with the configuration setup, choose option P.

If you are installing Oracle Public Sector Revenue Management with WebSphere Basic or WebSphere Network Deployment, once the install has finished successfully refer to **Chapter 7: Configuring the WebSphere Application Server** for the Post Installation Tasks.

Application Startup

1. To start the Oracle WebLogic environment, run the following command:

   UNIX:

   ```
   $ cd $SPLEBASE/bin
   $   ./spl.sh start
   ```

   Windows:

   ```
   C:\> cd %SPLEBASE%\bin
   C:\> spl.cmd start
   ```

   Follow the messages on the screen along with 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.

   You should postpone the startup process until you are done with post installation steps. Use the following utility to stop the environment:

   UNIX:

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

   Windows:

   ```
   C:\> cd %SPLEBASE%\bin
   C:\> spl.cmd start
   ```

Weblogic Application URL

The web link to the application will be:

http://<hostname>:<WC_default_port>/<context_root>/loginPage.jsp

For example, http://oracle:6500/ouaf/loginPage.jsp

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:

- F1: Oracle Utilities Application Framework Administration and Business Process Guides

Installing Standalone Online Help

You can also use the Oracle Public Sector Revenue Management online Help in standalone 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 Standalone Help Under Web Server

You can also install Oracle Public Sector Revenue Management online help as a standalone web application. You can use any supported web application server, for example, 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"
- For WebSphere Network Deployment, configure application.xml with module id="WebModule_help" and <web-uri>help.war</web-uri>

Access the documentation from the browser by the following URL:
http://<host name>:<port name>/<Web_Context>/<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:** Standalone 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.

Integrating Customer Modifications into this Release

In order to integrate customer modifications from previous releases into this version of PSRM, customer modifications must be reapplied to a new environment using the source code and database utilities provided with the OUAF software development kit. Refer to *OUAF 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.

Chapter 10

Upgrading to Oracle Public Sector Revenue Management Version 2.4.0.2.0

This section provides instructions for upgrading Oracle Public Sector Revenue Management 2.4.0.1.0 to version 2.4.0.2.0 This section includes:

- **Upgrading the Database**
- **Upgrading the Application**

Upgrading the Database

For instructions on upgrading the database component, please refer to the Oracle Public Sector Revenue Management *Database Administrator's Guide*. This guide is included in the Oracle Public Sector Revenue Management V2.4.0.2.0.zip file delivered with the package.

Upgrading the Application

> **Note:** This upgrade process is only applicable if the existing product version is 2.4.0.1.0.

To upgrade to this service pack, you must install the following components in the order mentioned below:

- Oracle Utilities Application Framework v4.2.0.3
- Oracle Public Sector Revenue Management v2.4.0.2.0

This section includes information on the following:

- **Upgrading to Oracle Utilities Application Framework v4.2.0.3.0**
- **Upgrading Oracle Public Sector Revenue Management**
- **Post-Upgrade Steps**
- **Operating the Application**

Upgrading to Oracle Utilities Application Framework v4.2.0.3.0

Ensure that the database component is successfully installed before proceeding with the steps below:

1. Create a <TEMPDIR> directory on the host server that is independent of any current or other working application environment.
2. Copy the delivered package zip file to <TEMPDIR> and unzip it. For example, the Linux copy for Framework V4.2.0.3.0 is "FW-V4.2.0.3.0-Multiplatform.zip".

   > **Note:** If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
3. Log in to the application server host server as the administrator user ID (default cissys).
4. Change directory:

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

   where <install_dir> is the location where the Oracle Public Sector Revenue Management application component is installed.
5. Initialize the Oracle Public Sector Revenue Management environment by running the appropriate command:

   UNIX:

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

   Windows:

   ```
   splenviron.cmd -e <ENV NAME>
   ```
6. If the environment is running, stop it by running the appropriate command:

   UNIX:

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

Windows:

```
spl.cmd stop
```

7. Ensure that you have executed splenviron.sh -e <$SPLENVIRON> prior to the installation process.

   Note: The installation utility DOES NOT create backup of installed files. You must backup <$SPLEBASE> before continuing with the rest of the installation utility.

8. Change directory to the <TEMPDIR>/FW-V4.2.0.3.0 directory and run the below script.

   UNIX:

   ```
   ./installSP.sh
   ```

   Windows:

   ```
   installSP.cmd
   ```

9. The installation utility informs that the Service Pack (v4.2.0.3.0) is about to be installed into the environment <$SPLENVIRON>.

10. The utility prompts you to press Enter to continue with the rest of the installation process of Oracle Utilities Application Framework v4.2.0 Service Pack 3.

Upgrading Oracle Public Sector Revenue Management

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 Oracle Utilities Application Framework 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. Go to the <TEMP>/PSRM.V2.4.0.2.0 folder

6. 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
```

7. The utility displays a message that you are about to install the product Oracle Public Sector Revenue Management into the environment <$SPLENVIRON> located at <$SPLEBASE>.

   Note: Ensure that you have executed splenviron.sh -e <$SPLENVIRON> prior to the installation process.

8. The installation utility asks you to confirm that you want to proceed with the installation process. Enter **Y**.

9. The installation process begins. The utility displays a warning that the product is already installed in the environment. You are asked to confirm whether you want to reinstall the product. Enter **Y.**

10. When you are done with the confirmation, proceed with the option **P**.

This completes the installation of Oracle Public Sector Revenue Management v2.4.0.2.0

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**.
7. Verify and review the log files to ensure that there are no errors during the upgrade process.

Operating the Application

At this point your installation of this service pack 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 11

Additional Tasks

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

- **Customizing Configuration Files**
- **Integrating Existing Customer Modifications**
- **Generating the Application Viewer**
- **Building Javadoc Indexes**
- **Configuring the Environment for Batch Processing**
- **Customizing the Logo**
- **Oracle Policy Automation**
- **WebLogic Production Server Considerations**
- **Setting Up an Application Keystore**
- **Updating the Hash Column on the User Table**

Customizing Configuration Files

To make customer modifications to configuration files, simply locate the configuration file you want to customize and edit it manually.

Configuration files are generated from delivered templates in the Oracle Utilities installation and are populated by values entered by the installation utility during the configuration process. In future upgrades of Oracle Utilities application software versions, some templates may be changed to reflect new software version requirements. If that happens, the upgrade process will back up your customized configuration file and regenerate a configuration file based on a new template. You will then need to review the new configuration file and reapply your changes if still applicable for the new version.

Configuration files that are part of a web application (e.g., web.xml, hibernate.properties) that is used during the installation process may not be edited directly.

To edit a configuration file:

1. Locate the file you want to customize in the directory `$SPLEBASE/etc/conf`.
2. Apply your changes.
3. Update the application war file with the latest changes by executing the following command:

   UNIX:

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

   Windows:

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

Integrating Existing Customer Modifications

If the installation utility was executed on a previously existing environment, it will preserve customer modifications according to the rules described in the Oracle Public Sector Revenue Management *Database Administrator's Guide*. In most cases, additional development or configuration actions need to be taken to adjust and integrate upgraded customer modifications to the new version.

> **Note:** All of the cm*.jar files that need to be applied to an applications server must be defined in the following CM jar structure file (an example is included in the SDK CM Packaging Tool):

Unix:

```
$SPLEBASE/structures/cm_jars_structure.xml
```

Windows:

```
%SPLEBASE%/structures/cm_jars_structure.xml
```

Refer to the Oracle Public Sector Revenue Management installation section of this document and to the SDK documentation for more information.

The templates delivered under the folder $SPLEBASE/templates (Unix) and %SPLEBASE%/templates (windows) will be overridden by the Oracle Utilities Application Server installation. However, by creating a copy of the template file with the same name but prefixed by "cm.". The cm copy will be preserved during an upgrade. You will need to review the new configuration file and apply your customized changes back if still applicable for the new version.

The templates contain user exits (special statements that allow to import external files during the template processing). Those user exits can be overridden by creating a copy of the user exit file with the same name but prefixed by "cm_". The cm copy will be customized.

Refer to the Oracle Public Sector Revenue Management Server Administration guide for more information.

Generating the Application Viewer

You may extend application viewer capabilities within an environment by generating additional items. The additional items that can be generated include algorithm type and related algorithm information, maintenance object information and data dictionary information.

To generate the additional items in the application viewer:

1. Shut down the environment.
2. Initialize a command shell:

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

   Unix:

   You will need to logon to your UNIX box as the Oracle Public Sector Revenue Management administrator (default cissys) and open a shell prompt. In the following example you should replace the variables

   $SPLEBASE with the Full directory name that you installed the application into

   and

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

   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\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

Note: You will need to redeploy the web ear file for WebSphere and WebSphere Network Deployment installations.

Building Javadoc Indexes

The following script rebuilds the Javadocs indexes in the application viewer java module. This is necessary after customer modifications (CM) have been applied to an environment.

Note: You will only need to run this script only if the customer modification includes Java code.

Windows:

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

UNIX:

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

Configuring the Environment for Batch Processing

See the *Batch 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>.gif 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 Public Sector Revenue Management application from the browser with the parameters: http://<hostname>:<port>/<Web Context>/ 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>.gif

UNIX:

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

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 MapViewer

This section describes how to configure a MapViewer data source for Oracle Utilities Mobile Workforce Management.

Before you can configure a MapViewer data source you must:

- Install Oracle Fusion Middleware MapViewer 11.1.1.2.
- Create and configure the database.

To configure a MapViewer data source:

1. Go to the MapViewer Application:

   Example: http://<host>:<port>/mapviewer

Where <host> is the host name or IP address of the system where MapViewer is deployed. and <port> is the port of the WebLogic instance. If MapViewer is deployed on the same Weblogic instance then this is same as the application port.

2. Click the **Admin** button to log in as an administrator to MapViewer.
3. Click **Manage Map Viewer**, then **Data sources.**
4. Enter the parameters for connecting to the database.
5. Click **submit**.

To refresh the list of data sources, click **Manage Map Viewer**, then **Data sources.**

MapViewer Security Configuration

When MapViewer is deployed on the same Weblogic instance perform the following steps to configure MapViewer to share the security credentials of the application.

1. Add the following entry in the weblogic.xml file under <MAPVIEWER_EAR_DIR>/web.war/WEB-INF:

```
 <security-role-assignment>
    <role-name>cisusers</role-name>
    <principal-name>cisusers</principal-name>
</security-role-assignment>

<session-descriptor>
    <cookie-path>/mapviewer</cookie-path>
</session-descriptor>
```

2. Add the following entry in the web.xml file under <MAPVIEWER_EAR_DIR>/web.war/WEB-INF:

```
<security-role>
    <description>MapViewer users</description>
    <role-name>cisusers</role-name>
</security-role>
```

Configuring the Application for Oracle BPEL Server

Oracle BPEL Process Manager is optional software that can be used by Oracle Public Sector Revenue Management for sending SMS messages. Oracle Public Sector Revenue Management can be configured to send SMS via different third party gateway/SMS providers. The ability to send SMS using the Oracle BPEL Server is already provided in the base application

This section describes how to configure the Oracle Public Sector Revenue Management to interact with Oracle BPEL Server.

Before configuring Oracle Public Sector Revenue Management to interact with BPEL Server you must:

- Install Oracle BPEL Server.
- Configure Oracle Public Sector Revenue Management with a process that receives phone numbers and messages deployed on the BPEL server.

Oracle Public Sector Revenue Management uses the algorithm type F1-SMSSEND to connect to the Oracle BPEL server.

The following information will be required to set up the application to work with the BPEL server:

Option Type	Detail Description
Operation Name	The 'operation' or the method name of the SMS Web service
Password	The password for the Web service
Port Type	The 'port type' name of the SMS Web service
Server URL	The url of the BPEL/SMS gateway server
Service Name	The 'service' name of the SMS Server
User Name	The 'user name' for authentication to the Web service

Oracle Policy Automation

This section describes tasks for configuring the Oracle Utilities Application Framework to communicate with Oracle Policy Automation. These tasks are not required for installing Oracle Public Sector Revenue Management.

Oracle Policy Automation (10.4)

Oracle Policy Automation (10.4) incorporates your business policies into business processes that deliver accurate, consistent and auditable outcomes. At the time of the Oracle Public Sector Revenue Management release Oracle Policy Automation can be downloaded from the following link:

http://www.oracle.com/technetwork/apps-tech/policy-automation/downloads/index.html

Refer to the *Oracle Policy Automation Installation Guide* for detailed instructions to install and deploy Oracle Determinations Server for Java.

Installation Steps

Configure the Oracle Policy Automation Server as documented in the Oracle Policy Automation Installation Guide. The following sections highlight steps for configuring the integration and installing base product supplied rulebases.

OPA Connector/Web Service Connector

To configure the OPA connector/Web service connector you to need to set options on both the PSRM application server and the OPA server.

On the PSRM Application Server

1. Add the following configuration settings on the PSRM WebLogic servers:

   On UNIX:

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

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

   Choose Option 51 from the Advance Configuration Menu.

   Add the following options for the Configuration Option when prompted for menu item Web Application Additional Options:

   ```
   -Djavax.xml.soap.MessageFactory=
   com.sun.xml.internal.messaging.saaj.soap.
   ver1_1.SOAPMessageFactory1_1Impl

   -Djavax.xml.soap.SOAPConnectionFactory=
   weblogic.wsee.saaj.SOAPConnectionFactoryImpl
   ```

   Once the values have been added: Choose Option <P> Process.

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

   On Windows:

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

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

   Choose Option 51 from the Advance Configuration Menu.

   Add the following options for the Configuration Option when prompted for menu item: Web Application Additional Options.

   ```
   -Djavax.xml.soap.MessageFactory=
   com.sun.xml.internal.messaging.saaj.soap.
   ver1_1.SOAPMessageFactory1_1Impl

   -Djavax.xml.soap.SOAPConnectionFactory=
   weblogic.wsee.saaj.SOAPConnectionFactoryImpl
   ```

   Once the values have been added: Choose Option <P> Process.

```
cd %SPLEBASE%\bin\
ksh ./initialSetup.cmd -t
```

2. Copy rulebase output zip to a location accessible to the PSRM Application Server:

   Note: Use this rulebase out.zip file contained within the delivered rulebase output.zip file. This zip file should not contain any directories.

3. Provide the location for the Oracle Policy Automation Web Service Adapter BO to the implementing party.

   Note: The absolute path should be provided applicable to the operating system.

On the OPA Determination Server:

1. Install the rulebase zip files:

   Exploded Deployment: On the OPA Determination Server that explode the WAR file, such as Tomcat, copy the rulebase output zip file to OPA Determinations Server\WEB-INF\classes\rulebases folder.

   Non-Exploded Deployment: On OPA Determination Server that do not explode the WAR file, such as Oracle WebLogic, copy the rulebase output zip file to any location on the server.

2. On OPA Determination Server add a Java Option to specify the rulebase location.

   For example:

   ```
   -Ddeterminations.server.rulebase.dir=/opt/prereq/OPA/rulebases
   ```

   ```
   set JAVA_OPTIONS=%JAVA_OPTIONS%
   - Djavax.xml.soap.MessageFactory=
   com.sun.xml.internal SS
   .messaging.saaj.soap.ver1_1.SOAPMessageFactory1_1Impl
   set JAVA_OPTIONS=%JAVA_OPTIONS%

   -Djavax.xml.soap.SOAPConnectionFactory=
   weblogic.wsee.saaj.SOAPConnectionFactoryImpl
   ```

3. Restart the OPA Determination Server (for both Exploded and Non-Exploded Deployments).

4. Verify that the rulebases are deployed properly by verifying the WSDL at the following location:

   http://<server-name:port>/determinations-server/soap/<rulebase_name>/specific?wsdl

WebLogic Production Server Considerations

By default, WebLogic Server is configured with two keystores, to be used for development only. These keystores should not be used in a production environment.

Configuring Identity and Trust

Private keys, digital certificates, and trusted certificate authority certificates establish and verify identity and trust in the WebLogic Server environment. WebLogic Server is configured with a default identity keystore DemoIdentity.jks and a default trust keystore DemoTrust.jks. In addition, WebLogic Server trusts the certificate authorities in the cacerts file in the JDK. This default keystore configuration is appropriate for testing and development purposes. However, these keystores should not be used in a production environment.

To configure identity and trust for a server:

1. Obtain digital certificates, private keys, and trusted CA certificates from the CertGen utility, Sun Microsystem's keytool utility, or a reputable vendor such as Entrust or Verisign. You can also use the digital certificates, private keys, and trusted CA certificates provided by the WebLogic Server kit. The demonstration digital certificates, private keys, and trusted CA certificates should be used in a development environment only.
2. Store the private keys, digital certificates, and trusted CA certificates. Private keys and trusted CA certificates are stored in a keystore.
3. Configure the identity and trust keystores for a WebLogic Server instance on the Configuration: Keystores page.

By default, WebLogic Server is configured with two keystores, to be used for development only.

- DemoIdentity.jks: Contains a demonstration private key for WebLogic Server. This keystore establishes an identity for WebLogic Server.
- DemoTrust.jks: Contains a list of certificate authorities trusted by WebLogic Server. This keystore establishes trust for WebLogic Server.

These keystores are located in the WL_HOME\server\lib directory and the JAVA_HOME\jre\lib\security directory. For testing and development purposes, the keystore configuration is complete. Use the steps in this section to configure identity and trust keystores for production use.

Refer to the WebLogic documentation to configure identity and trust keystores for production use (Secure servers and resources > Configure identity and trust/Set up SSL)

> **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.

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. The digital signatures features is only appropriate for Customer Care and Billing customers who use document numbers in generating bill signatures.

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.

For WebSphere Server:

- Create the password file.

```
echo ab987c | tr -d '\n'>$SPLEBASE/.passFile
```

Note: In above command, please replace "ab987c" with your password string.

- Add Keystore entries to spl.properties templates:

Open each of the five spl.properties templates mentioned below and add the following two lines in each of the templates

```
com.oracle.ouaf.keystore.file=@SPLEBASE@/.mykeystore
com.oracle.ouaf.keystore.passwordFileName=@force_forward_slash(
SPLEBASE)@/.passFile
```

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.

Updating the Hash Column on the User Table

During initial install of the application server, when running install.sh/install.cmd the installer creates both the Oracle Utilities Application Framework system keys and system HMAC keys. In certain situations it is necessary to run the following to update the hashes (the F1_SECURITY_HASH field) on the User table:

Windows:

```
set CLASSPATH=%CLASSPATH%;%SPLEBASE%\splapp\standalone\lib\spl-shared-
4.2.0.3.0.jar;%SPLEBASE%\splapp\standalone\lib\commons-cli-
1.1.jar;%SPLEBASE%\splapp\standalone\lib\log4j-
1.2.17.jar;%SPLEBASE%\splapp\standalone\lib\commons-codec-1.6.jar
```

Unix:

```
export CLASSPATH=$CLASSPATH:$SPLEBASE/splapp/standalone/lib/spl-
shared-4.2.0.3.0.jar:$SPLEBASE/splapp/standalone/lib/commons-cli-
1.1.jar:$SPLEBASE/splapp/standalone/lib/log4j-1.2.17.jar:$SPLEBASE/
splapp/standalone/lib/commons-codec-1.6.jar
```

Then execute the following:

```
java com.splwg.shared.common.ChangeConfigurationKey -l -h
```

Please refer to the *Oracle Public Sector Revenue Management Security Guide* for more details.

Appendix A

Glossary of Acronyms

ADF: Oracle Application Development Framework

EAR: Enterprise Archive

EJB: Enterprise JavaBeans

HTML: HyperText Markup Language

JAR: Java Archive

JDBC: Java database connectivity

JMX: Java Management Extensions

JNDI: Java Naming and Directory Interface

JSP: JavaServer Pages

JVM: Java Virtual Machine.

MPL: Multi Purpose Listener

OUAF: Oracle Utilities Application Framework

OAM: Oracle Access Manager

OIM: Oracle Identity Management

ONS: Oracle Notification Service

Oracle RAC FCF: Oracle Real Application Clusters Fast Connection Failover

RMI: Remote Method Invocation

SDK: Oracle Utilities Software Development Kit

SOAP: Simple Object Access Protocol

SOA: Service-oriented architecture

SPLEBASE: The location where the application will be installed.

SPLOUTPUT: This location is used for storing batch log files and output from batch jobs

WAR: Web application Archive

WAS: WebSphere

WAS ND: WebSphere Network Deployment

WLS: WebLogic

XAIApp: XML Application Integration

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- commons-lang-2.2.jar
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- serializer-2.7.1.jar
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