Oracle® Revenue Management and Billing

Version 2.6.0.0.0

Installation Guide

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ORACLE

Oracle Revenue Management and Billing Installation Guide

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Preface

About This Document

This document will help you to understand the prerequisites, supported platforms, and hardware and software requirements for installing the Oracle Revenue Management and Billing (ORMB) application. It explains how to install Oracle Utilities Application Framework and Oracle Revenue Management and Billing on the application server.

Intended Audience

This document is intended for the following audience:

- End-Users
- System Administrators
- Consulting Team
- Implementation Team

The intended audience should have:

- Required experience for installing and configuring application servers and other software
- Administrative privileges on the host where you want to install the software

Organization of the Document

The information in this document is organized into the following sections:

Section No.	Section Name	Description
Section 1	Overview	Provides an overview on how to install the Oracle Revenue Management and Billing application.
Section 2	Application Architecture Overview	Provides an overview of the Oracle Revenue Management and Billing architecture.
Section 3	Supported Platforms and Hardware Requirements	Lists the software and hardware requirements for each application tier.
Section 4	Planning the Installation	Explains how to install and configure the Oracle Revenue Management and Billing application. It also provides checklist and worksheets which help you in the installation and configuration process.
Section 5	Installing Application Server Prerequisite Software	Lists the software that you need to install for each supported operating system and application server combination.
Section 6	Installing the Application Server Component of Oracle Utilities Application Framework	Explains how to install Oracle Utilities Application Framework.

Section No.	Section Name	Description
Section 7	Installing the Application Server Component of Oracle Revenue Management and Billing	Explains how to install the Oracle Revenue Management and Billing application. It also explains how to install the Oracle Revenue Management and Billing online help.
Section 8	Additional Tasks	Lists and describes the additional tasks that you need to perform after installing the application.
Appendix A	Application Framework Prerequisite Patches	Lists the framework patches that you need to install prior to installing the Oracle Revenue Management and Billing application.
Appendix B	ORMB V2.6.0.0.0 Bug Fixes	Lists the bugs fixed in Oracle Revenue Management and Billing Version 2.6.0.0.0.
Appendix C	License and Copyright Notices	Lists all notices with reference to usage of third party products.

Related Documents

You can refer to the following documents for more information:

Document	Description
Oracle Revenue Management and Billing Version 2.6.0.0.0 Release Notes	Provides a brief description about the new features, enhancements, UI and database level changes, supported platforms, framework upgrade, supported upgrades, and technology upgrade made in this release. It also highlights the discontinued features, bug fixes, and known issues in this release.
Oracle Revenue Management and Billing Quick Installation Guide	Provides high-level information on how to install the Oracle Revenue Management and Billing (ORMB) application and selected additional software.
Oracle Revenue Management and Billing Database Administrator's Guide	Provides information about the Oracle Database Server and Client required for installing the Oracle Revenue Management and Billing database. It explains how to install database with and without demo data. It provides database configuration guidelines including recommended settings for the Oracle Exadata Database machine.
Oracle Revenue Management and Billing Server Administration Guide	Explains the Oracle Revenue Management and Billing (ORMB) architecture and technical know-how required for configuring and using the ORMB application. It explains how to configure and deploy web and business application servers. In addition, it explains how to monitor client machines, web and/or business application servers, and database connections.

Document	Description
Oracle Revenue Management and Billing Security Guide	Lists the security features available in the Oracle Revenue Management and Billing application. It explains how to configure security for the Oracle Revenue Management and Billing application using the default security features.

Conventions

The following conventions are used across the document:

Convention	Meaning
boldface	Boldface indicates graphical user interface elements associated with an action, or terms defined in the text.
italic	Italic indicates a document or book title.
`monospace`	Monospace indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or information that an end-user needs to enter in the application.

Change Log

Revision	Last Update	Updated Section	Comments
12.1	23-Jun-2017	6.3:Installing Oracle Utilities Application Framework Version 4.3.0.4.0	Corrected information.

Contents

1. Overview

This section provides an overview of the installation of Oracle Revenue Management and Billing (ORMB) application.

1.1 Installation Overview

Installing Oracle Revenue Management and Billing involves the following steps:

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

Note: The installation and administration of the database server tier is described in detail in *Oracle Revenue Management and Billing Database Administrator's Guide*.

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

2. Application Architecture Overview

This section provides an overview of the Oracle Utilities Application Framework application architecture.

2.1 Application Architecture

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

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

2.1.1 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 Revenue Management and Billing application.

Note: A desktop machine having Microsoft Windows and Oracle Database Client is required to perform some of the Oracle Revenue Management and Billing product installation steps.

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

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

2.1.3 Tier 3: Database, or Persistence Tier

This tier is implemented in a database server. The database server stores data maintained by the Oracle Revenue Management and Billing 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.

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 on which the product is supported. It includes:

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

3.1 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 Revenue Management and Billing be deployed?
- Which web server product will Oracle Revenue Management and Billing deploy on?
- Which database product will Oracle Revenue Management and Billing deploy on?
- Do you plan to deploy multiple Oracle Revenue Management and Billing instances on the same physical server?
- How do you plan to deploy Oracle Revenue Management and Billing?
    - 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 *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 the Oracle Revenue Management and Billing product, as described in the rest of this section.

3.2 Requirements by Tier

The application is deployed on multiple Tiers:

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

3.2.1 Tier 1, Desktop: Software and Hardware Requirements

Configuration	Processor	Memory (RAM)	Monitor Display
Minimum	Pentium IV - 2.0 GHz	1024 MB	1024X768[1] 16-bit Color
Recommended[2]	Pentium IV - 3.0+ GHz, or any Core 2 Duo or any Athlon X2	2048 MB	1280X1024[2] 32-bit Color

Web Browser Requirements

The following operating system and web browser software are supported:

- Windows 7, 8.1, 10 (64-bit) with Internet Explorer 11.x (not in compatibility mode)

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

Please refer the Supported Platforms section 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 web application and business application servers on the same machine and the system running with the default values. The default values may not support a production environment. You should adjust these values according to your production needs. Refer to *Oracle Revenue Management and Billing Server Administration Guide* on how to change 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 deployment, a minimum of 4 GB of real memory is required, plus 6 GB of swap space.

[1]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).
[2] The Recommended configuration improves client performance.

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.
$SPLAPP	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.
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.

3.2.3 Tier 3, Database Server: Software and Hardware Requirements

See the Supported Platforms section for supported database servers.

3.3 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 the Installing Application Server Prerequisite Software section for more information. This section includes the following topics:

- Operating Systems and Application Servers
- Oracle Database Servers
- Oracle WebLogic Server Information

3.3.1 Operating Systems and Application Servers

The following table lists the operating system and application server combinations on which Oracle Revenue Management and Billing Version 2.6.0.0.0 is supported:

Operating System and Web Browser (Client)	Operating System (Server)	Chipset	Web Application Server	Database Server
Windows 7[3], 8.1, 10 (64-bit) with Internet Explorer 11.x	Oracle Linux 6.x and 7.x (64-bit)	x86_64	WebLogic 12.1.3.x[4] (64-bit)	Oracle 12.1.0.2
			WebLogic 12.2.1.x (64-bit)	
	Red Hat Enterprise Linux[5] 6.x and 7.x (64-bit)	x86_64	WebLogic 12.1.3.x[4] (64-bit) WebLogic 12.2.1.x (64-bit)	Oracle 12.1.0.2
	Windows Server 2012 R2 (64-bit)	x86_64	WebLogic 12.1.3.x[4] (64-bit)	Oracle 12.1.0.2
			WebLogic 12.2.1.x (64-bit)	

Note:

Oracle Corporation distributes Oracle Linux with the following two kernels:

Red Hat Compatible Kernel – This kernel is identical to the kernel shipped in Red Hat Enterprise Linux.

Unbreakable Enterprise Kernel – This kernel is based on a later Linux 2.6-series kernel, with Oracle's own enhancements for OLTP, InfiniBand, SSD disk access, NUMA-optimizations, Reliable Datagram Sockets (RDS), async I/O, OCFS2, and networking.

Oracle claims that the Unbreakable Enterprise Kernel is compatible with Red Hat Enterprise Linux; and Oracle middleware and third-party Red Hat Enterprise Linux-certified applications can be installed and run unchanged on Unbreakable Enterprise Kernel. However, for users requiring strict compatibility with Red Hat or for users running kernel modules dependent on specific kernel versions, the Red Hat Compatible Kernel offers 100% compatibility with Red Hat Enterprise Linux.

We strongly recommend you to install Oracle Revenue Management and Billing (ORMB) on Windows platform only for non-production activities, such as User Acceptance Testing (UAT), development setup, and so on.

[3] Oracle support for Windows XP ended December 2013. Microsoft support for Windows XP ended April 2014.

[4] At present, ORMB supports both embedded and native installations for WebLogic 12.1.3. However, ORMB supports only native installation for WebLogic 12.2.1.

[5] Oracle Revenue Management and Billing is tested and certified on Oracle Linux 6.x and 7.x. Oracle Linux is 100% userspace-compatible with Red Hat Enterprise Linux, and therefore Oracle Revenue Management and Billing is supported on Red Hat Enterprise Linux.

3.3.2 Oracle Database Servers

Oracle Revenue Management and Billing Version 2.6.0.0.0 is supported with Oracle Database Server 12.1.0.2 on all operating systems listed above. The following Oracle Database Server Editions are supported:

- Oracle Database Enterprise Edition

Note: Oracle Database Enterprise Edition with the Advanced Compression and Partitioning options is strongly recommended in all situations.

Oracle Database Client 12.1.0.2 is required for Oracle Database Server 12.1.0.2.

3.3.3 Oracle WebLogic Server Information

The following Oracle WebLogic Server Editions are supported:

- Oracle WebLogic Server Standard Edition 12.1.3.x or 12.2.1.x
- Oracle WebLogic Server Enterprise Edition 12.1.3.x or 12.2.1.x ((required if using application clustering)

3.4 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 Revenue Management and Billing production environment.

The exception from this rule is Hibernate Version 4.1.0. This version should not be upgraded.

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

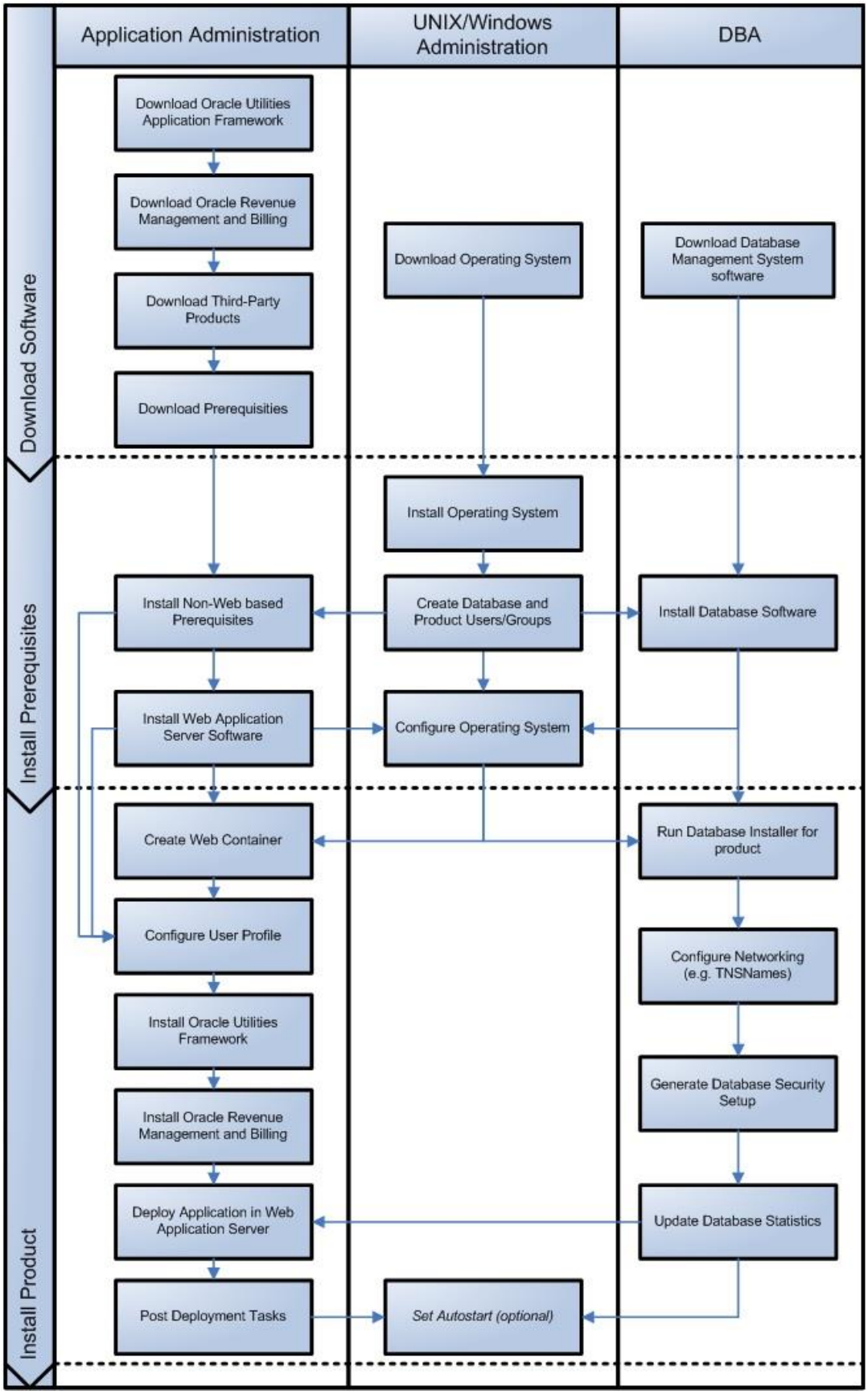
4. Planning the Installation

This section provides information for planning an Oracle Revenue Management and Billing installation, including:

- Installation and Configuration Overview
- Before You Install
- Installation Checklist
- Installation and Configuration Worksheets

4.1 Installation and Configuration Overview

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



4.2 Before You Install

Refer to My Oracle Support for up-to-date additional information on installing Oracle Revenue Management and Billing.

4.2.1 Embedded vs Native/Clustered Installation

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

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

4.2.2 Application Server Clustering

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

- Implementing Oracle ExaLogic and/or Oracle WebLogic Clustering (Doc ID: 1334558.1)

4.2.3 Native Mode in WebLogic

If you are planning to use Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to the whitepaper named *Native Installation Oracle Utilities Application Framework (Doc ID: 1544969.1)* on My Oracle Support.

4.2.4 Directory Names

Directory cannot contain whitespace characters.

4.3 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 sections.

1. Install the database as described in Oracle Revenue Management and Billing Database Administrator's Guide.
2. Create Group/User ID.
3. Install prerequisite software (for complete details about installing and configuring the prerequisite third-party software for your specific platform, see the Installing Application Server Prerequisite Software section):
    - Oracle Database Client 12.1.0.2
    - Java 8 Update 40
    - Hibernate 4.1.0
4. Install Oracle WebLogic 12.1.3.x or 12.2.1.x.

5. Verify that the software is installed.
6. Set up environment variables.
7. Install Oracle Utilities Application Framework.
8. Install the rollup pack for Oracle Utilities Application Framework (prerequisite single fixes for ORMB).
9. Install Oracle Revenue Management and Billing.
10. Deploy the Oracle Revenue Management and Billing application.
11. Complete the post installation tasks.
12. Optional third-party product integration (such as Reporting tools).

4.4 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 Installing the Application Server Component of Oracle Utilities Application Framework section.

Note: Some web application server information will not be available until the software installation steps have been completed as described in the Installing Application Server Prerequisite Software section.

4.4.1 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 a numeric value in the prompt.

Once 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 the specified parameter values, type `X` and then press 'Enter'.

4.4.2 Installation Menu Functionality Details

The Environment Installation Utility requires that Oracle Database 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` or `splenviron.cmd` is executed, it will read from the `ENVIRON.INI` file to set the environment variables. See *Oracle Revenue Management and Billing Server Administration Guide* 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 Database Client software specified in the Supported Platforms section prior to running any of the installation utilities.

The following prompt will appear when executing the installation utility:

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

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

4.4.3 Encryption Methods

The Oracle Utilities Application Framework installation uses the Oracle WebLogic API to encrypt the User ID and password that perform admin functions for the WebLogic application servers. Please refer to the Oracle 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. Further information on OUAF encryption can be found in the KeyStore Options section.

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

4.4.4 Environment Installation Options

The environment installation options are available during installation. Alternatively, you can access these options using the following command:

Linux:

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

Windows:


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

The environment installation options are categorized into the following menus:

- Environment ID, Roles, Third Party Software Configuration
- Keystore Options
- Environment Installation Options

4.4.4.1 Environment ID, Roles, Third Party Software Configuration

The following table lists and describes the third party software configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Environment ID	ENVIRONMENT_ID	
Server Roles	SERVER_ROLES	
Oracle Client Home Directory	ORACLE_CLIENT_HOME	
Web Java Home Directory	JAVA_HOME	
Hibernate JAR Directory	HIBERNATE_JAR_DIR	
ONS JAR Directory[6]	ONS_JAR_DIR	
Web Application Server Home Directory	WEB_SERVER_HOME	
WebLogic Server Thin-Client JAR Directory	WLTHINT3CLIENT_JAR_DIR	
ADF Home Directory[7]	ADF_HOME	
OIM OAM Enabled Environment	OPEN_SPML_ENABLED_ENV	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.4.2 Keystore Options

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

- <SPLEBASE>/ks/.ouaf_keystore
- <SPLEBASE>/ks/.ouaf_storepass

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

[6] In order to activate the RAC FCF, the application needs the external ons.jar file, This ons.jar is located under the Oracle Database Software at the following path:
$ORACLE_HOME/opmn/lib/ons.jar
The ons.jar should be copied to the Application Server. During the OUAF installation the relevant option should be populated with the folder location of the ons.jar

[7] It is an optional menu option that may be required for the product installation and variables.

The following table lists and describes the keystore menu options:

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

For more information on how to setup keystores, refer to *Oracle Revenue Management and Billing Security Guide*.

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.4.3 Environment Installation Options

The following table lists and describes the environment installation menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Environment Mount Point	SPLDIR	
Log Files Mount Point	SPLDIROUT	
Environment Name	SPLENVIRON	
Web Application Server Type	SPLWAS	
Install Application Viewer Module	WEB_ISAPPVIEWER	
Install Demo Generation Cert Script	CERT_INSTALL_SCRIPT	
Install Sample CM Source Code	CM_INSTALL_SAMPLE	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.5 Environment Configuration

The environment configuration options are available during installation. Alternatively, you can access these options using the following command:

Linux:

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

Windows:

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

The environment configuration options are categorized into the following menus:

- Environment Description
- Business Application Server Configuration
- Web Application Server Configuration
- Database Configuration
- General Configuration Options
- SSL Certificate Keystore
- OUAF TrustStore Options

4.4.5.1 Environment Description

The following table lists and describes the environment menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Environment Description	DESC	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.5.2 Business Application Server Configuration

The following table lists and describes the WebLogic Business Application Server configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Business Server Host	BSN_WLHOST	
WebLogic Server Name	BSN_WLS_SVRNAME	
Business Server Application Name	BSN_APP	
MPL Admin Port Number	MPLADMINPORT	
MPL Automatic startup	MPLSTART	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

Note:

To work with native, managed or clustered WebLogic application servers, the following additional setting must be appended to the Server Start Arguments, within the Oracle WebLogic console, for COBOL sockets to be used:

Linux:

```
-Djava.library.path=<SPLEBASE>/runtime
```

Windows:

```
-Djava.library.path=<SPLEBASE>\runtime
```

Where, `<SPLEBASE>` is the path where the application environment is installed. This setting does not support environment variables.

4.4.5.3 Web Application Server Configuration

The following table lists and describes the WebLogic Web Application Server configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Web Server Host	WEB_WLHOST	
WebLogic SSL Port Number	WEB_WLSSLPORT	
WebLogic Console Port Number	WLS_ADMIN_PORT	
WebLogic Additional Stop Arguments	ADDITIONAL_STOP_WEBLOGIC	
Web Context Root	WEB_CONTEXT_ROOT	
WebLogic JNDI User ID	WEB_WLSYSUSER	
WebLogic JNDI Password	WEB_WLSYSPASS	
WebLogic Admin System User ID	WLS_WEB_WLSYSUSER	
WebLogic Admin System Password	WLS_WEB_WLSYSPASS	
WebLogic Server Name	WEB_WLS_SVRNAME	
Web Server Application Name	WEB_APP	
Deploy Using Archive Files	WEB_DEPLOY_EAR	
Deploy Application Viewer Module	WEB_DEPLOY_APPVIEWER	
Enable The Unsecured Health Check Service	WEB_ENABLE_HEALTHCHECK	
MDB RunAs User ID	WEB_IWS_MDB_RUNAS_USER	

Menu Option	Corresponding Parameter	Customer Install Value
Super User Ids	WEB_IWS_SUPER_USERS	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.5.4 Database Configuration

The following table lists and describes the database configuration menu options:

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

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

Note:

If any of the database menu option value is changed (thus, potentially connecting to a different schema), the system displays the following warning corresponding to the menu option:

"This database option has been changed. Since the keystore and encrypted data in the database must be compatible, you have two options:

>> load the compatible keystore into the environment;

>> keep the current keystore, re-enter any encrypted information online through the application, and re-generate the database hashes."

Refer to *Oracle Revenue Management and Billing Security Guide* for more information.

4.4.5.5 General Configuration Options

The following table lists and describes the general configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Batch RMI Port	BATCH_RMI_PORT	
RMI Port number for JMX Business	BSN_JMX_RMI_PORT_PERFORMANCE	
RMI Port number for JMX Web	WEB_JMX_RMI_PORT_PERFORMANCE	
JMX Enablement System User ID	BSN_JMX_SYSUSER	
JMX Enablement System Password	BSN_JMX_SYSPASS	
Coherence Cluster Name	COHERENCE_CLUSTER_NAME	
Coherence Cluster Address	COHERENCE_CLUSTER_ADDRESS	
Coherence Cluster Port	COHERENCE_CLUSTER_PORT	
Coherence Cluster Mode	COHERENCE_CLUSTER_MODE	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.5.6 SSL Certificate Keystore

By default, Secure Sockets Layer (SSL) certificates are required for authentication. The product provides demo certificates generated with 1024 byte keys. For production environments, please use your own custom certificates. For more information, refer to *Oracle Revenue Management and Billing Security Guide*.

The following table lists and describes the SSL certificate keystore menu options:

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

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.5.7 OUAF TrustStore Options

The OUAF TrustStore configuration is required for Inbound Web Services (IWS). The following table lists and describes the OUAF TrustStore menu options:

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

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6 Advanced Menu Options

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

Linux:

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

Windows:

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

The advanced menu options are categorized into the following menus:

- Advanced Environment Miscellaneous Configuration
- Advanced Environment Memory Configuration
- Advanced Web Application Configuration
- OIM Configuration Settings
- WebLogic Diagnostics
- URI, File and URL Related Options

4.4.6.1 Advanced Environment Miscellaneous Configuration

The following table lists and describes the advanced environment miscellaneous configuration menu options:

Menu Option	Corresponding Parameter	Customer Value Install
OUAF DBMS Scheduler User	OUAF_DBMS_SCHEDULER_USER	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Number of Threads	BATCHTHREADS	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	
Enable Batch Edit Functionality	BATCHEDIT_ENABLED	
Batch Online Log Directory	BATCH_ONLINE_LOG_DIR	
Enable Web Services Functionality	WEBSERVICES_ENABLED	
IWS deployment target	WLS_CLUSTER_NAME	
Web Admin Server Host	WEB_ADMIN_SERVER	
GIS Service Running on the same Web Server	GIS	
GIS Service URL	GIS_URL	
GIS WebLogic System User ID	GIS_WLSYSUSER	

Menu Option	Corresponding Parameter	Customer Value Install
GIS WebLogic System Password	GIS_WLSYSPASS	
Online Display Software Home	ONLINE_DISPLAY_HOME	
Max Queries To Hold In Cache Across All Threads	XQUERIES_TO_CACHE	
Seconds Timeout Flush Cache Completely	XQUERY_CACHE_FLUSH_TIMEOUT	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6.2 Advanced Environment Memory Configuration

The following table lists and describes the advanced environment memory configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Web Application Java Initial Heap Size	WEB_MEMORY_OPT_MIN	
Web Application Java Max Heap Size	WEB_MEMORY_OPT_MAX	
Web Application Java Max Perm Size	WEB_MEMORY_OPT_MAXPERMSIZE	
Web Application Additional Options	WEB_ADDITIONAL_OPT	
Global JVM Arguments	GLOBAL_JVMARGS	
Ant Min Heap Size	ANT_OPT_MIN	
Ant Max Heap Size	ANT_OPT_MAX	
Ant Additional Options	ANT_ADDITIONAL_OPT	
Thread Pool Worker Java Min Heap Size	BATCH_MEMORY_OPT_MIN	
Thread Pool Worker Java Max Heap Size	BATCH_MEMORY_OPT_MAX	
Thread Pool Worker Java Max Perm Size	BATCH_MEMORY_OPT_MAXPERMSIZE	
Thread Pool Worker Additional Options	BATCH_MEMORY_ADDITIONAL_OPT	
Additional Runtime Classpath	ADDITIONAL_RUNTIME_CLASSPATH	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6.3 Advanced Web Application Configuration

The following table lists and describes the advanced web application configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Web Application Cache Settings	WEB_L2_CACHE_MODE	
Web Server Port Number	WEB_WLPORT	
WebLogic Overload Protection	WLS_OVERRIDE_PROTECT	
Domain Home Location	WLS_DOMAIN_HOME	
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	
Strip HTML Comments	STRIP_HTML_COMMENTS	
Authentication Login Page Type	WEB_WLAUTHMETHOD	
Web Form Login Page	WEB_FORM_LOGIN_PAGE	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_PAGE	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE	
Help Form Login Page	WEB_HELP_FORM_LOGIN_PAGE	
Help Form Login Error Page	WEB_HELP_FORM_LOGIN_ERROR_PAGE	
Web Security Role	WEB_PRINCIPAL_NAME	
Web Principal Name	WEB_PRINCIPAL_NAME	
Application Viewer Security Role	WEB_APPVIEWER_ROLE_NAME	
Application Viewer Principal Name	WEB_APPVIEWER_PRINCIPAL_NAME	
This is a development environment	WEB_ISDEVELOPMENT	
Preload All Pages on Startup	WEB_PRELOADALL	
Maximum Age of a Cache Entry for Text	WEB_MAXAGE	
Maximum Age of a Cache Entry for Images	WEB_MAXAGEI	
JSP Recompile Interval (s)	WEB_WLPAGECHECKSECONDS	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6.4 OIM Configuration Settings

The following table lists and describes the OIM configuration menu options:

Menu Option	Corresponding Parameter	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_DEBUG_SETTING	
SPML IDM Schema Name	OIM_SPML_UBER_SCHEMA_NAME	
SPML OIM Name Space	OIM_SPML_NAME_SPACE	
SPML OIM Enclosing Element	OIM_SPML_SOAP_ELEMENT	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6.5 WebLogic Diagnostics

The following table lists and describes the WebLogic diagnostics menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Diagnostic Context Enabled	WLS_DIAGNOSTIC_CONTEXT_ENABLED	
Diagnostic Volume	WLS_DIAGNOSTIC_VOLUME	
Built-in Module	WLS_DIAGNOSTIC_BUILT_IN_MODULE	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

4.4.6.6 URI, File and URL Related Options

The following table lists and describes the URI, File and URL related menu options:

Menu Option	Corresponding Parameter	Customer Install Value
Restriction URIs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Custom SQL Security	CUSTOM_SQL_SECURITY	
White List Full Path	CLOUD_WHITE_LIST_PATH	
Custom White List Full Path	CLOUD_CUSTOM_WHITE_LIST_PATH	
Substitution Variable List File Location	CLOUD_SUBSTITUTION_VARIABLE_LIST_FILE_LOCATION	
Directory For Variable F1_CMA_Files	CLOUD_LOCATION_F1_MIGR_ASSISTANT_FILES	
Directory For Variable F1_BI_EXTRACTS	CLOUD_LOCATION_F1_BI_EXTRACT	
Directory For Variable F1_INTERNAL_FILES	CLOUD_LOCATION_F1_PROD_INTER_FILES	

Menu Option	Corresponding Parameter	Customer Install Value
Directory For Variable F1_CUST_APP_BASE	CLOUD_LOCATION_F1_CUST_APP_BASE	
Directory For Variable F1_PROCESS_DIR	CLOUD_LOCATION_F1_PROCESS_DIR	
Directory For Variable F1_SVC_CATALOG_WSDL_DIR	CLOUD_LOCATION_F1_SVC_CATALOG_ WSDL_DIR	
Directory For Variable F1_PDB_EXTRACTS	CLOUD_LOCATION_F1_PDB_EXTRACTS	

For more information about the parameter, refer to *Oracle Revenue Management and Billing Server Administration Guide*.

5. Installing Application Server Prerequisite Software

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

- Oracle Linux 6.x or 7.x and Red Hat Enterprise Linux 6.x or 7.x Application Server
- Windows 2012R2 Application Server

5.1 Oracle Linux 6.x or 7.x and Red Hat Enterprise Linux 6.x or 7.x Application Server

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

5.1.1 Supported Application Servers

Operating System	Chipsets	Application Server
Oracle Linux 6.x and 7.x (64-bit)	x86_64	Oracle WebLogic 12.1.3.x (64-bit) Oracle WebLogic 12.2.1.x (64-bit)
Red Hat Enterprise Linux 6.x and 7.x (64-bit)	x86_64	Oracle WebLogic 12.1.3.x (64-bit) Oracle WebLogic 12.2.1.x (64-bit)

5.1.2 Web/Application Server Tier

Oracle Linux 6.x or 7.x or Red Hat Enterprise Linux 6.x or 7.x Operating System Running on x86_64 (64-bit) Architecture

Linux 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
ORMB Administrator UserID	`cissys`	
ORMB 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.

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 007 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.

Note: The Oracle Database 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.

You must use the same user for starting and stopping a process. For example, if cissys is used to start the application server, then use cissys to stop it as well.

Oracle Database Client 12.1.0.2 - Runtime Option

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

For the cissys user ID, ensure that the ORACLE_CLIENT_HOME environment variable 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 8.0 Update 51 or Later, 64-Bit

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

http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.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 Revenue Management and Billing. To install Hibernate External JAR files to the Hibernate Third Party JAR Depot:

1. Create a Hibernate Third Party JAR Depot:

   ```
   export HIBERNATE_JAR_DIR=<Hibernate Third Party JAR Depot>
   ```

2. Download the hibernate-release-4.1.0.Final.zip file from the following location:

   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 zip 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 the 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-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```


5. Another package needs to be downloaded in order to get the `jboss-logging-3.3.0.Final.jar` file. Download the `hibernate-search-5.5.4.Final-dist.zip` file from the following location:

   https://sourceforge.net/projects/hibernate/files/hibernate-search/

   Click the "5.5.4.Final" link to download the zip file.

6. Extract the contents of the zip file:

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

7. Copy the `jboss-logging-3.3.0.Final.jar` file to the Hibernate JAR Directory (`$HIBERNATE_JAR_DIR`) using the following command:

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

Oracle WebLogic Server 12.1.3.x or 12.2.1.x (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server (12.1.3.x or 12.2.1.x) (64-bit), as required.

Note: If you plan to use the Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to the whitepaper named *Native Installation Oracle Utilities Application Framework (Doc ID: 1544969.1)* on My Oracle Support.

5.2 Windows 2012 Application Server

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

5.2.1 Supported Application Servers

Operating System	Chipsets	Application Server
Windows Server 2012 R2 (64-bit)	x86_64	Oracle WebLogic 12.1.3.x (64-bit) Oracle WebLogic 12.2.1.x (64-bit)

5.2.2 Web/Application Server Tier

File and Directory Names Limitations

File and directory names cannot contain spaces. Due to limitations in windows, fully qualified filenames cannot exceed 2047 characters.

Oracle Database Client 12.1.0.2 — Runtime Option

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

For the cissys user ID, ensure that the ORACLE_CLIENT_HOME environment variable 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 8.0 Update 51 or Later, 64-Bit

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

http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.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 Revenue Management and Billing. To install Hibernate External JAR files to the Hibernate Third Party JAR Depot:

1. Create a Hibernate Third Party JAR Depot:

   ```
   set HIBERNATE_JAR_DIR=<Hibernate Third Party JAR Depot>
   ```

2. Download the hibernate-release-4.1.0.Final.zip file from the following location:

   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 zip 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 the 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-transaction-api_1.1_spec-1.0.0.Final.jar %HIBERNATE_JAR_DIR%
   ```


5. Another package needs to be downloaded in order to get the `jboss-logging-3.3.0.Final.jar` file. Download the `hibernate-search-5.5.4.Final-dist.zip` file from the following location:

   https://sourceforge.net/projects/hibernate/files/hibernate-search/

   Click the "5.5.4.Final" link to download the zip file.

6. Extract the contents of the zip file:

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

7. Copy the `jboss-logging-3.3.0.Final.jar` file to the Hibernate JAR Directory (`$HIBERNATE_JAR_DIR`) using the following command:

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

Oracle WebLogic Server 12.1.3.x or 12.2.1.x (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server (12.1.3.x or 12.2.1.x) (64-bit), as required.

Note: If you plan to use the Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to the whitepaper named *Native Installation Oracle Utilities Application Framework (Doc ID: 1544969.1)* on My Oracle Support.

6. Installing the Application Server Component of Oracle Utilities Application Framework

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

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

6.1 Installation Overview

The installation packages for your Oracle Utilities Application Framework-based application must be downloaded from Oracle Software Delivery Cloud. You need to do a fresh installation of the application server and you cannot upgrade an existing application server.

Before you proceed with the installation:

1. Complete the database installation process. For more information, refer to *Oracle Revenue Management and Billing Database Administrator's Guide*.
2. Make sure that you have installed all required third-party software as described in the Installing Application Server Prerequisite Software section.

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

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

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

Application server installation packages delivered for this version are multi-platform and are ready to install on any supported platform (as described in the Supported Platforms section). We recommend that you complete the database installation before installing the application server.

6.2 Preinstallation Tasks

6.2.1 Hardware and Software Version Prerequisites

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

6.2.2 Database Installation

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

6.2.3 Installation Prerequisites

The Installing Application Server Prerequisite Software section 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.

6.2.4 System Architecture Overview

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

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

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

6.2.5 Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.3.0.4.0 installation file is delivered in jar format for both Linux and Windows platforms.

If you are planning to install multiple Oracle Utilities Application Framework V4.3.0.4.0 environments operated by different Oracle Utilities Administrator User IDs, you must complete each of the following installation steps for each administrator user ID.

To copy and decompress the install media, perform the following steps:

1. Login to the application server host with the Oracle Utilities Application Framework administrator user ID (default cissys).
2. Download the Oracle Utilities Application Framework V4.3.0.4.0 Multiplatform package from the Oracle Revenue Management and Billing V2.6.0.0.0 media pack which is available on Oracle Software Delivery Cloud. A zip file is downloaded.
3. Create a temporary directory such as `c:\ouaf\temp` or `/ouaf/temp`. (Referred to below as `<TEMPDIR>`.)

Note: This directory must be located outside any current or other working Oracle Utilities application environments. All files placed in this directory which are required for installation can be deleted after completing the installation successfully.

4. Unzip the downloaded file in your local folder. The contents include the `FW-V4.3.0.4.0-MultiPlatform.jar` file.
5. Copy the `FW-V4.3.0.4.0-MultiPlatform.jar` file from your local folder to `<TEMPDIR>`. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
6. Decompress the JAR file:

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

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

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

The contents of the JAR file include a sub-directory named FW.V4.3.0.4.0.

6.2.6 Set Permissions for the CISTAB File in Linux

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

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

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

6.3 Installing Oracle Utilities Application Framework Version 4.3.0.4.0

To install Oracle Utilities Application Framework (OUAF) Version 4.3.0.4.0:

1. Login to the application server using the administrator's credentials.

Note: On Linux machine, login using the `cissys` credentials. And, on Windows machine, login using the administrator's credentials.

2. Install and configure the required third-party software for the application server.

Note: You must install the prerequisite third party software depending on the platform on which you want to install Oracle Utilities Application Framework. For more details, refer to the Installing Application Server Prerequisite Software section.

3. Set the Java Home path using the following command:

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

Note:

The <Java_Home> is the location where you have installed Java 1.8.

The above command is applicable only for Linux platform.

4. Change to the <TEMPDIR>/FW.V4.3.0.4.0 directory.

Note: The <TEMPDIR> folder is the location where you have extracted the contents of the FW-V4.3.0.4.0-MultiPlatform.jar file.

5. Install utility using the following command:

   Linux:

   `ksh ./install.sh`

   Windows:

   `install.cmd`

   The following message appears in the command line:

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

6. Type <ORACLE_CLIENT_HOME>, and then press Enter. The following environment installation menus appear in the command line:
   - 1. Environment ID, Roles, Third Party Software Configuration
   - 2. Keystore Options
   - 50. Environment Installation Options

Note:

The <ORACLE_CLIENT_HOME> is the location where Oracle Database Client is installed. This is required to execute the Perl installation utilities.

If the ORACLE_CLIENT_HOME environment variable is set, the installation utility will not request you to provide this information.

7. Type **1** to define values for the third party software configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
8. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Environment ID, Roles, Third Party Software Configuration section.

9. Type **2** to define values for the keystore options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
10. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Keystore Options section.

11. Type **50** to define values for the environment installation options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.

12. Specify the required value for menu options, and then press **Enter**. The specified values are stored in the `$SPLEBASE/etc/ENVIRON.INI` file.

Note:

`$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed.

Before you specify the environment installation options, ensure that you have created an output directory named Log File Mount Point. If this output directory does not exist, the installation will not be successfully executed.

For more details about these menu options, refer to the Environment Installation Options section.

13. Type **P** to proceed with the installation. The following environment configuration menus appear in the command line:
    - 1. Environment Description
    - 2. Business Application Server Configuration
    - 3. Web Application Server Configuration
    - 4. Database Configuration
    - 5. General Configuration Options
    - 6. SSL Certificate Keystore
    - 7. OUAF TrustStore Options
14. Type **1,** and then press **Enter**. The utility prompts you to enter the environment description.
15. Specify the environment description, and then press **Enter**.

Note: For more details, refer to the Environment Description section.

16. Type **2** to define values for the business application server configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
17. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Business Application Server Configuration section.

18. Type **3** to define values for the web application server configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
19. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Web Application Server Configuration section.

20. Type **4** to define values for the database configuration, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
21. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the Database Configuration section.

22. Type **5** to define values for the general configuration options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
23. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the General Configuration Options section.

24. Type **6** to define values for the SSL certificate keystore options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
25. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the SSL Certificate Keystore section.

26. Type **7** to define values for the OUAF TrustStore Options, and then press **Enter**. The utility prompts you to enter values for a list of menu options.
27. Specify the required value for menu options, and then press **Enter**.

Note: For more details about these menu options, refer to the OUAF TrustStore Options section.

28. Type **P** to proceed with the installation. The Oracle Utilities Application Framework Version 4.3.0.4.0 is installed on the application server.

Note:

The utility contains default values for some of the menu options. If required, you can change their values. While executing the `install` utility, you must set the value for all menu options. Otherwise, the installation process will not be completed successfully.

The values that you specify for the menu options are stored in the `$SPLEBASE/etc/ENVIRON.INI` file.

Once the installation process is completed, the following utilities are automatically executed in the specified order:

1. `initialSetup` - The `initialSetup` utility updates the configuration files including the WAR files on the system. On the Linux machine, this utility is available in the `$SPLEBASE/bin` directory. And, on the Windows machine, this utility is available in the `%SPLEBASE%\bin` directory.

2. `splenviron` – The `splenviron` utility sets the environment variables using the `ENVIRON.INI` file. On the Linux machine, this utility is available in the `$SPLEBASE/bin` directory. And, on the Windows machine, this utility is available in the `%SPLEBASE%\bin` directory. The following are some of the key environment variables that are set using the `splenviron` utility:

   - → $PATH
   - → $SPLEBASE (%SPLEBASE%) – Indicates the <SPLDIR>/<SPLENVIRON> directory
   - → $SPLOUTPUT (%SPLOUTPUT%) - Indicates the <SPLDIROUT>/<SPLENVIRON> directory
   - → $SPLENVIRON (%SPLENVIRON%) – Indicates the 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:

Linux:

```
$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.

For more information, see the Planning the Installation section for settings and configuration.

6.4 Post Installation Tasks

Once you install Oracle Utilities Application Framework V4.3.0.4.0, you need to do the following:

1. Install Rollup Pack for Oracle Utilities Application Framework Version 4.3.0.4.0

6.4.1 Installing Rollup Pack for OUAF Version 4.3.0.4.0

To install the rollup pack for Oracle Utilities Application Framework Version 4.3.0.4.0:

1. Download the Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for RMB V2.6.0.0.0 package from the Oracle Revenue Management and Billing V2.6.0.0.0 media pack which is available on Oracle Software Delivery Cloud. A zip file is downloaded.
2. Unzip the downloaded file in the `TEMPDIR` directory. The contents include the `ORMB-V26000-FW-PREREQ-MultiPlatform.jar` file.
3. Decompress the JAR file using the following command:

   ```
   cd <TEMPDIR>
   jar -xvf ORMB-V26000-FW-PREREQ-MultiPlatform.jar
   ```

   A sub-directory named FW-V4.3.0.4.0-Rollup is extracted. It contains the following two sub-folders:

   - Application
   - Database

4. Initialize the application environment where you want to install the rollup pack using the following command:

   Linux:

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

   Windows:

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

5. Change to the `Application` directory using the following command:

   ```
   cd <TEMPDIR>/FW-V4.3.0.4.0-Rollup/Application
   ```

6. Execute the `installSFgroup` utility using the following command:

   Linux:

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

   Windows:

   ```
   installSFgroup.cmd
   ```

7. Installing the Application Server Component of Oracle Revenue Management and Billing

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

- Pre-installation Tasks
- Installing the Application
- Post Installation Tasks
- Installing User Documentation
- Operating the Application
- Installing Service Packs and Patches

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

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

You must initialize the Framework environment along with the required Patch Set prior to proceeding with Oracle Revenue Management and Billing Application product installation.

7.1 Pre-installation Tasks

This section describes the steps that should be taken before installing Oracle Revenue Management and Billing.

7.1.1 Copying and Decompressing Install Media

The installation file is delivered in zip format for Linux and Windows platforms. Oracle Revenue Management and Billing is delivered in a separate installation package for each supported Operating System.

Please refer to the Supported Platforms section for version and installation details regarding the database and operating system versions. Also refer Installing Application Server Prerequisite Software section for prerequisite third-party software installation instructions.

To copy and decompress the install media, perform the following steps:

1. Login to the host server using the Oracle Revenue Management and Billing administrator User ID (default `cissys`). This is the same User ID that was used to install Oracle Utilities Application Framework.
2. Download the Oracle Revenue Management and Billing V2.6.0.0.0 Multiplatform package from the Oracle Revenue Management and Billing V2.6.0.0.0 media pack which is available on Oracle Software Delivery Cloud. A zip file is downloaded.
3. Unzip the downloaded file in the `<TEMPDIR>` directory.

Note:

You will need to have Java JDK installed on the machine used to unjar 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. This is the location of Java packages:

http://java.sun.com/products/archive/index.html.

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

The contents of the zip file include a directory named ORMB.V2.6.0.0.0.

7.2 Installing the Application

To install Oracle Revenue Management and Billing (ORMB) Version 2.6.0.0.0:

1. Login to the application server using the administrator's credentials.
2. Initialize the application environment (on which you want to install the application) using the following command:

   Linux:

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

   Windows:

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

   Where, `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed, and `$SPLENVIRON` or `%SPLENVIRON%` is the name of the application environment for which you want to set the environment variables.

3. Stop the application environment using the following command:

   Linux:

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

   Windows:

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

4. Set the Java Home path using the following command:

   Linux:

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

Note:

The <Java_Home> is the location where you have installed Java 1.8.

The above command is applicable only for Linux platform.

5. Change to the ORMB.V2.6.0.0.0 folder using the following command:

   Linux:

   ```
   cd <TEMPDIR>/ORMB.V2.6.0.0.0
   ```

   Windows:

   ```
   cd <TEMPDIR>\ORMB.V2.6.0.0.0
   ```

6. Execute the install utility using the following command:

   Linux:

   ```
   ./install.sh
   ```

   Windows:

   ```
   install.cmd
   ```

   The following message appears in the command line:

   ```
   Do you wish to proceed with the installation? (Y,N):
   ```

7. Type **Y** and then press **Enter**. A message appears informing you to type **P** if you want to proceed with the installation.
8. Type **P**, and then press **Enter**. The installation process might take some time to generate the WAR files. Once the build is deployed successfully, the following message appears in the command line:

   ```
   Do you wish to start the environment now? Y/N:
   ```

9. Type **N** and then press **Enter**.

Note:

If you want to set the advanced menu options, execute the configureEnv utility using the following command:

Linux:

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

Windows:

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

You cannot set the advanced menu options during the installation process. These options can be set only after the application is installed. For more information, refer to the Advanced Menu Options section.

10. Execute the `initialSetup` utility using the following command:

    Linux:

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

    Windows:

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

11. If you are using demo certificates, execute the following commands before starting the environment:

    Linux:

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

    Windows:

    ```
    cd %SPLEBASE%\bin
    perl demo_gen_cert.plx
    ```

7.3 Post Installation Tasks

Once you install Oracle Revenue Management and Billing (ORMB) Version 2.6.0.0.0, you need to apply the following patches on the application environment:

- MANDATORY PATCH 1 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26077327)
- MANDATORY PATCH 2 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26134252)
- UPDATE ORMB VERSION 2.6.0.0.0 ONLINE HELP (Patch Number: 26076937)

7.3.1 Applying the 26077327 Patch

Once you install ORMB, you need to apply the MANDATORY PATCH 1 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26077327). To apply the MANDATORY PATCH 1 FOR ORMB VERSION 2.6.0.0.0 patch:

1. Download the MANDATORY PATCH 1 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26077327) from My Oracle Support. A zip file is downloaded.
2. Unzip the downloaded file in your local folder. The contents include three files - `README.txt`, `MultiPlatform.zip`, and `Bug_26077327_Product_Fix_Design.pdf`.
3. Unzip the MultiPlatform.zip file in your local folder. The contents include the V2.6.0.0.0-26077327_MultiPlatform folder.
4. Change to the `V2.6.0.0.0-26077327_MultiPlatform` folder using the following command:

    Linux:

    ```
    cd <DESTINATION_FOLDER_1>/V2.6.0.0.0-26077327_MultiPlatform
    ```

    Windows:

    ```
    cd <DESTINATION_FOLDER_1>\V2.6.0.0.0-26077327_MultiPlatform
    ```

Note: The <DESTINATION_FOLDER_1> folder is the location where you have extracted the contents of the MultiPlatform.zip file.

The contents include a file named CCB.V2.6.0.0.0-26077327.jar and a folder named database.

5. Decompress the CCB.V2.6.0.0.0-26077327.jar file using the following command:

   jar -xvf CCB.V2.6.0.0.0-26077327.jar

   The contents include two folders - META-INF and CCB.V2.6.0.0.0-26077327.

6. Initialize the application environment (on which you want to install the patch) using the following command:

   Linux:

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

   Windows:

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

   Where,

   $SPLEBASE or %SPLEBASE% is the path where the application environment is installed and $SPLENVIRON or %SPLENVIRON% is the name of the application environment.

7. Change to the CCB.V2.6.0.0.0-26077327 folder using the following command:

   Linux:

   cd <DESTINATION_FOLDER_1>/V2.6.0.0.0-26077327_MultiPlatform/CCB.V2.6.0.0.0-26077327

   Windows:

   cd <DESTINATION_FOLDER_1>/V2.6.0.0.0-26077327_MultiPlatform\CCB.V2.6.0.0.0-26077327

8. Install the patch using the following command:

   Linux:

   ./installSF.sh

   Windows:

   installSF.cmd

7.3.2 Applying the 26134252 Patch

Once you apply the MANDATORY PATCH 1 FOR ORMB VERSION 2.6.0.0.0 patch, you need to apply the MANDATORY PATCH 2 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26134252). To apply the MANDATORY PATCH 2 FOR ORMB VERSION 2.6.0.0.0 patch:

1. Download the MANDATORY PATCH 2 FOR ORMB VERSION 2.6.0.0.0 (Patch Number: 26134252) from My Oracle Support. A zip file is downloaded.
2. Unzip the downloaded file in your local folder. The contents include three files - README.txt, MultiPlatform.zip, and Bug_26134252_Product_Fix_Design.pdf.

3. Unzip the MultiPlatform.zip file in your local folder. The contents include the V2.6.0.0.0-26134252_MultiPlatform folder.
4. Change to the `V2.6.0.0.0-26134252_MultiPlatform` folder using the following command:

   Linux:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-26134252_MultiPlatform
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_2>\V2.6.0.0.0-26134252_MultiPlatform
   ```

Note: The `<DESTINATION_FOLDER_2>` folder is the location where you have extracted the contents of the `MultiPlatform.zip` file.

   The contents include a file named `CCB.V2.6.0.0.0-26134252.jar` and a folder named `database`.

5. Decompress the `CCB.V2.6.0.0.0-26134252.jar` file using the following command:

   ```
   jar -xvf CCB.V2.6.0.0.0-26134252.jar
   ```

   The contents include two folders - `META-INF` and `CCB.V2.6.0.0.0-26134252`.

6. Initialize the application environment (on which you want to install the patch) using the following command:

   Linux:

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

   Windows:

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

   Where,

   `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed and `$SPLENVIRON` or `%SPLENVIRON%` is the name of the application environment.

7. Change to the `CCB.V2.6.0.0.0-26134252` folder using the following command:

   Linux:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-
   26134252_MultiPlatform/CCB.V2.6.0.0.0-26134252
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-
   26134252_MultiPlatform\CCB.V2.6.0.0.0-26134252
   ```

8. Install the patch using the following command:

   Linux:

   ./installSF.sh

   Windows:

   installSF.cmd

7.3.3 Applying the 26076937 Patch

Once you apply the MANDATORY PATCH 2 FOR ORMB VERSION 2.6.0.0.0 patch, you need to apply the UPDATE ORMB VERSION 2.6.0.0.0 ONLINE HELP patch (Patch Number: 26076937). To apply the UPDATE ORMB VERSION 2.6.0.0.0 ONLINE HELP patch:

1. Download the UPDATE ORMB VERSION 2.6.0.0.0 ONLINE HELP patch (Patch Number: 26076937) from My Oracle Support. A zip file is downloaded.
2. Unzip the downloaded file in your local folder. The contents include three files - `README.txt`, `MultiPlatform.zip`, and `Bug_26076937_Product_Fix_Design.pdf`.
3. Unzip the `MultiPlatform.zip` file in your local folder. The contents include the `V2.6.0.0.0-26076937_MultiPlatform` folder.
4. Change to the `V2.6.0.0.0-26076937_MultiPlatform` folder using the following command:

   Linux:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-26076937_MultiPlatform
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_2>\V2.6.0.0.0-26076937_MultiPlatform
   ```

Note: The `<DESTINATION_FOLDER_2>` folder is the location where you have extracted the contents of the `MultiPlatform.zip` file.

   The contents include a file named `CCB.V2.6.0.0.0-26076937.jar`

5. Decompress the `CCB.V2.6.0.0.0-26076937.jar` file using the following command:

   ```
   jar -xvf CCB.V2.6.0.0.0-26076937.jar
   ```

   The contents include two folders - `META-INF` and `CCB.V2.6.0.0.0-26076937`.

6. Initialize the application environment (on which you want to install the patch) using the following command:

   Linux:

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

   Windows:

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

   Where,

   `$SPLEBASE` or `%SPLEBASE%` is the path where the application environment is installed and `$SPLENVIRON` or `%SPLENVIRON%` is the name of the application environment.

7. Change to the `CCB.V2.6.0.0.0-26076937` folder using the following command:

   Linux:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-
   26076937_MultiPlatform/CCB.V2.6.0.0.0-26076937
   ```

   Windows:

   ```
   cd <DESTINATION_FOLDER_2>/V2.6.0.0.0-
   26076937_MultiPlatform\CCB.V2.6.0.0.0-26076937
   ```


8. Install the patch using the following command:

   Linux:

   ./installSF.sh

   Windows:

   installSF.cmd

9. Start the application environment using the following command:

   Linux:

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

   Windows:

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

   A log file is generated. It indicates whether the application environment has started successfully or not. If any error occurred during startup, the same is recorded in the log file. By default, the log file is stored in the `$SPLSYSTEMLOGS (%SPLSYSTEMLOGS%` on Windows) directory. If the startup failed, identify the problem by reviewing the logs, and start up the environment manually while you are connected to the new environment in your online session.

7.4 Installing User Documentation

User manuals and other technical documents are available in the Portable Document Format (PDF). You can download Oracle Revenue Management and Billing release specific documentation library (for example, Oracle Revenue Management and Billing Version 2.5.X.X.X Documentation Library) using the following URL:

http://www.oracle.com/technetwork/indexes/documentation/fsgbu-1364781.html

The online help is provided in the HTML format. It is located inside the Oracle Revenue Management and Billing application server installation package. It is automatically installed and can be launched from the user interface. The online help files are available under the `applications` directory. In case of Oracle WebLogic application server, the online help is packaged in the file named ohelp.ear. The online help is provided in English (ENG).

7.5 Operating the Application

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

7.6 Installing Service Packs and Patches

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

Between services packs, Oracle Revenue Management and Billing releases patches to fix individual bugs. For information on installing patches, see knowledge base article ID 974985.1 on My Oracle Support. Service packs and patches can be downloaded from My Oracle Support.

8. Additional Tasks

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

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Generating the Application Viewer
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Configuring Secure Sockets Layer (SSL)
- Setting Up an Application Keystore
- Deploying Inbound Web Services (IWS)
- Domain Templates (Linux WebLogic 12.1.3.x only)
- Database Patching
- Invoking Custom Batch Notifier

8.1 Importing Self-Signed Certificates

If you are using self-signed certificates and the inbound web services (IWS) feature, then it is necessary to import these certificates into the ouaf truststore file. Perform the following commands:

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

   Linux:

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

   For example:

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

   Windows:

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

   For example:

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

3. Execute the following script to generate all information.

   Linux:

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

   Windows:

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

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

8.2 Customizing Configuration Files

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

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

1. Locate the `hibernate.properties.template` file in the `$SPLEBASE/templates` directory
2. Copy the file and rename it to `cm.hibernate.properties.template`.
3. Make the required changes in the `cm.hibernate.properties.template file`.
4. Update the application war file with the latest changes by executing the following command:

   Linux:

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

   Windows:

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

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

8.3 Centralized Properties Customization

This feature gives the ability to add, modify, and remove properties in one file. The properties are propogated to the specified property files. The template process, which is part of the **initialSetup** step, will look at the **etc/cm_properties.ini** file (this can be created as a Customer Customization). If the file exists, the content will be processed for the relevant properties.

Note: Product teams might use the **etc/<PROD>_properties.ini** file format (where <PROD> could be one of the list of installed products included in the **etc/PRODUCT.txt** file). If it exits, it will be processed as well.

cm_properties.ini examples

Type of entries that could be included into the **cm_properties.ini** file and relevant type of action:

`<PROPERTIES_FILE>:<PROPERTY_NAME>=<VALUE>`

- Override <PROPERTY_NAME> in <PROPERTIES_FILE> with <VALUE> if exists.
- Insert <PROPERTY_NAME> in <PROPERTIES_FILE> with <VALUE> if it doesn't exists.

`<PROPERTY_NAME>=<VALUE>`

- Override <PROPERTY_NAME> in all property files with <VALUE>, if <PROPERTY_NAME> exists

`<PROPERTIES_FILE>:<PROPERTY_NAME>=[DELETE]`

- Remove <PROPERTY_NAME> from <PROPERTIES_FILE> if it exists.

`<PROPERTY_NAME>=[DELETE]`

- Remove <PROPERTY_NAME> from all property files, if <PROPERTY_NAME> exists.

Template example -> **hibernate.service.properties.template**:

```
hibernate.user = @DBUSER@
hibernate.pass = @DBPASS@
hibernate.ucp.validate_connection = true
```

ENVIRON.INI example:

```
DBUSER=cisadm
```

cm_properties.ini example:

```
hibernate.service.properties.template:hibernate.user=clouduser
hibernate.password=cloudpwd
hibernate.iws.properties.template:hibernate.user=clouduser
hibernate.service.properties.template:hibernate.ucp.validate_conn
ection=[DELETE]
hibernate.service.properties.template:new.property=test
```

hibernate.service.properties generated properties file result:

```
### The following line was overridden because of the cm_properties.ini file setting:
hibernate.user=clouduser
### The following line was overridden because of the cm_properties.ini file setting:
hibernate.password=cloudpwd
### The following line was deleted because of the cm_properties.ini file setting:
# hibernate.ucp.validate_connection = true
### The following line was appended because of the cm_properties.ini file setting:
new.property = test
```

hibernate.iws.properties generated properties file result:

```
### The following line was overridden because of the cm_properties.ini file setting:
hibernate.user=clouduser
### The following line was overridden because of the cm_properties.ini file setting:
hibernate.password=cloudpwd
```


8.4 Generating the Application Viewer

You may extend application viewer capabilities within an environment by generating additional items. These items that can be generated include information about algorithm types, algorithms, maintenance objects, and data dictionary information. The Javadoc indexes are also rebuilt.

To generate the additional items in the application viewer:

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

   Linux:

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

   For example:

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

   Windows:

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

   For example:

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

3. Execute the following script to generate all information:

   Linux:

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

   Windows:

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

4. Restart your application.

8.5 Building Javadocs Indexes

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

Perform the following to rebuild the Javadoc indexes.

Windows:

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

Linux:

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

8.6 Configuring the Environment for Batch Processing

See *Oracle Revenue Management and Billing Server Administration Guide* for information on configuring the environment for batch processing.

8.7 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 Utilities application from the browser with the parameters: https://<hostname>:<port>/cis.jsp?utilities=true&tools=true. From the Admin menu, select Navigation Key. Add the above Navigation Key with its corresponding URL Override path. The syntax for the URL path is:

Windows:

https://<host name>:<websslport>/<Web Context>/cm/<customer_logo_file>.gif

Linux:

https://<host name>:<websslport>/<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`.

8.8 Configuring Secure Sockets Layer (SSL)

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

Follow these steps to configure Secure Sockets Layer:

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

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

2. Store the identity and trust.

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

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

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

   For additional information on configuring keystores, refer to the following URL:

http://docs.oracle.com/middleware/1213/wls/WLACH/taskhelp/security/ConfigureKeystoresAndSSL.html

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

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

   For additional information, refer to the following topics:

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

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

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

8.9 Setting Up an Application Keystore

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

Note: It is different from the Oracle Utilities Application Framework (also called the system) keystore and the WebLogic SSL keystores.

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

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

https://docs.oracle.com/javase/8/docs/technotes/tools/unix/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:
   - 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(SPLEBA
     SE)@/. mykeystore
     com.oracle.ouaf.keystore.password=<keystore_password>
     ```

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

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

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

8.10 Deploying Inbound Web Services (IWS)

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

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

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

For deploying IWS, please follow the steps below:

Linux:

1. Enable the Web Services functionality as shown below:
   a. `cd $SPLEBASE/bin`
   b. Execute `configureEnv.sh -a`
   c. Type 50 and then set the value of the Enable Web Services Functionality menu option to true.
   d. Enter **P** to process.
2. Execute initialSetup.sh as shown below:
   a. `cd $SPLEBASE/bin`
   b. `ksh ./initialSetup.sh`
3. Set the classpath as shown below:
   a. `$ CLASSPATH=$WL_HOME/server/lib/weblogic.jar:$CLASSPATH`
   b. `$ export CLASSPATH`
   c. `$ cd $SPLEBASE/bin`
4. Execute the following command:
   a. `$ java weblogic.Admin -username <username> -password <password> STOREUSERCONFIG -userconfigfile $SPLEBASE/etc/.wlsuserconfig - userkeyfile $SPLEBASE/etc/.wlsuserkey`
   b. Select Y.
5. Execute the below step in `$SPLEBASE/bin`. Please note that the application server should be up before running the below command.
   a. `ksh ./initialSetup.sh -i`

Note: You need to execute the above command to import certificates.

   b. `ksh ./iwsdeploy.sh`

WINDOWS:

1. Enable the Web Services functionality as shown below:
   `cd %SPLEBASE%\bin`
2. Execute the following command:
   `configureEnv.cmd -a`
3. Type 50 and then set the value of the Enable Web Services Functionality menu option to true.
4. Enter **P** to process.
5. Execute initialSetup.cmd as shown below:
   `cd %SPLEBASE%\bin initialSetup.cmd`

6. Set the classpath as shown below:

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

7. Execute the following command:

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

8. Select Y.
9. Execute the below step in `%SPLEBASE%\bin`. Please note that the application server should be up before running the below command.

```
a. initialSetup.cmd –i
```

Note: You need to execute the above command to import certificates.

```
b. iwsdeploy.cmd
```

8.11 Domain Templates (Only for Linux WebLogic 12.1.3.x or 12.2.1.x Combination)

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

High Level Steps Overview

- Install and configure application stack (OUAF and ORMB)

Note: You need to configure the environment to deploy in the ear format.

- Review domain templates (Simple/Complex)
- Execute config.sh and enter the path of the domain template file
- Configure domain
- Complete domain configuration

Note: Configure nodemanager.properties and setDomainEnv.sh.

- Update SPLEBASE (ENVIRON.INI)

The product installation includes the following predefined WebLogic Server Domain templates. The following delivered domain templates are located at `$SPLEBASE/tools/domaintemplates`:

- Oracle-Utilities-Simple-Linux-12.1.3.0.0.jar
- Oracle-Utilities-Complex-Linux-12.1.3.0.0.jar
- Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar (Generic)

The Simple Domain Template is for use with one machine which is not included in a weblogic cluster. This domain configuration is similar to current delivered embedded splapp domain with the exception that there will be two weblogic servers (utilities_server1 and an "Admin Server").

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

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

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

Note:

For WebLogic 12.1.3.x and 12.2.1.x, the Users and Groups must match the values delivered with the embedded domain.

For WebLogic 12.2.1.x, set the password of SYSUSER and ouafjndi through the WebLogic console.

- JTA Settings
- Node Manager Settings
- WebLogic Server
- JRF Restricted (Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar only)
- JMS Global Flush Queues (Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar only)

8.11.1 Configure Node Manager Properties to Allow SSL (Only for WebLogic 12.1.3.x Templates)

You will need to update the `nodemanager.properties` file with the correct Private Key Passphrase. Set the value of the following properties to “0uaf_demo_c3rt” in the `nodemanager.properties` file which is located at `DOMAIN_HOME/nodemanager`:

- CustomIdentityKeyStorePassPhrase
- CustomIdentityPrivateKeyPassPhrase

Note: When the node manager is started, the values in the file will be encrypted. These property values must be updated in the production environments based on your configuration.

8.11.2 Configure setDomainEnv.sh Script (Only for WebLogic 12.1.3.x Templates)

You will need to set the appropriate value for SPLEBASE. Under the `DOMAIN_HOME/bin` location, update the `setDomainEnv.sh` file to add the following line:

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

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

8.11.3 Configure setUserOverrides.sh Script (Only for WebLogic 12.2.1.x Templates)

If required, you can change the environment variables in the `setUserOverrides.sh` file.

8.11.4 Update Domain Home Location

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

1. Initialize the environment using the following command:

   ```
   splenviron.sh –e <Environment_Name>
   ```

2. Execute the following command:

   ```
   configureEnv.sh –a
   ```

3. Select the 52. Advanced Web Application Configuration menu.
4. Set the value for the **Domain Home Location** menu option.

Note: When the value for the **Domain Home Location** menu option is defined, you need to use the native WebLogic tools for maintenance, such as for starting, stopping, deployment, and undeployment.

5. Enter **P** to proceed.

8.11.5 Update setDomainEnv.sh Script (Only for WebLogic 12.1.3.x Templates)

Edit the `setDomainEnv.sh` file to change the version of the following JAR files:

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

8.12 Database Patching

The database patching utility is delivered under SPLEBASE. This utility is Java based, therefore you are able to create a standalone package which helps to install database patches on a separate server that has Java 8 installed. You can also install database patches using the components that are delivered under SPLEBASE without the need to move the database patching utility to a different server.

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

To generate the jar file to install database patches on a separate sever:

1. Initialize a command shell:

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

   Linux:

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

   In the following example, replace the variables:

   - $SPLEBASE with the full directory name where you have installed the application
   - $SPLENVIRON with the name you gave to the environment at the time of installation

   To initialize the environment, enter:

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

   For example:

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

   Windows:

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

   In the below example, you should replace the following variables:

   - %SPLEBASE% with the full directory name where you have installed the application
   - %SPLENVIRON% with the name you gave to the environment at the time of installation

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

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

   For example:

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

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

   Linux:

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

   Windows:

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

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

3. Transfer the generated jar(`db_patch_standalone.jar`) to the Windows/Linux box where you want to run the database patching utility.
4. Extract the contents of the JAR file:

   ```
   jar -xvf db_patch_standalone.jar
   ```


Note: You must have Java 8 JDK installed on the machine to use the jar command. Be sure to install the JDK that is supported on your platform.

Overview of Database Patching Application

The database patching utility requires you have Java 8 JDK installed on the machine where you want to apply the database patch. The patch application process will perform following items to account for executing patch application under SPLEBASE or on a standalone server.

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

- Checks to see if the environment variable $SPLEBASE is set. If the $SPLEBASE variable is set, the utility uses the libraries under $SPLEBASE to apply the patch.
- When the $SPLEBASE is not set, the utility checks to see if the TOOLSBIN environment variable is set. If the TOOLSBIN is set, the utility uses the libraries under the TOOLSBIN location.
- When both SPLEBASE and TOOLSBIN environment variables are not set, the utility prompts for the location of the TOOLSBIN.

The TOOLSBIN is the location where the `ouafDatabasePatch.sh[cmd]` script is available.

Linux Example: The TOOLSBIN location would be set to `/ouaf/dbpatch/bin`.

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

Linux Sample: Database Patch Application (`ouafDatabasePatch.sh`)

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

- Sample Execution – Passing a Password

  ```
  ./ouafDatabasePatch.sh -x ouafadm -p "-t O -d CISADM_Z1_12C_43040_BLD001, slc04lds:1522:Z143Q12C"
  ```

- Sample Execution – Prompting for a Password

  ```
  ./ouafDatabasePatch.sh -p "-t O -d CISADM_Z1_12C_43040_BLD001, slc04lds:1522:Z143Q12C"
  ```

- Sample Execution - Passing in the TOOLSBIN location

  ```
  /ouafDatabasePatch.sh –u
  ```

Linux Sample Usage:

```
ouafDatabasePatch.sh [-h] [-u] [-v] [-x] [-t tools dir] [-p ouafparms]
```

Where,

Command Line Option	Description
-h	Used to display help of the ouafDatabasePatch utility.
-u	Used to display usage of the ouafDatabasePatch utility.
-v	Used to display version of the ouafDatabasePatch utility.
-x	Used to specify password for the ouafDatabasePatch utility.

Command Line Option	Description
-b	Used to specify location of the TOOLSBIN directory.
-p	Used to specify parameters for the `ouafDatabasePatch` utility. They must be enclosed within quotes

Windows Example: The TOOLSBIN location would be set to `c:\ouaf\dbpatch\bin`.

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

Windows Sample: Database Patch Application (`ouafDatabasePatch.cmd`)

- Sample Execution – Passing a Password

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

- Sample Execution – Prompting for a Password

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

- Sample Execution - Passing in the TOOLSBIN location

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

Windows Sample Usage:

```
ouafDatabasePatch.cmd[-h] [-u] [-v] [-x] [-b tools dir] [- p ouafparms]
```

Where,

Command Line Option	Description
-h	Used to display help of the ouafDatabasePatch utility.
-u	Used to display usage of the ouafDatabasePatch utility.
-v	Used to display version of the ouafDatabasePatch utility.
-x	Used to specify password for the ouafDatabasePatch utility.
-b	Used to specify location of the TOOLSBIN directory.
-p	Used to specify parameters for the ouafDatabasePatch utility. They must be enclosed within quotes

8.13 Invoking Custom Batch Notifier

You need to do this additional task to ensure that the To Dos are generated once the following batches are executed:

- Upload and Validate Usage Data File (C1-ODFU)
- Billable Charge Creation (C1-ODBCH)
- Adhoc Billing (C1-FABL)
- Freeze and Complete Adhoc Bills (C1-FCADH)
- Any other standard or custom batch which is configured to generate notification once the batch is completed.

To generate custom notification once a batch is completed, you need to do the following:

1. Add the following line in the `../$SPLEBASE/templates/threadpoolworker.properties.template` file:

   ```
   com.splwg.batch.custom.notifier=com.splwg.ccb.domain.batch.CustomBatchNotifier
   ```

2. Re-initialize the environment using the following command:

   Linux:

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

   Windows:

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

3. Restart your application.

Appendix A : Application Framework Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Revenue Management and Billing. These patches are available in the rollup pack named Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for RMB V2.6.0.0.0. The BUGLIST.txt file in the `FW-V4.3.0.4.0-Rollup\Application` directory lists the bugs for which patches are available in the rollup pack.

Appendix B : ORMB V2.6.0.0.0 Bug Fixes

To view a list of bugs fixed in the current release, refer to *Oracle Revenue Management and Billing Version 2.6.0.0.0 Release Notes*.

Appendix C : License and Copyright Notices

This section provides license and copyright information for the associated products. It includes the following notices:

- Notice Concerning Usage of ANTLR
- Notice Concerning Usage of Apache Software
- Notice Concerning Usage of ASM
- Notice Concerning Usage of Concurrent
- Notice Concerning Usage of DOM4J
- Notice Concerning Usage of International Components for Unicode (ICU4J)
- Notice Concerning Usage of Jaxen
- Notice Concerning Usage of JQuery
- Notice Concerning Usage of SLF4J
- Notice Concerning Usage of Staxmate
- Notice Concerning Usage of XMLPULL
- Notice Concerning Usage of XStream
- Notice Concerning Usage of YUI

C.1 Third-Party Products

The following sections provide notices and information about the third party products indicated.

C.1.1 Notice Concerning Usage of ANTLR

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C.1.2 Notice Concerning Usage of Apache Software

The following files are covered under the Apache 2.0 license:

- apache-xmlbeans-2.6.0.jar
- bsf-2.4.0.jar
- castor-1.3.2-core.jar
- castor-1.3.2-xml-schema.jar
- castor-1.3.2-xml.jar
- cglib-3.1.jar
- commons-logging-1.2.jar
- ehcache-core-2.5.2.jar
- commons-beanutils-core-1.8.3.jar
- commons-cli-1.1.jar
- commons-codec-1.9.jar
- commons-collections-3.2.2.jar
- commons-fileupload-1.3.2.jar
- commons-httpclient-3.0.1.jar
- commons-io-1.3.2.jar
- commons-lang-2.2.jar
- groovy-2.4.5.jar
- groovy-xml-2.4.5.jar
- httpclient-4.5.1.jar
- httpcore-4.4.3.jar
- jackson-core-asl-1.9.2.jar
- jackson-jaxrs-1.9.2.jar
- jackson-mapper-asl-1.9.2.jar
- jackson-xc-1.9.2.jar
- jettison-1.3.8.jar
- joda-time-2.3.jar
- log4j-1.2.17.jar

- org.apache.http.components.httpclient-4.1.2.jar
- org.apache.http.components.httpclient-cache-4.1.2.jar
- org.apache.http.components.httpcore-4.1.2.jar
- org.apache.http.components.httpmime-4.1.2.jar
- serializer-2.7.2.jar
- stax2-2.1.jar
- stax2-api-3.0.4.jar
- trinidad-api-2.1.1.jar
- trinidad-impl-2.1.1.jar
- velocity-1.7.jar
- wstx-asl-3.2.7.jar
- xalan-2.7.2.jar

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