

Oracle Utilities Customer Care and Billing

Installation Guide

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Oracle Utilities Customer Care and Billing Installation Guide

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Preface

This guide provides an overview of installing Oracle Utilities Customer Care and Billing and is intended for anyone interested in the installation process. This section includes:

- [Related Documents](#)
- [Updates to Documentation](#)
- [Conventions](#)
- [Additional Resources](#)

To complete installation you should have:

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

Related Documents

For more information, refer to these Oracle documents:

Installation Guides and Release Notes

- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Release Notes*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Quick Install Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Installation Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Database Administrator's Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Optional Products Installation Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Licensing Information User Manual*

Administrative and Business User Guides

- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Administrative User Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Business User Guide*
- *Oracle Utilities Customer To Meter V2.6.0.0.0 Administrative User Guide*
- *Oracle Utilities Customer To Meter V2.6.0.0.0 Business User Guide*

Supplemental Documents

- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Server Administration Guide*
- *Oracle Utilities Customer Care and Billing V2.6.0.0.0 Security Guide*

Updates to Documentation

This documentation is provided with the version of the product indicated. Additional and updated information about the operations and configuration of the product is available from the Knowledge Base section of My Oracle Support (<http://support.oracle.com>). Please refer to My Oracle Support for more information.

Conventions

The following text conventions are used in this document:

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

Additional Resources

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

Chapter 1

Overview

This chapter provides an overview of the Oracle Utilities Customer Care and Billing installation.

Installation Overview

Installing Oracle Utilities Customer Care and Billing involves the following steps:

1. Review the different tiers of the application architecture as described in [Chapter 2: Application Architecture Overview](#).
2. Understand the hardware requirements for installing the application and the supported platforms for the application and database servers as described in [Chapter 3: Supported Platforms and Hardware Requirements](#).

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

3. Install the database as described in the document *Oracle Utilities Customer Care and Billing Database Administrator's Guide*.
4. Plan your installation as described in [Chapter 4: Planning the Installation](#).
5. Install all required third-party software as described in [Chapter 5: Installing Application Server Prerequisite Software](#). The required software is listed for each supported combination of operating system and application server.
6. Install the framework for the application as described in [Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework](#).
7. Install Oracle Utilities Customer Care and Billing as described in [Chapter 7: Installing the Application Server Component of Oracle Utilities Customer Care and Billing](#).
8. Follow the installation guidelines described in [Chapter 9: Additional Tasks](#).

Chapter 2

Application Architecture Overview

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

Application Architecture

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

Please refer to the *Oracle Utilities Customer Care and Billing Server Administration Guide* for a more detailed description of the application architecture and individual tiers.

Tier 1: Desktop/Client, or Presentation Tier

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

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

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

Tier 3: Database, or Persistence Tier

This tier is implemented in a database server. The database server stores data maintained by the Oracle Utilities Customer Care 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.

Chapter 3

Supported Platforms and Hardware Requirements

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

- [Software and Hardware Considerations](#)
- [Requirements by Tier](#)
- [Supported Platforms](#)
- [Application Server Memory Requirements](#)
- [Support for Software Patches and Upgrades](#)

Software and Hardware Considerations

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

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

- On which hardware platform and operating system will Oracle Utilities Customer Care and Billing be deployed?
- Which web server product will Oracle Utilities Customer Care and Billing deploy on?
- Which database product will Oracle Utilities Customer Care and Billing deploy on?
- Do you plan to deploy multiple Oracle Utilities Customer Care and Billing instances on the same physical server?
- How do you plan to deploy Oracle Utilities Customer Care 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 the document *Oracle Utilities Application Framework Architecture Guidelines*, available on My Oracle Support (Article ID 807068.1).

The final hardware and software decisions must comply with the specific requirements of the Oracle Utilities Customer Care and Billing product, as described in the rest of this chapter.

Requirements by Tier

The application is deployed on multiple Tiers:

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

Tier 1, Desktop: Software and Hardware Requirements

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

* The recommended configuration improves client performance.

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

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

Please refer to [Supported Platforms](#) 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 the 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.

Tier 3, Database Server: Software and Hardware Requirements

See the section [Supported Platforms](#) for supported database servers.

Supported Platforms

The installation has been tested to operate on many operating system, application server, and database server combinations. For the software requirements for each of these combinations, see [Chapter 5: Installing Application Server Prerequisite Software](#) for more information.

Operating Systems and Application Servers

The table below details the MINIMUM operating system and application server combinations on which this version of Oracle Utilities Customer Care and Billing is supported.

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

Refer to the [Product Support Matrix \(Doc ID 1454143.1\)](#) on Oracle Support to determine if support for newer versions of the listed products have been added.

Please note the following:

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

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

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

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

Windows Server

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

Weblogic Server

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

Oracle Database Server

The following Oracle Database Server editions are supported:

- Oracle Database Enterprise Edition
- Oracle Database Standard Edition

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

Oracle VM Support

This version of Oracle Utilities Customer Care and Billing is supported on Oracle VM Server for x86 for supported releases of Oracle Linux and Microsoft Windows operating systems.

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

Application Server Memory Requirements

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

Location	Size	Usage
\$\$PLEBASE	minimum	This is the location where the application and framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files.
\$\$PLAPP	minimum	This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected.
Location of the application web work files on the web servers	minimum	This location is used by various web server vendors to expand the application. It should be considered when installing these products. Refer to the individual web server documentation to determine the location of the temporary files.
Installation Temporary Area	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.

Support for Software Patches and Upgrades

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

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

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

Chapter 4

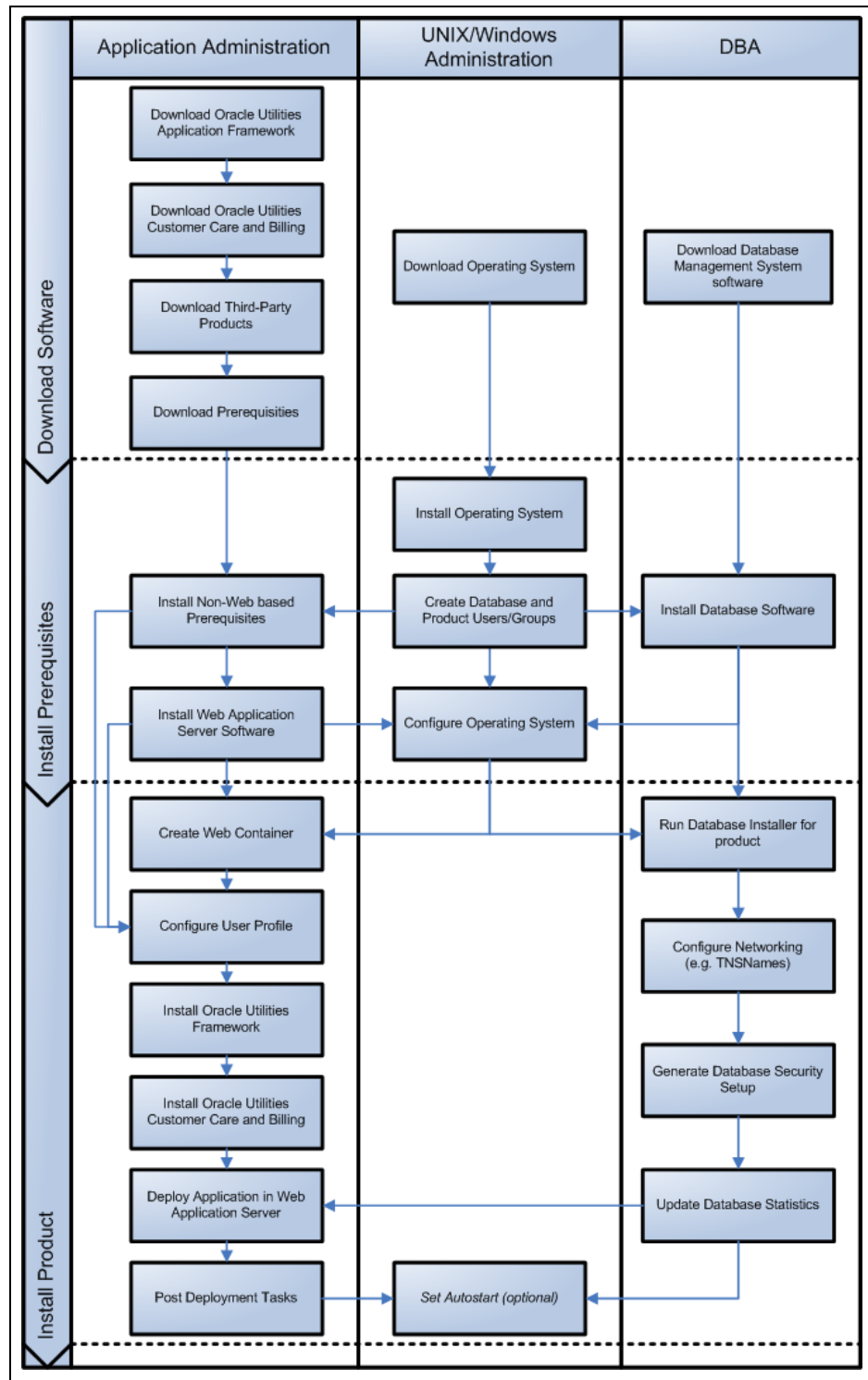
Planning the Installation

This chapter provides information for planning an Oracle Utilities Customer Care and Billing installation, including:

- [Installation and Configuration Overview](#)
- [Before You Install](#)
- [Installation Checklist](#)
- [Installation Menu Functionality Overview](#)
- [Installation and Configuration Worksheets](#)

Installation and Configuration Overview

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



Before You Install

Refer to My Oracle Support for up-to-date additional information on installing Oracle Utilities Customer Care and Billing.

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer Care and Billing. Refer to the *Oracle Utilities Customer Care and Billing Release Notes* for more information.

Embedded vs Native/Clustered Installation

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

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

Application Server Clustering

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

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

Native Mode in WebLogic

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

Directory Names

Directory cannot contain whitespace characters.

Installation Checklist

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

1. Install the database as described in the *Oracle Utilities Customer Care and Billing Database Administrator's Guide*.
2. Create Group/User ID.
3. Install the prerequisite software (for complete details about installing and configuring the prerequisite third-party software for your specific platform, see [Chapter 5: Installing Application Server Prerequisite Software](#)):
 - Oracle client 12c
 - Java 8
 - Hibernate 4.1.0
4. Install optional software.
5. Install web server.
 - Oracle WebLogic 12.1.3+ / Oracle WebLogic 12.2.1+

Note: If you are upgrading and you are currently running Oracle Application Server please contact your Global Support Representative.
6. Verify that the software installed.
7. Set up environment variables.
8. Install Oracle Utilities Application Framework.
9. Install Oracle Utilities Application Framework prerequisite single fixes.
10. Install Oracle Utilities Customer Care and Billing.
11. Deploy Oracle Utilities Customer Care and Billing application.
12. Complete post-installation tasks.
13. Optional third-party product integration (such as web self service or reporting tools).

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 is displayed in turn on the screen, along with a prompt so that you can type the desired value for the option, if it is not the same as the default or current value.

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

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

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

Please also note the following:

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

Installation Menu Functionality Details

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

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

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

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

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

The following prompt will appear when executing the installation utility:

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

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

Encryption Methods

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

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

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

Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in the [Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework](#).

Note: Some web application server information will not be available until the software installation steps have been completed as described in the [Chapter 5: Installing Application Server Prerequisite Software](#).

Refer to the *Oracle Utilities Customer Care and Billing Server Administration Guide* for additional details (default, valid values, usage, etc.), as applicable.

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

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

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

Menu Option	Name Used in Documentation	Customer Install Value
OIM OAM Enabled Environment	OPEN_SPML_ENABLED_ENV	

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

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

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

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

Menu Block 2: Keystore Options

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

```
<SPLEBASE>/ks/.ouaf_keystore
```

```
<SPLEBASE>/ks/.ouaf_storepass
```

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

Please review the section on configuring the OUAF Keystore in the *Oracle Utilities Customer Care and Billing Security Guide* for information on setting up the keystore properly.

Keystore options include:

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

Menu Block 50: Environment Installation Options

Environment installation options include:

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

Menu Block 1: Environment Description

The environment description menu option includes:

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

Menu Block 2: [WebLogic] Business Application Server Configuration

WebLogic Business Application Server configuration options include:

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

Menu Block 3: [WebLogic] Web Application Server Configuration

WebLogic Web Application Server configuration options include:

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

Menu Block 4 - Database Configuration

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

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

Menu Block 5 - General Configuration Options

The general configuration options include:

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

Menu Option	Name Used in Documentation	Customer Install Value
RMI Port number for JMX Web	WEB_JMX_RMI_PORT_PERFORMANCE	
JMX Enablement System User ID	BSN_JMX_SYUSER	
JMX Enablement System Password	BSN_JMX_SYSPASS	
Coherence Cluster Name	COHERENCE_CLUSTER_NAME	
Coherence Cluster Address	COHERENCE_CLUSTER_ADDRESS	
Coherence Cluster Port	COHERENCE_CLUSTER_PORT	
Coherence Cluster Mode	COHERENCE_CLUSTER_MODE	

Menu Block 6 - SSL Certificate Keystore (WebLogic Only)

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

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

Menu Block 7 - OUAF TrustStore Options

The OUAF truststore configuration is required for IWS.

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

Advanced Menu Options

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

Unix:

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

Windows

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

Menu Block 50 - WebLogic Advanced Environment Miscellaneous Configuration

WebLogic advanced environment miscellaneous configurations include:

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

Menu Option	Name Used in Documentation	Customer Value Install
Enable Batch Edit 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	
GIS WebLogic System Password	GIS_WLSYSPASS	
Online Display Software Home	ONLINE_DISPLAY_HOME	
Max Queries To Hold In Cache Across All Threads	XQUERIES_TO_CACHE	
Seconds Timeout Flush Cache Completely	XQUERY_CACHE_FLUSH_TIMEOUT	
Cloud Restriction URLs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Cloud White List Full Path	CLOUD_WHITE_LIST_PATH	
Cloud Custom White List Full Path	CLOUD_CUSTOM_WHITE_LIST_PATH	

Menu Block 51 - WebLogic Advanced Environment Memory Configuration

WebLogic advanced environment memory configurations include:

Menu Option	Name Used in Documentation	Customer Value Install
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	

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

Menu Block 51 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Application Cache Settings	WEB_I2_CACHE_MODE	
Web Server Port Number	WEB_WLPORT	
WebLogic Overload Protection	WLS_OVERRIDE_PROTECT	
Domain Home Location	WLS_DOMAIN_HOME	
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	
Strip HTML Comments	STRIP_HTML_COMMENTS	
Authentication Login Page Type	WEB_WLAUTHMETHOD	
Web Form Login Page	WEB_FORM_LOGIN_PAGE	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_PAGE	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE	

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

Menu Block 53 - Advanced Web Application Configuration

Advanced web application configurations include:

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

Menu Block 54 - WebLogic Diagnostics

WebLogic diagnostic options include:

Menu Option	Name Used in Documentation	Customer Install Value
Diagnostic Context Enabled	WLS_DIAGNOSTIC_CONTEXT_ENABLED	
Diagnostic Volume	WLS_DIAGNOSTIC_VOLUME	
Built-in Module	WLS_DIAGNOSTIC_BUILT_IN_MODULE	

Menu Block 53 - OIM Configuration Settings

OIM Configuration Settings include:

Menu Option	Name Used in Documentation	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_DEBUG_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	

Menu Block 55 - URI, File and URL Related Options

URI, File and URL Related Options include:

Menu Option	Name Used in Documentation	Customer Install Value
Restriction URLs Enable	CLOUD_RESTRICTION_URLS_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	

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

Chapter 5

Installing Application Server Prerequisite Software

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

- [AIX Application Server](#)
- [Oracle Linux 6.5+/7.x and Red Hat Linux 6.5+/7.x Application Server](#)
- [Solaris 11 Application Server](#)
- [Windows 2012 Application Server](#)
- [HP-UX 11.31 Application Server](#)

AIX Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
AIX 7.2 (64-bit) TL0	POWER 64-bit	Oracle WebLogic (12.1.3.0+ / 12.2.1+) 64-bit version

Web/Application Server Tier

AIX 7.2 TL0 Operating System Running on Power5 and Power6 Architecture

UNIX Administrator Userid

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

Description	Default Value	Customer Defined Value
CCB Administrator UserID	cissys	
CCB 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 userid is the only one given access to the installed files.

1. Create a group called cisusr (user group).
2. Create a user called cissys. Primary group cisusr. Set the primary shell for the cissys user to Korn Shell.

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 077 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 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, the use cissys to stop it as well.

Oracle 12c Client - Runtime Option

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

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

IBM Java Software Development Kit version 8.0 or 7.1 (64-bit)

Installation of Java as a prerequisite is only needed if you are using Oracle WebLogic as a Web application server.

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

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

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

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

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing. For instructions to install Hibernate 4.1.0, refer to the [Installing Hibernate 4.1.0](#) section.

Oracle WebLogic Server 12.1.3.0+ / 12.2.1+ (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+ / 12.2.1+.

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

Oracle Linux 6.5+/7.x and Red Hat Linux 6.5+/7.x Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
Oracle Linux 6.5+/7.x (64-bit) Red Hat Enterprise Linux 6.5+/7.x (64-bit)	x86_64	Oracle WebLogic 12.1.3.0+ / 12.2.1+ (64-bit) version

Web/Application Server Tier

Oracle Enterprise Linux 6.5+/7.x or Red Hat Enterprise Linux 6.5+/7.x Operating System Running on x86_64 64-bit Architecture

UNIX Administrator UserID

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

Description	Default Value	Customer Defined Value
CCB Administrator UserID	cissys	
CCB 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 userid 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 077 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 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, the use cissys to stop it as well.

Oracle 12.1.0.1.0 Client - Runtime Option

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

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

Oracle Java Development Kit Version 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 Utilities Customer Care and Billing. For instructions to install Hibernate 4.1.0, refer to the [Installing Hibernate 4.1.0](#) section.

Oracle WebLogic Server 12.1.3.0+ / 12.2.1+ (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+ / 12.2.1+.

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

Solaris 11 Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
Solaris 11 (64-bit)	SPARC	Oracle WebLogic 12.1.3.0+ / 12.2.1+ (64-bit) version

Web/Application Server Tier

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

UNIX Administrator UserID

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

Description	Default Value	Customer Defined Value
CCB Administrator UserID	cissys	
CCB 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 userid 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 077 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 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, the use cissys to stop it as well.

Oracle 12.1.0.1.0 Client

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

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

Oracle Java Development Kit Version 7.0 Update 60 or Later (64-Bit)

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

<http://www.oracle.com/technetwork/java/javase/downloads/jre7-downloads-1880261.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.

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 Utilities Customer Care and Billing. For instructions to install Hibernate 4.1.0, refer to the [Installing Hibernate 4.1.0](#) section.

Oracle WebLogic Server 12.1.3.0+ / 12.2.1+ (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+ / 12.2.1+.

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

Windows 2012 Application Server

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

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

Supported Application Servers

Operating System	Chipsets	Application Server
Window Server 2012	x86_64	Oracle WebLogic 12.1.3.0+ / 12.2.1+ (64-bit) version

Web/Application Server Tier

File and Directory Names Limitations

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

Oracle Client 12.1.0.1.0 - Runtime Option

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

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

Oracle Java Development Kit Version 7.0 Update 60 or Later, 64-Bit

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

<http://www.oracle.com/technetwork/java/javase/downloads/jre7-downloads-1880261.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.

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 Utilities Customer Care and Billing. For installation instructions, refer to the [Installing Hibernate 4.1.0](#) section.

Oracle WebLogic Server 12.1.3.0+ / 12.2.1+ (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+ / 12.2.1+.

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

HP-UX 11.31 Application Server

This section describes the software requirements for operating the application using the HP-UX application server.

Supported Application Servers

Operating System	Chipsets	Application Server
HP-UX ia (64-bit)	ia64	Oracle WebLogic 12.1.3.0+ / 12.2.1+ (64-bit) version

Web/Application Server Tier

HP-UX Operating System Running on Itanium 64-bit Architecture

UNIX Administrator UserID

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

Description	Default Value	Customer Defined Value
CCB Administrator UserID	cissys	
CCB 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 userid 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 077 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 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, the use cissys to stop it as well.

Oracle 12.1.0.1.0 Client

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

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

HP-Ux Java Development Kit Version 7.0 Update 12 or Later (64-Bit)

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

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 Utilities Customer Care and Billing. For instructions to install Hibernate 4.1.0, refer to the [Installing Hibernate 4.1.0](#) section.

Oracle WebLogic Server 12.1.3.0+ / 12.2.1+ (64-bit)

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.1.3.0+ / 12.2.1+.

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

Chapter 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 Utilities Customer Care and Billing. This section describes the process for installing the Oracle Utilities Application Framework, including:

- [Installation Overview](#)
- [Pre-Installation Tasks](#)
- [Installing Oracle Utilities Application Framework](#)
- [Installing Hibernate 4.1.0](#)

Installation Overview

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

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

Before you proceed with the installation process:

1. Complete the database installation/upgrade process. Refer to the *Oracle Utilities Customer Care and Billing Database Administrator’s Guide*.
2. Make sure that you have installed all the required third-party software as described in [Chapter 5: Installing Application Server Prerequisite Software](#).

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

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

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

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

Pre-Installation Tasks

Hardware and Software Version Prerequisites

The section [Supported Platforms](#) contains all of the available platforms that are required with this release of the product.

Database Installation

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

Installation Prerequisites

[Chapter 5: Installing Application Server Prerequisite Software](#) describes all preparations that need to be done on the server prior to installing the application server. Please read carefully the server setup requirements and make sure that all prerequisite software is installed and that all required environment variables are set. Correct server setup and proper environment variable settings are an essential prerequisite for successful environment installation.

System Architecture Overview

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

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

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

Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.3.0.4.0 installation file is delivered in jar format for both UNIX 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, follow these steps:

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework V4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as `c:\ouaf\temp` or `/ouaf/temp`. (Referred to below as <TEMPDIR>.)

Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.

4. Copy the file `FW-V4.3.0.4.0-MultiPlatform.jar` from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the `BINARY` option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
```

```
jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
```

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

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

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

Set Permissions for the cistab File in UNIX

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

The `install` utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the `<TEMPDIR>/FW-V4.3.0.4.0-SP4` directory named `cistab_<SPLENVIRON>.sh`. Run the generated script using the root account before continuing with the installation process. The script initializes the `cistab` file in `/etc` directory (if it is the first Oracle Utilities Application Framework application environment on the server) and registers a new environment.

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

Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Application Framework.

Installation Process (Brief Description)

1. Log on as the Oracle Utilities Framework administrator (the default is cissys on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure your application server and any third-party software required for your platform, as outlined in [Chapter 5: Installing Application Server Prerequisite Software](#).
3. Change directory to the <TEMPDIR>/FW-V4.3.0.4.0-SP4 directory.
4. Set the following path:


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

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

Unix: ksh ./install.sh

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

Installation Process (Detailed Description)

1. Log on to the host server as Oracle Utilities Application Framework administrator.
Log on as cissys (on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure application server and third-party software.
Complete all steps outlined in [Installing Application Server Prerequisite Software](#) You will need to obtain specific information for the install.
3. Change directory to the <TEMPDIR>/FW-V4.3.0.4.0-SP4 directory and start the application installation utility by executing the appropriate script:

Unix: ksh ./install.sh

Windows: install.cmd

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

Use the completed Environment ID, Roles, Third Party Software Configuration worksheet in [Installation and Configuration Worksheets](#) to complete this step.

5. Select menu item 2: Keystore Options.

Use the completed Keystore Options Worksheet to complete this step. See [Installation and Configuration Worksheets](#).

6. Select menu item 50: Environment Installation Options.

Use the completed Environment Installation Options Worksheet to complete this step. See [Installation and Configuration Worksheets](#).

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

- Specify the environment mount point, log files mount point, name and the environment directory names for a new installation on a menu screen.
- Specify the web application server type your environment will run with (the default will be WebLogic).
- Specify if you want to install the application viewer module.
- Specify if you want to install the demo certificate generation scripts.
- Specify if you want to install sample custom code.
- Enter P to accept the selected options.
- During this step, the specification of a new environment is checked for validity against /etc/cistab and the permissions on mount points and directories.

7. Configure environment parameters.

- During this step you will configure environment parameters such as web server hosts and ports, database name, and user ID.
- The application installation utility shows default values for some configuration options.
- Use the completed Environment Configuration Worksheet to assist you.

Note: Some options require a value for a successful install. It is important to provide these values as described in the previous sections.

- When you are done with the parameters setup, proceed with the option P.
- All of the options will be written in the following File: \$ SPLEBASE/etc/ENVIRON.INI.
- You will be warned if you did not edit a section. You may proceed if you want to keep the default settings.
- The application installation utility copies the installation media to a new environment.
- The application installation utility generates environment configuration parameters.

The application installation utility automatically executes the script initialSetup.sh (on UNIX) or initialSetup.cmd (on Windows), located in

\$\$SPLEBASE/bin (%SPLEBASE%\bin on Windows) directory. This script populates different application template configuration files with the new environment variables values and completes the rest of the installation steps.

8. Set up environment variables.

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

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

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

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

Unix: \$\$SPLEBASE/bin/splenviron.sh -e <SPLENVIRON>

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

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

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

See [Chapter 4: Planning the Installation](#) for settings and configuration.

Detailed Description for Configuring the OUAF Keystore

The following section details the steps required to configure the OUAF keystore.

OUAF Keystore

The OUAF Keystore feature secures sensitive data such as passwords and prevents tampering of long login IDs via direct updates to the database. The application server uses an external keystore to store keys for system password and other sensitive system data including user “hashes” that are used to verify the validity of email long login IDs. In order to run the application correctly, the keystore used by the application server must match the data encrypted in the database. If they do not match, the application will not be able to decrypt passwords correct, nor will users be able to log on due to a mismatch of user security hashes.

To help manage the keystore and ensure that the keystore matches the database-encrypted data, there is a system check at startup of the application that display warning messages when the system detects that the keystore in use does not match the encrypted data in the

database. Thus after any keystore operation, fresh installation of the application, or reconfiguration to point to a different database, the keystore will need to be synchronized with the database. Synchronization of the keystore happens any time `ChangeCryptographyKey` or `ResetCryptographyKey` programs are run.

After running the cryptography programs, it is necessary to reset the database credentials used by the database patching utility with the `nvokeDBUpdatePatch.sh | cmd` script.

Note: The database utility ORADBI does not require the keystore files. Please refer to the database documentation for more details.

The following lists the common administrative activities related to the keystore.

Determining Keystore in Use

You can determine if an existing application server uses a keystore through the existence of the files in the following location. (Use the `ls -a` option in Unix systems to list all files):

```
<SPLEBASE>/ks/.ouaf_keystore
```

```
<SPLEBASE>/ks/.ouaf_storepass
```

If there are no files in this location, then the system is not using a keystore. Starting from 4.2.0.2.0, a keystore should be in use.

Configuring the Keystore Options

If you would like to customize the keystore options, the Install Menu includes a section for keystore options as shown below. You can access the Install Menu later through (execute `configureEnv.sh | cmd -i`):

```
2. Keystore options
   Import Keystore Directory:
   Store Type: JCEKS
   Alias: ouaf.system
   Alias Key Algorithm: AES
   Alias Key Size: 128
   HMAC Alias: ouaf.system.hmac
   Padding: PKCS5Padding
   Mode: CBC
```

Importing an Existing Keystore

This will import a keystore from an existing environment to the current one. Use this when upgrading from 4.2.0.2.0 or when reconfiguring environments using different keystores and you want them to point to the same database schema (e.g. you want to have more than one application server pointing to the same database schema).

Follow these steps:

1. Enter the keystore options from the the install menu or from the `configureEnv.sh | cmd -i` as above.
2. Run `initialSetup.sh | cmd -s` so that the keystore is imported and appropriate property files are updated.
3. Run `configureEnv.sh | cmd` and re-enter the passwords so they are encrypted with the imported keystore.
4. Run `initialSetup.sh | cmd` again to update property files with the encrypted data.
5. Run the following:

```
perl $SPLEBASE/bin/run_java_standalone.plx
com.splwg.shared.common.ChangeCryptographyKeRun $SPLEBASE/bin/
nvokeDBUpdatePatch.sh|cmd and follow the prompts.
```

You can use the `-h` option to obtain help.

Upgrading from the Legacy Keystore

This will:

- Synchronize the keystore to the database
- Regenerate the user hashes
- Re-encrypt any passwords (from the legacy-encrypted passwords) using the current keystore.
- Use this only when upgrading from a framework prior to version 4.2.0.2.0.

Follow these steps:

1. Run:

```
perl $SPLEBASE/bin/run_java_standalone.plx
com.splwg.shared.common.ChangeCryptographyKey -l -h
```

2. Run `$SPLEBASE/bin/nvokeDBUpdatePatch.sh|cmd` and follow the prompts. You can use the `-h` option to obtain help.

Forcing the Environment to Use the Current Keystore

This process will:

- Prompt for and encrypt application server-stored passwords
- Synchronize the keystore to the database
- Regenerate the user hashes
- Invalidate any database-stored passwords
- Use this option when, for example, a keystore has been lost, and thus, the system will not be able to decrypt the passwords stored in the configuration files or database. All passwords will need to be reentered.

Follow these steps:

1. Using `configureEnv.sh|cmd`, re-enter the menu passwords to encrypt the data.

2. Run `initialSetup.sh|cmd` to update property files with the encrypted data.

3. Run:

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

4. Run `$SPLEBASE/bin/nvokeDBUpdatePatch.sh|cmd` and follow the prompts. You can use the `-h` option to obtain help.
5. Re-enter stored password information using the application (example: passwords for reports).

Synchronizing the Keystore

This will:

- Synchronize the keystore to the database

- Regenerate the user hashes
- Follow these instructions only when you are sure the data in the database is encrypted with the current keystore. This is used to synchronize the keystore to the database.

Follow these steps:

1. Run the following:

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

2. Run `$SPLEBASE/bin/nvokeDBUpdatePatch.sh|cmd` and follow the prompts. You can use the `-h` option to obtain help.

Creating a New Keystore

This will:

- Prompt for and encrypt new application server-stored passwords
- Synchronize the keystore to the database
- Regenerate user hashes
- Decrypt the passwords using the old keystore and encrypt them using the new keystore.

Follow these steps:

1. Copy the old keystore to a temporary directory as a backup measure.
2. Run `initialSetup.sh|cmd -k` to generate the new keystore.
3. Using `configureEnv.sh|cmd`, re-enter the menu passwords to encrypt the data.
4. Run `initialSetup.sh|cmd` to update property files with the encrypted data.
5. Run:

```
perl $SPLEBASE/bin/run_java_standalone.plx
-Dcom.oracle.ouaf.system.old.keystore.file={property-value}
-Dcom.oracle.ouaf.system.old.keystore.passwordFileName={property-value}
-Dcom.oracle.ouaf.system.old.keystore.type={property-value}
-Dcom.oracle.ouaf.system.old.keystore.alias={property-value}
-Dcom.oracle.ouaf.system.old.keystore.padding={property-value}
-Dcom.oracle.ouaf.system.old.keystore.mode={property-value}
com.splwg.shared.common.ChangeCryptographyKey
```

where {property-value} is related to the old keystore

6. Run `$SPLEBASE/bin/nvokeDBUpdatePatch.sh|cmd` and follow the prompts. You can use the `-h` option to obtain help.

Installing Hibernate 4.1.0

To install Hibernate 4.1.0 external jar files to the Hibernate 3rd party jars depot:

1. Create a Hibernate jar external depot:

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


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

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

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

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

```
cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

6. Another package needs to be downloaded in order to get the jboss-logging-3.3.0.Final.jar.

Download the hibernate-search-5.5.4.Final-dist.zip file from:
<https://sourceforge.net/projects/hibernate/files/hibernate-search/>

7. Click the “5.5.4.Final” link to download the zip file.
8. Extract the contents of the archive file:

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

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

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

Chapter 7

Installing the Application Server Component of Oracle Utilities Customer Care and Billing

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

- [Pre-installation Tasks](#)
- [Installing the Application](#)
- [Integrating Customer Modifications into This Release](#)
- [Operating the Application](#)
- [Installing Service Packs and Patches](#)

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

To proceed with the Oracle Utilities Customer Care 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 Utilities Customer Care and Billing Application product installation. For detailed instructions see [Preparing for the Installation](#).

Pre-installation Tasks

This section describes the steps that should be taken before installing Oracle Utilities Customer Care and Billing.

Installing Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer Care and Billing.

The patches are available as a convenience rollup inside the zip file, CCB-V2.6.0.0.0-FW-PREREQ-MultiPlatform.zip, which is part of the downloaded Media Pack.

For a list of the patches that are included in this rollup, refer to [Appendix A: Application Framework Prerequisite Patches](#).

Follow these steps for installing the application and database patches on top of Oracle Utilities Application Framework 4.3.0.4.0:

1. Copy the file CCB-V26000-FW-PREREQ-MultiPlatform.jar in the delivered package to a <TEMPDIR>. Unjar using below command:

```
jar -xvf CCB-V26000-FW-PREREQ-MultiPlatform.jar
```

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

UNIX

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

Windows

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

3. Install application patches:
 - a. Navigate to the <temp location>/FW-V4.3.0.4.0-Rollup/Application folder.
 - b. Execute the group installation script:

Unix /Linux

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

Windows

```
installSFgroup.cmd
```

Copying and Decompressing Install Media

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

Oracle Utilities Customer Care and Billing is delivered in a separate installation package for each supported Operating System. Please refer to the [Supported Platforms](#) for version and installation details regarding the database and operating system versions. Also see [Chapter 5: Installing Application Server Prerequisite Software](#) for prerequisite third-party software installation instructions.

Download the installation package for your operating system and proceed with the following instructions.

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Customer Care and Billing application environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
3. Copy the file CCB-V2.6.0.0.0-MultiPlatform.jar in the delivered package to a <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.

4. Decompress the file:

```
cd <TEMPDIR>
```

```
jar -xvf CCB-V2.6.0.0.0-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://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.

For both Unix and Windows platforms, a sub-directory named CCB.V2.6.0.0.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

Preparing for the Installation

1. Log on as Oracle Utilities Customer Care and Billing Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

UNIX:

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

Windows:

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

3. Stop the environment if running.

UNIX:

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

Windows:

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

Installing the Application

1. Change to the <TEMPDIR>/CCB.V2.6.0.0.0 Directory.
2. Set the following path:

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

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

3. Execute the script:

UNIX

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

Windows

```
install.cmd
```

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

4. Follow the messages and instructions that are produced by the install utility. Please note that some of the steps may take some time to complete.
5. If the install utility execution was not stopped due to errors and you did not interrupt the execution, you have finished the installation of the Oracle Utilities Customer Care and Billing Application product.
6. Execute the following commands:

UNIX

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

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

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

Windows

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

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

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

Note: If you are using demo certificates, please execute the below command before starting the environment.

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

7. Start up the environment.

The final step of the installation process is the environment startup. The install utility executes the command `spl.sh start` (for UNIX) or `spl.cmd start` (for Windows) to start up the environment. You may start the environment by this command any time. Follow the messages on the screen and check the logs in `$$SYSTEMLOGS` (`%SYSTEMLOGS%` on Windows) directory to ensure that the environment was started successfully. If the startup failed, identify the problem by reviewing the logs, and start up the environment manually while you are connected to the new environment in your online session.

Integrating Customer Modifications into This Release

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

Operating the Application

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

Be sure to read the *Oracle Utilities Customer Care and Billing Server Administration Guide* for more information on further configuring and operating the Oracle Utilities Customer Care and Billing system.

Installing Service Packs and Patches

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

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

Chapter 8

Installing Oracle Utilities Customer To Meter

This chapter provides instructions for installing the Oracle Utilities Customer to Meter optional component. It includes:

- [Prerequisites](#)
- [Installing Customer To Meter Components](#)
 - [Installing Oracle Utilities Customer Care and Billing Patches](#)
 - [Installing Oracle Utilities Meter Data Management](#)
 - [Installing Oracle Utilities Customer To Meter](#)

Prerequisites

Before you can install the Customer To Meter components, the following must be installed:

- Oracle Utilities Application Framework v4.3.0 Service Pack 4 (see [Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework](#))
- Oracle Utilities Customer Care and Billing v2.6.0.0.0 (see [Chapter 7: Installing the Application Server Component of Oracle Utilities Customer Care and Billing](#))

Installing Customer To Meter Components

Installing Oracle Utilities Customer To Meter includes:

- [Installing Oracle Utilities Customer Care and Billing Patches](#)
- [Installing Oracle Utilities Meter Data Management](#)
- [Installing Oracle Utilities Customer To Meter](#)

Installing Oracle Utilities Customer Care and Billing Patches

Oracle Utilities Customer Care and Billing patches must be installed prior to installing Oracle Utilities Customer To Meter.

The patches are available as a convenience roll-up inside the zip file (C2M-V2.6.0.0.0-CCB-PREREQ-MultiPlatform.zip) which is part of the downloaded Media Pack.

For a list of the patches that are included in this rollup, refer to [Appendix B: Oracle Utilities Customer Care and Billing Fixes](#).

Follow these steps for installing the application and database patches on top of Oracle Utilities Customer Care and Billing 2.6.0.0.0:

1. Copy the C2M-V26000-CCB-PREREQ-MultiPlatform.jar file in the delivered package to a <TEMPDIR>. Unjar using below command:


```
jar -xvf C2M-V26000-CCB-PREREQ-MultiPlatform.jar
```
2. Initialize the Oracle Utilities Customer Care and Billing environment that you want to install the CCB patch rollup into:

Unix

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

Windows

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

3. Install application patches:
 - a. Navigate to the <temp location>/CCB-V2.6.0.0.0-Rollup/Application folder.
 - b. Execute the group installation script:

Unix /Linux

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

Windows

```
installSFgroup.cmd
```

Installing Oracle Utilities Meter Data Management

Installing Oracle Utilities Meter Data Management involves the following:

- [Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component](#)
- [Installing the Oracle Utilities Meter Data Management V2.2.0.1.0 Application Component](#)

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component

This section describes how to install the application component of Oracle Utilities Service and Measurement Data Foundation, including:

- [Copying and Decompressing Install Media](#)
- [Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0](#)

Copying and Decompressing Install Media

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

The Oracle Utilities Service and Measurement Data Foundation is delivered as a separate installation package that is downloaded as part of Oracle Utilities Customer Care and Billing V2.6.0.0.0.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Customer Care and Billing application environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
3. Copy the SMDF-V2.2.0.1-MultiPlatform.jar file in the delivered package to a <TEMPDIR> on your host server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>
jar -xvf SMDF-V2.2.0.1-MultiPlatform.jar
```

For Windows and Unix platforms, a sub-directory named MDF.V2.2.0.1.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0

This section outlines the steps for installing the Service and Measurement Data Foundation:

Preparing for the Installation

1. Log on as Oracle Utilities Service and Measurement Data Foundation Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

UNIX

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

Windows

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

3. Stop the environment if running.

UNIX

```
spl.sh stop
```

Windows

```
spl.cmd stop
```

Installing the Application

1. Change to the <TEMPDIR>/MDF.V2.2.0.1.0 directory.
2. Execute the script:

UNIX

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

Windows

```
install.cmd
```

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

The Configuration menu for Oracle Utilities Service and Measurement Data Foundation Application appears.

3. Type **P** and <ENTER> to proceed with the installation. (you don't need to change anything).

Installation of Oracle Utilities Service and Measurement Data Foundation Application Server is complete if no errors occurred during installation.

Installing the Oracle Utilities Meter Data Management V2.2.0.1.0 Application Component

This section describes how to install the Oracle Utilities Meter Data Management application component, including:

- [Installation Prerequisite](#)
- [Copying and Decompressing Install Media](#)
- [Installing the Application Component](#)

To proceed with the Oracle Utilities Meter Data Management installation you need to be connected to the target Oracle Utilities Service and Measurement Data Foundation application environment. See the detailed installation instructions in the following section.

You must initialize the Service and Measurement Data Foundation environment. For detailed instructions see the Preparing for the Installation section.

Installation Prerequisite

Oracle Utilities Service and Measurement Data Foundation 2.2.0.1 must be installed prior to installing Oracle Utilities Meter Data Management 2.2.0.1.

Copying and Decompressing Install Media

The Oracle Utilities Customer Care and Billing installation file is delivered in jar format for UNIX .

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

1. Log in to the application server host as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.

The Oracle Utilities Meter Data Management is delivered as a separate installation package that is downloaded as part of Oracle Utilities Customer Care and Billing V2.6.0.0.0.

2. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Customer Care and Billing application environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
3. Copy the MDM-V2.2.0.1.0-MultiPlatform.jar file in the delivered package to a <TEMPDIR> on your host server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>
jar -xvf MDM-V2.2.0.1.0-MultiPlatform.jar
```

For Unix and Windows platforms, a sub-directory named MDM.V2.2.0.1.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

Installing the Application Component

Follow the steps below to install Oracle Utilities Customer Care and Billing application component:

1. Log in to the application server host as Oracle Utilities Customer Care and Billing Administrator (default cissys).

2. Change directory:

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

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

3. Initialize the environment by running the appropriate command:

UNIX

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

Windows

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

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

UNIX

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

Windows

```
spl.cmd stop
```

5. Navigate to .. <TEMPDIR>/MDM.V2.2.0.1.0 directory.
6. Execute the install script:

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

UNIX

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

Windows

```
install.cmd
```

Choose option **P** to proceed with the installation (you don't need to change anything).

Installation of the Oracle Utilities Meter Data Management Server is complete if no errors occurred during the installation.

Installing Oracle Utilities Customer To Meter

This section describes how to install the Customer To Meter component, including:

- [Copying and Decompressing Install Media](#)
- [Installing Oracle Utilities Customer To Meter V2.6.0.0.0](#)

Copying and Decompressing Install Media

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

The Customer To Meter is delivered as a separate installation package that can be downloaded along with Oracle Utilities Customer Care and Billing V2.6.0.0.0.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default `cissys`). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Create a `<TEMPDIR>` directory on the application server, which is independent of any current or other working Oracle Utilities Customer To Meter application environment. This can be the same `<TEMPDIR>` used during the installation of the Oracle Utilities Application Framework.
3. Copy the file `C2M.V2.6.0.0-MultiPlatform.jar` in the delivered package to a `<TEMPDIR>` on your application server. If you are using FTP to transfer this file, remember to use the `BINARY` option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>
jar -xvf C2M-V2.6.0.0.0-MultiPlatform.jar
```

For Unix platform, a sub-directory named `C2M.V2.6.0.0.0` is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

Installing Oracle Utilities Customer To Meter V2.6.0.0.0

This section outlines the steps for installing Customer To Meter:

Preparing for the Installation

1. Log on as Oracle Utilities Service and Measurement Data Foundation Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

UNIX

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

Windows

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

3. Stop the environment if running.

UNIX

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

Windows

```
spl.cmd stop
```

Installing the Application

1. Change to the <TEMPDIR>/C2M.V2.6.0.0.0 directory.
2. Execute the script:

UNIX

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

Windows

```
install.cmd
```

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

The Configuration menu for the Oracle Utilities Customer To Meter application appears.

3. Choose option P to proceed with the installation (you don't need to change anything).
4. Start up the environment. Run the following command:

UNIX

```
spl.sh start
```

Windows

```
spl.cmd start
```

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

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

Note: The first time you start you need to log into the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL: `http://<hostname>:<portname>/console`.

Configuration Tasks for Customer To Meter

Create JMS queues and target them to the online server.

Note that this is not required in case of embedded domain and will be available on installation.

1. Create a JMS server “C2M-JMSServer” and target it to online server.
2. Create a JMS module “C2M-SystemModule”.
3. Under “C2M-SystemModule” create a sub-deployment “C2M-JMSFAServer” and target it to “C2M-JMSServer”.
4. Create the following Connection Factory and JMS queues:

```
Connection Factory Name: OUC2MConnectionFactory
JNDI Name: jms/OUC2MConnectionFactory
Sub-deployment: C2M-JMSFAServer
Targets: C2M-JMSServer
```

```
Queue Name: OUC2MBDResponse
JNDI Name: jms/OUC2MBDResponse
Sub-deployment: C2M-JMSFAServer
Targets: C2M-JMSServer
```

```
Queue Name: OUC2MBDResponseError
JNDI Name: jms/OUC2MBDResponseError
Sub-deployment: C2M-JMSFAServer
Targets: C2M-JMSServer
```

Chapter 9

Additional Tasks

This section describes tasks that should be completed after installing Oracle Utilities Customer Care and Billing, including:

- [Importing Self-Signed Certificates](#)
- [Customizing Configuration Files](#)
- [Integrating Existing Customer Modifications](#)
- [Generating the Application Viewer](#)
- [Building Javadocs Indexes](#)
- [Configuring the Environment for Batch Processing](#)
- [Customizing the Logo](#)
- [Configuring Secure Sockets Layer \(SSL\)](#)
- [Setting Up an Application Keystore](#)
- [Deploying Inbound WebServices \(IWS\)](#)
- [Domain Templates \(Linux WebLogic 12.1.3.0+ and Unix 12.2.1 only\)](#)
- [Database Patching](#)

Importing Self-Signed Certificates

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

Perform the following commands:

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

UNIX

```
$$PLEBASE/bin/splenvron.sh -e $$SPLENVIRON For example:  
/ouaf/TEST_ENVIRON1/bin/splenvron.sh -e TEST_ENVIRON1
```

Windows

```
%SPLEBASE%\bin\splenvron.cmd -e %SPLENVIRON% For example:  
D:\ouaf\TEST_ENVIRON1\bin\splenvron.cmd -e TEST_ENVIRON1
```

- Execute the following script to generate all information:

UNIX

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

Windows

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

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

Customizing Configuration Files

If you wish to make customer modifications to various configuration files, create a 'CM copy' of the template file or user exit instead. 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. Use the following procedure:

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

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

Unix:

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

Windows:

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

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

Centralized Properties Customization

This feature gives the ability to add, modify, and remove properties in one file. The properties are propagated to the specified property files. The template process, which is part of the initialSetup step, will look at the files etc/cm_properties.ini (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 this file format: etc/<PROD>_properties.ini (where <PROD> could be one of the list of installed products included in etc/PRODUCT.txt). If it exists it will be processed as well.

cm_properties.ini examples

Type of entries that could be included into cm_properties.ini 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 exist.

<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 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_connection=[DELETE]
hibernate.service.properties.template:new.property=test
```

hibernate.service.properties generated properties file result:

```
### The following line was overridden because <PROD>_properties.ini
file setting:
hibernate.user=clouduser
### The following line was overridden because <PROD>_properties.ini
file setting:
hibernate.password=cloudpwd
### The following line was deleted because <PROD>_properties.ini
file setting:
# hibernate.ucp.validate_connection = true
### The following line was appended because <PROD>_properties.ini
file setting:
new.property = test
```

hibernate.iws.properties generated properties file result:

```
### The following line was overridden because <PROD>_properties.ini
file setting:
hibernate.user=clouduser
### The following line was overridden because <PROD>_properties.ini
file setting:
hibernate.password=cloudpwd
```

Integrating Existing Customer Modifications

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

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

Generating the Application Viewer

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

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

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

UNIX

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

For example:

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

Windows

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

For example:

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

3. Execute the following script to generate all information.

UNIX

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

Windows

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

4. Restart your application.

Building Javadocs Indexes

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

Perform the following to rebuild the Javadoc indexes.

Windows

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

UNIX

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

Configuring the Environment for Batch Processing

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

Customizing the Logo

To replace the Oracle Utilities logo on the main menu with another image, put the new image <customer_logo_file>.png file into the directory \$SPLEBASE/etc/conf/root/cm and create a new “External” Navigation Key called CM_logoImage. To do that, run the Oracle Utilities application from the browser with the parameters: http://<hostname>:<port>/cis.jsp?utilities=true&tools=true. From the Admin menu, select Navigation Key. Add the above Navigation Key with its corresponding URL Override path. The syntax for the URL path is:

Windows:

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

UNIX:

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

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

Configuring Secure Sockets Layer (SSL)

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

Follow these steps to configure Secure Sockets Layer:

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

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

2. Store the identity and trust.

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

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

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

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

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

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

For additional information, refer to the following topics:

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

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

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

Setting Up an Application Keystore

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

Note that this 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:

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

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

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

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

For example:

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

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

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

For WebLogic Server:

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

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

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

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

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

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

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

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

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

Deploying Inbound WebServices (IWS)

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

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

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

For deploying IWS, please follow the steps below:

UNIX

1. Enable the Web Services Functionality as shown below:

- a. `cd $SPLEBASE/bin`
- b. Execute `configureEnv.sh -a`

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

2. Execute `initialSetup.sh` as shown below:

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

3. Set the classpath as shown below:

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

4. Execute the following command:

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

Select y

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

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

Windows

1. Enable the Web Services Functionality as shown below:

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

2. Execute `configureEnv.cmd -a`

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

3. Execute `initialSetup.cmd` as shown below:

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

- Set the classpath as shown below:

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

- Execute the following command:

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

Select y

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

```
iwsdeploy.cmd
```

Domain Templates (Linux WebLogic 12.1.3.0+ and Unix 12.2.1 only)

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

- Install and configure application stack (OUAF and Edge Product)
 - Note:** Environment will need to be configuring to deploy in ear format.
- Review domain templates (Simple /Complex)
- Execute config.sh
- Configure domain
- Complete domain configuration
 - Note:** Configure nodemanager.properties and setDomainEnv.sh
- Update SPLEBASE (ENVIRON.INI)

Detailed Description

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

```
$SPLEBASE/tools/domaintemplates
```

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

The Simple Domain Template is for use with one machine and does not include a Weblogic cluster, this domain configuration is similar to current delivered embedded

splapp domain, with the exception that there will be two WebLogic servers (utilities_server1 and a “Admin Server”).

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

You are able to create a custom domain template from the existing domain by using the Domain Template Builder or the pack command. By using the Domain Template Builder, you can also create a custom domain template from an existing template.

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

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

Note: For 12.1.3 and 12.2.1: The Users and Groups match the delivered values delivered with the embedded domain.

For 12.2.1: 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)

Configure Node Manager Properties to Allow SSL (12.1.3 templates only)

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

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

- CustomIdentityKeyStorePassPhrase=
- CustomIdentityPrivateKeyPassPhrase=

Set these to the value “0uaf_demo_c3rt”

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

Configure setDomainEnv.sh Script (12.1.3 templates only)

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

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

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

Configure setUserOverrides.sh (12.2.1 template only)

Change environmental variables here, if needed.

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: splenviron.sh -e <Environment_Name>
2. Execute: configureEnv.sh -a
3. Select Menu Item: 52. Advanced Web Application Configuration

```
=====
```

4. 02. Configuration Option: Domain Home Location

Current Value <ENTER>:

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

Enter Value: <Enter your domain home location>

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

Update setDomainEnv.sh (12.1.3 templates only)

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

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

Database Patching

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

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

To generate the jar file:

1. Initialize a command shell:

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

UNIX

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

In the following example, replace the variables

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

To initialize the environment enter:

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

For example:

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

Windows

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

In the below example you should replace the following variables:

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

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

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

For example:

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

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

UNIX

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

Windows

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

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

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

```
jar xvf db_patch_standalone.jar
```

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

Overview of Database Patching Application

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

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

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

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

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

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

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

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

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

Unix Example:

The TOOLSBIN location would be set to /ouaf/dbpatch/bin

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

Unix Sample - Database Patch Application (ouafDatabasePatch.sh)

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

- Sample Execution – Passing a Password

```
./ouafDatabasePatch.sh -x ouafadm -p "-t O -d  
CISADM_Z1_12C_43020_BLD001,s1c041ds:1522:Z143Q12C"
```

- Sample Execution – Prompting for a Password

```
./ouafDatabasePatch.sh -p "-t O -d  
CISADM_Z1_12C_43020_BLD001,s1c041ds:1522:Z143Q12C"
```

- Sample Execution - passing in the tools bin location

```
/ouafDatabasePatch.sh -u
```

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

WINDOWS Example:

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

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

Windows Sample - Database Patch Application (ouafDatabasePatch.cmd)

- Sample Execution – Passing a Password

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

- Sample Execution – Prompting for a Password

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

- Sample Execution - passing in the tools bin location

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

Windows Sample Usage:

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

Appendix A

Application Framework Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer Care and Billing. The patches listed below are available as a convenience rollup, CCB-V2.6.0.0.0-FW-PREREQ-MultiPlatform.zip, which is included in the downloaded Media Pack. Please refer to the instructions contained inside the rollup directory for steps to install the patches. The rollup contains the following patches:

Bug Fix	Description
25509633	CMA - NPE APPLYING FIELD ACTIVITY MIGRATION OBJECT IN CCB
25506815	COPY OF 25485728 - COPY OF 25164929 - COPY OF 24965749 - SEARCH BY IS RESET AFTE
25498483	USING F1-GETDBMSJOBS WITH JOBSTATUS SET TO COMP RETURNS A NULL AND OTHER ISSUES
25479526	COPY OF 25210796 - SLA: PERFORMANCE TARGET ZONE NOT DISPLAYING TIME TARGET CORRE
25478719	ADA: OUTSTANDING CCB KEYBOARD ISSUES 2.1.1, 2.4.3 AND 3.2.3
25471512	ISSUE FOUND WHEN CHECKBOX ELEMENT IS WITHIN A LIST
25468195	INFO STRING HAVING DATE IN DESCRIPTION GETS WRAPPED IN BO SEARCH RESULTS
25459906	COPY OF 24495181 - COPY OF 24487407 - COPY OF 23742898 - COPY OF 22544303 - ISSU
25458441	INFO STRING WITH SPACE AND HYPHEN IN MONEY AND DATES WRAPS IN SERVICE ZONES.
25343308	SUPPORT FOR HTTP REST CALL WITH JSON PAYLOAD&TRANSFORMATION FOR GIS INTEGRATION
25300770	PROGRAM TO LIST CLASSES ALLOWABLE IN SOURCE FOR JAVADOCS
25119728	ABILITY TO ADD SOAP HEADER PARAMETERS TO OUTBOUND MESSAGE

Bug Fix	Description
23571679	COLLAPSING THE DASHBOARD CAUSES A SCROLLBAR TO APPEAR
24589020	COPY OF BUG 24583489 - GENAPPVIEWERITEMS FAILS IN WINDOWS IF ONLY ONLINE ROLE IS
23128950	RESTRICTING URIS FOR THE CLOUD IS ACCEPTING ONLY TWO PROTOCOLS (HTTP & HTTPS)
25720956	COPY OF 25697855 - OUTBOUND WSDL AND IWS FROM WEB CATALOG HAS MISSING RESPONSE M
25714240	MAKE REST SECURITY FILTER OPTIONAL FOR OWSM
25712815	ADD SUPPORT FOR OWSM TO HTTP AND SOAP REALTIME SENDERS
25704043	ONLY SHOW BATCH, ALGORITHM, ETC. SOURCE IN JAVADOCS
25645976	00239 - PLUG-IN DRIVEN BATCH RESULTS TO NPE ERROR WHEN VALIDATING TO DO TYPE
25642648	TPW NOT WORKING IN WEBLOGIC DOMAIN FW 4.3.0.4.0
25636518	COPY OF 24749849 - CLD: BATCH ON WLS IS NOT ABLE TO START AFTER SECURITY HARDENI
25636490	COPY OF 24473095 - TEMPLATE PROPERTIES MISSING FORCE_FORWARD_SLASH
25616857	COPY OF 25201396 - WAM V2: ENHANCE OUTBOUND MESSAGE JSON SENDER TO SUPPORT DYNAM
25616513	MISSING INDEXES FOUND IN DB HEALTHCHECK ON INITIAL INSTALL
25610076	SUCCEEDING WARNINGS NO LONGER DISPLAYED AFTER ACCEPTING WARNING
25592230	COPY OF 25545108 - COPY OF 25419076 - OUTBOUND MESSAGE HAS THE MRID FIELD MISSIN
25513156	00239 - PLUG-IN DRIVEN BATCH DOES NOT SUPPORT ADDING ADDITIONAL SORT KEYS
25831771	HTTP HEADERS WRAPPED IN []
25816274	ABSTRACT POLICY DEFINITION FOR SOAP AND REST SENDERS
25808792	RECURSIVE CALL OF MO AUDIT
25808038	CALENDAR POPUP THROWS JAVASCRIPT ERRORS IF YOU TRY TO USE ANY OF THE WIDGETS
25762422	NEW ISSUE BEING INTRODUCED BY FW BUG 25468195
25754126	PHONE FORMAT ISSUE
25753347	C2M - FR - FA LINK FROM CCB START/STOP TO SOM DOES NOT WORK

Appendix B

Oracle Utilities Customer Care and Billing Fixes

The following table lists the Oracle Utilities Customer Care and Billing fixes included in this release:

Bug Number	Description
19064642	CALCULATE SQ CALC RULE: SCALAR VALUES IN DESCRIPTION ON BILL
19210524	REQUEST TO MERGE STRING PARTS INTO ONE MESSAGE
20889439	FACILITY LEVEL 1 SEARCH DOES NOT SUPPORT LIKEABLE SEARCH
21693432	COPY OF 21563201 - BILLED AMNT OFF \$0.01 DUE TO FLAT CHRG & S
22205586	COPY OF 20930096 - UNABLE TO WRITE OFF BILLS WITH PA OR BB AMOUNTS
22279742	PARAMETERS ARE NOT BEING PASSED ON MESSAGE NUMBER: 5, CATEGORY:10001 IN BILL SEG
22295830	GENERIC ERROR HANDLING ON WX SERVICES
22860320	COPY OF 22860087 - MISSING ID ATTRIBUTE ON DROPDOWN ELEMENT IN UI MAP C1-SSSEARC
23148875	RATE COMPONENT CRITERIA FIELD JAVA ALG - REMOVE DEPRECATED METHODS
23228335	C1-OCBG BATCH CREATES EXCEPTION TO DOS IN COMPLETED STATUS; SHOULD REMAIN OPEN
23512416	PORTAL CONTEXT ON ADD NOT BEING SET
23573031	DELETE OF ADJUSTMENT DOES NOT WORK PROPERLY
23754157	RATE CHECK - RETAIN SHOULD TRACE ON VALUE
23859666	QUESTIONS ABOUT FIELDWORK ORCHESTRATION FIELD ON FA TYPE AND SP TYPE
24314395	COPY OF 23625268 - MAKE "FILTER BY" DEFAULT VALUE CONFIGURABLE ON READ HISTORY S

Bug Number	Description
24357428	CIPCENRP PHONE COLLECTION IS BASED ON THE WRONG MAXIMUM
24371400	COPY OF 24350209 - BILL MESSAGE DOES NOT SHOW ALL PARAMETERS
24383626	COPY OF 24345235 - FIX FROM BUG 23501683 CHANGES ORIGINAL BEHAVIOR FOR MUP1 BATC
24384124	COPY OF 23549573 - REQUIREMENT TO POST PAYMENTS FOR MULTIPLE ACCOUNTS THAT IS PA
24386144	COPY OF 23025238 - CIPCACDN (CHECK DIGIT) - JAVA ENABLEMENT
24387624	COPY OF 23276904 - REGISTER ID SEARCH FROM READ HISTORY DOES NOT PUT CURRENT CUS
24396493	COPY OF 23741163 - HOW IS THE START DATE ON RATE CHECK'S CALC LINES TAB OF SUB S
24400695	COPY OF 23572034 - 11796 - COMM HISTORY AND NOTIFICATION HISTORY ZONES NEED TO H
24400786	COPY OF 24288006 - POSTROUT NOT USING PERSON LANGUAGE PREFERENCE WHILE GENERATIN
24401637	COPY OF 23524337 - ORACLE CC&B - DEFAULT CHAR VALUE SET IN THE CAMPAIGN NOT GETT
24401686	COPY OF 24290329 - ACCOUNT VERIFICATION TASK - ADD VALIDATION FOR LINE OF BUSINE
24401749	COPY OF 23754881 - ALLOW STOPPED SERVICE AGREEMENTS ON NON-BILLED BUDGET
24408789	COPY OF 24365392 - SYSTEM ERROR ON CUSTOMER CONTACT
24410341	NAV OPTION USAGE MISSING
24415389	COPY OF 24287110 - SEVERAL NEW BASE PRODUCT BPA SCRIPTS APPEARING ON ELIGIBLE SC
24433756	COPY OF 24381906 - JAVA.LANG.ARRAYINDEXOUTOFBOUNDSEXCEPTION ENCOUNTERED ON BATCH
24442938	COPY OF 24392880 - PAYMENT QUICK ADD THROWS SQL COMMIT ERROR IF FIRST ACCOUNT PA
24442976	COPY OF 24333386 - DUPLICATE FIELD ACTIVITIES CREATED ON SEVERANCE EVENT FOR SA
24443188	COPY OF 24292585 - ERROR RETURNED WHEN PERSON CONTACT IS ADDED/UPDATED IN ACCOUN
24448493	COPY OF 24400458 - BILL SEGMENTS NOT FREEZING OR GENERATING FROM THE BILL SEGMENT
24462331	COPY OF 24294119 - DEVIATION OF PRICE ROUNDING WHEN THE PRORATION CALCULATION

Bug Number	Description
24484951	COPY OF 24484832 - CALCULATE DEFAULT INTEREST ISSUE
24491998	COPY OF 24330578 - ERROR MESSAGE APPEARS WHEN SELECT SHOW ELIGIBILITY FROM ORDER
24492033	COPY OF 24445693 - ERROR WHEN RUNNING BATCH JOB SET: COM.SPLWG.BASE.APL.PROGRAM.
24492105	CLEAN-UP: PLUG IN SCRIPT WITHOUT ALGORITHM TYPE
24507280	COPY OF 23625928 - ACH EXTRACT IS NOT COMPLIANT TO NACHA REGULATIONS
24511056	NEED AN INDEX ON INTV_PF_ID
24516231	COPY OF 24502590 - UTA: CREATE BUSINESS SERVICE FOR C1-ACCOUNTUPDATE & C1-ACCOUN
24516250	COPY OF 24505570 - POSTROUT EXTRACT IS INCORRECT WHEN THE BILL AMOUNT HAS NO CEN
24655141	COPY OF 24654794 - REVERT STOP_METHOD_LBL DESCRIPTION
24655477	COPY OF 24559250 - USAGE PERIODS SECTION IN C1-USAGEREQUESTDISPLAY UI MAP IS NOT
24656395	CURRENT CONTEXT ZONE IN CONTROL CENTRAL - ACCOUNT INFORMATION
24663119	CFM - INCREASE UOM_CD FIELD SIZE TO 30
24664196	CFM - INCREASE TOU_CD FIELD SIZE TO 30
24664209	CFM - INCREASE SQL_CD FIELD SIZE TO 30
24664226	CFM - INCREASE SVC_TYPE_CD FIELD SIZE TO 30
24686607	COPY OF 24515289 - CHARACTERISTIC COLLECTION BASED CALC RULE ELIGIBILITY RULES N
24687022	COPY OF 24492484 - BILL EXTRACT ISSUE : ADJCALCULATIONLINES MISSING IN BASE XSD
24745761	COPY OF 25067983 - DUPLICATE KEYS GENERATED BY CIPVMTRK BATCH
24798673	COPY OF 24616769 - WHEN BILL FACTOR HAS MORE THAN 20 VALUES, ONLY 20 RETRIEVED B
24813859	COPY OF 24707894 - C1-VALPHFMT DOES NOT FORMAT THE INPUT PHONE NUMBER
24822919	11796 - DO NOT USE CONTACT_ID IN C1-NCINSERTHISTGTT BS,C1-NOTIFICATIONHISTORY BO
24931970	COPY OF 24713120 - CHARACTER LIMIT FOR CUSTOMER CONTACT ON DASHBOARD DIFFERENT F
24935810	COPY OF 24928290 - MEASUREMENTS FROM THE MDM RESPONSE IS NOT BEING DISPLAYED ON

Bug Number	Description
24942980	COPY OF 24658622 - TIME OF USE FIELD MISSING ERROR
24951894	COPY OF 24908274 - UNABLE TO PROCESS ONE-TIME PAYMENT REQUEST IF PERSON ID IS NO
24952310	COPY OF 24313125 - SQI DECIMAL POSITIONS NOT BEING HONORED
24958679	COPY OF 24363363 - ISSUE WITH WXFINANCIALHISTORYRETRIEVER SERVICE RETURNING CCB
24958765	COPY OF 24812836 - ROUNDING OF AMOUNT DOES NOT RESULT IN OUR INTENTION
24958810	COPY OF 23221153 - CURRENT CONTEXT OUT OF SYNC WHEN NAVIGATING TO HISTORIC ACCOU
24958835	COPY OF 24443349 - CIPOFACA THROWS AN ERROR MESSAGE SP (<SP_ID>) DOES NOT SUPPOR
24958848	COPY OF 24460746 - SCRIPT C1-VALEMFMT DOES NOT ACCEPT TWO-LETTER COUNTRY CODE DO
24958876	COPY OF 24580730 - BILL CYCLE AND PROTECT BILL CYCLE SWITCH IS NOT UPDATE WHEN A
24958899	COPY OF 24687048 - F1SY FA LOG TYPE LOOKUP VALUE IS MISSING.
24959129	COPY OF 24702266 - CCB-RATE CALCULATION ERROR: A PERCENTAGE BILL FACTOR OF 100%
24959485	COPY OF 24467916 - 11795 -WXMAINTAINCSSUSERACCOUNT - REVERSE MAPPING OF CSS USER
24959491	COPY OF 24508525 - UPDATE CURRENT CONTEXT WITH CRR LINKS TO ACCOUNT/PERSON/PREMI
24959500	COPY OF 24514038 - SIRR/CRR TYPE - DISPLAY AUTO COMPLETION FIELDS AFTER ALLOWED
24959505	COPY OF 24754355 - UTA: 24656122 CCB REQUIRED OBJECTS
24960186	COPY OF 24509166 - AFTER PATCH 22886822, BILLING IS GENERATING BSEG ERROR MESSAG
24973167	COPY OF 24765444 - [CCB] CCB-MDM INTEGRATION - REPLACEMENT READS MAPPING MISSING
25023888	COPY OF 17318094 - NO ALERT THAT "APPOINTMENT REQUIRED FOR DISPATCH"
25031520	COPY OF 24940721 - SOME FIELDS IN DATA AREA 'C1STARTSTOP' ARE MISSING AND HAS TO
25038379	COPY OF 24849150 - UPGRADE 2.4.0.3: BUSINESS SERVICE C1-BFVALUE DOESN'T HAVE N/A
25038450	COPY OF 24675274 - FOR ACCOUNTS WITH MANY ATTACHMENTS (600 OR MORE) TAKES 6 TO 8

Bug Number	Description
25053458	COPY OF 24696113 - COMMENTS OF CUSTOMER CONTACT ENTERED BUT NOT SAVED FROM DASHB
25053990	COPY OF 24946275 - USER IS ABLE TO DELETE AN ADJUSTMENT , ONCE IT IS SUBMITTED T
25078467	COPY OF 24933812 - UNABLE TO GENERATE BILL WITH MORE THAN 140 BILL SEGMENTS
25078488	COPY OF 24839690 - ERROR TRANSITIONING CASE STATUS.
25135592	COPY OF 24939514 - RETURNED CHECK CHARGE (NSF) APPLIED TO INCORRECT SA
25135638	COPY OF 24598515 - CALCULATE DEFAULT INTEREST IS NOT OMITTED
25135653	COPY OF 24718586 - LONG-RUNNING SCRIPT ERROR WHEN SEARCHING AND ADDING A ROW IN
25137391	COPY OF 25099732 - HIGH EXECUTION COUNT AGAINST CI_BILL_CYC_SCH
25137430	COPY OF 24919633 - DISAPPEARING SERVICE QUANTITIES ON RATE CHECK PAGE
25138426	COPY OF 24836448 - ADDITIONAL CHANGE TO 21497741 WO BREAK PA - SA STATUS INVALID
25143558	COPY OF 24780654 - CANCELLED NON CIS PAYMENTS BEING POSTED TO WRONG GL
25164755	COPY OF 25072830 - PROGRAM COM ID CIPVWOPV NOT FOUND WHEN LOADING COBOL PROGRAM
25211273	COPY OF 23566608 - CC&B PAY PLAN SCREEN NOT ALWAYS UPDATING TOTAL BALANCE CORREC
25218390	(FW4.3.0.4) ERROR WHILE VISITING SERVICE NODE 'APP_SVC_ID' OF TYPE 'STRING'
25219579	COPY OF 23731043 - THERE IS A LIMITATION FOR PAYMENT (DISTRUBTION RULE) TRANSFER
25225272	COPY OF 24933620 - SQL ERROR CODE 99999992 OCCURRED IN MODULE CIPOFOCB:GC200 SE
25226947	COPY OF 24440650 - TRNS ADJS FROM OVERPYMNT SA CREATE BAD CREDIT PAYOFF BLNCE TO
25247788	COPY OF 25041862 - CSS USER DISPLAYS NON-READABLE CSSID; WEBUSERID IS PREFERRABL
25287905	COPY OF 24718139 - STARTING SERVICE FROM PREMISE MANAGEMENT CREATES MULTIPLE SAS
25313307	COPY OF 25301690 - UTA: CREATE CASE TRANSITION BUSINESS SERVICE
25341603	COPY OF 25341595 - PAY PLAN SCHEDULED DATE & PAYMENT AMOUNT & TOTAL NOT VISIBLE

Bug Number	Description
25355339	COPY OF 25257230 - DUPLICATE ERROR WHEN ADDING VIA PAYMENT QUICK ADD
25368931	COPY OF 25289455 - MULTIPLE MESSAGE PARAMETERS IN C1-ADDCASELOG
25369264	COPY OF 24923084 - RE-SUBMIT ONETIME PAYMENT USING PREVIOUS PAYMENT METHOD ERROR
25377246	COPY OF 25040138 - WFET BATCH THREAD STALLING UPON START UP (INPUT FIELD'S BYTES
25394810	COPY OF 24335136 - CC&B V2.5.0.1 CUSTOMER CONTACT SEARCH ISSUES
25394983	COPY OF 25207390 - LOGIC DISCREPANCY ON CONVERTED BASE PROGRAM CIPMMREA IN CC&B
25397464	COPY OF 25184861 - BILL SEG CANCELLATION FOR SA PREVIOUSLY ON BUDGET NO LONGER C
25410585	COPY OF 14652702 - CANCEL REBILL FOR USAGE BSEG DOESN'T FULLY COMPLETE
25415122	REMOVE REFERENCES TO UNUSED MODULE CIPCPECX
25431332	COPY OF 25098438 - PAYMENT EVENT NOT UPDATING THE PAYMENT NUMBER
25454347	[ADA] PARENTNODE.ID FUNCTION GIVES A DIFFERENT VALUE. NEED TO USE MODELID
25454518	SYNC REQUEST PORTAL - ACTION ZONE SHOULD BE REMOVED
25485158	COPY OF 25470538 - CALCULATION RULE CANNOT FIND SP CHARACTERISTIC FOR SA WITH MU
25551393	COPY OF 25486074 - MAKE ONE TIME PAYMENT SERVICE IS NOT WORKING AS EXPECTED AFTE
25551412	COPY OF 25247543 - XML BILL EXTRACT DOES NOT EXTRACT THE ADJUSTMENT DATE FOR REC
25558878	COPY OF 25527365 - BILL CALC LINE PRECISION FOR \$ AMT VALUE IS 5 DIGITS NOT 2
25562542	CONTRACT OPTION SYNC HAS ELEMENTS DISPLAYED ON FINAL SNAPSHOT ON DELETED RECORD
25570095	COPY OF 25560836 - BPP DATABASE FIELD IS NOT POPULATED WITH BPP PLAN
25602608	FIREFOX - UNABLE TO ADD NEW SERVICE TASK TYPE
25616747	COPY OF 25542182 - ERROR WHILE CREATING SA USING START/STOP
25616778	COPY OF 25440273 - REBATE CLAIM PERSON CONTACTS DEFAULTED IS DIFFERENT FROM PERS

Bug Number	Description
25619712	COPY OF 25519807 - WX-NOTIF GOT STUCK IN 'IN PROGRESS' STATUS
25639124	ERROR ON ALERT TOOLTIP
25683302	SET HAS MISSING BATCH CONTROL PARM FOR FA-SCHED-TM
25684396	COPY OF 25543143 - OUCSS-BASE FINANCIAL HISTORY DISPLAYS INCORRECT ADJUSTMENT CA
25688886	DEPRECATE CIPCPPHV (OLD PHONE NUMBER FORMAT VALIDATION)
25699174	COPY OF 25600751 - CIPVCCTK GENERATING INADEQUATE KEY LENGTHS FOR CC_ENTITY_FLG
25705312	COPY OF 25606625 - BCU2 NOT COPYING FK CHAR VALUES TO BILLABLE CHARGE LINE CHAR
25715093	SERVER ERROR ENCOUNTERED IN SPS RELATED TO SA SEARCH PAGE
25715458	INCORRECT ERROR MESSAGE FOR REQUIRED CRITERIA WHEN PREMISE ID SEARCH IS USED
25730908	COPY OF 25640935 - PHONE NUMBER CANNOT BE UPDATED WITH LEGACY CONTACT
25753705	CONCURRENCY ERROR RETURNED WHEN UPDATING PERSON CONTACT
25761928	COPY OF 25507440 - OUTBOUND MARKET MESSAGE RELATED OBJECT LINK NOT WORKING PROPE
25780521	SET BO STATUS REASON TO BLANK ON OPT-IN (11796)
25810428	COPY OF BUG 25804013 - OUCSS WX-CANSCHPAY SS WAS NOT INCLUDED IN C1-CSSINBOUNDSE
25856627	CONCURRENCY ERROR WHEN EDITING MUTIPLE PERSON CONTACT WHEN 1 IS OPT IN
25886353	ADD BATCH PARAMETER DIST-THD-POOL TO ALL BATCH CONTROLS
25871765	C2M - FR: DISPLAY CONTRACT OPTION TYPE TAB AND BF INTERVAL VALUES MENU ITEMS