Oracle Utilities Customer Care and Billing

Installation Guide

Release 2.9.0.0.0

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ORACLE®

Oracle Utilities Customer Care and Billing Installation Guide, Release 2.9.0.0.0

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Preface

Welcome to the Oracle Utilities Customer Care and Billing Installation Guide.

This guide provides an overview about how to install Oracle Utilities Customer Care and Billing V2.9.0.0.0.

The preface includes:

- Audience
- Related Documents
- Updates to Documentation
- Conventions
- Acronyms
- Additional Resources

Audience

This guide is intended for anyone interested in the installation process.

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 Release Notes*

- *Oracle Utilities Customer Care and Billing Quick Install Guide*

- *Oracle Utilities Customer Care and Billing Installation Guide*

- *Oracle Utilities Customer Care and Billing Database Administrator's Guide*

- *Oracle Utilities Customer Care and Billing Database Changes Guide*

- *Oracle Utilities Customer Care and Billing Optional Products Installation Guide*

- *Oracle Utilities Customer Care and Billing Licensing Information User Manual*

Administrative and Business User Guides
- *Oracle Utilities Customer Care and Billing Administrative User Guide*

- *Oracle Utilities Customer Care and Billing Business User Guide*

Supplemental Documents
- *Oracle Utilities Customer Care and Billing Server Administration Guide*

- *Oracle Utilities Customer Care and Billing Security Guide*

Updates to Documentation

The complete Oracle Utilities Customer Care and Billing documentation set is available from Oracle Help Center at https://docs.oracle.com/en/industries/utilities/index.html.

Visit My Oracle Support for additional and updated information about the product.

Conventions

The following text conventions are used in this document:

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

Acronyms

The following acronyms and terms are used in this document:

Acronym	Definition
CCB	Oracle Utilities Customer Care and Billing
WLS	WebLogic Server
FW	Framework
OUAF	Oracle Utilities Application Framework

Additional Resources

For more information and product support, visit the Oracle Support website.

Chapter 1

Overview

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

The Oracle Utilities Customer Care and Billing installation involves the following steps:

1. Review the different tiers of the application architecture as described in 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 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 Planning the Installation.

5. Install all required third-party software as described in 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 Installing the Application Server Component of Oracle Utilities Application Framework.

7. Install Oracle Utilities Customer Care and Billing as described in Installing the Application Server Component of Oracle Utilities Customer Care and Billing.

8. Follow the installation guidelines described in Additional Tasks.

Chapter 2

Application Architecture Overview

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

Application Architecture

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

Refer to the *Oracle Utilities Customer Care and Billing Server Administration Guide* included in this release 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 chapter provides 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
- Operating Systems and Application Servers
- 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, refer to *Oracle Utilities Application Framework Architecture Guidelines (Document ID 807068.1)* available on My Oracle Support.

The final hardware and software decisions must comply with the specific Oracle Utilities Customer Care and Billing requirements as described in 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

The software and hardware requirements for Tier 1 are:

Configuration	Processor	Memory (RAM)
Mninimum	Pentium IV - 2.0 GHz	1024 MB
Recommended	Pentium IV - 3.0+ GHz or any Core 2 Duo or any Athlon X2	2048MB

Minimum monitor display size: 1920 X 1080

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

Refer to the Supported Platforms section in this chapter 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 sizing excludes the Oracle database server installation.

Tier 3, Database Server: Software and Hardware Requirements

Refer to the Supported Platforms section in this chapter for information about 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, refer to Installing Application Server Prerequisite Software.

Operating Systems and Application Servers

This section details the operating system and application server combinations on which this version of Oracle Utilities Customer Care and Billing is supported.

Application Server Operating Systems
- Oracle Linux 8.x for x86_64

- Oracle Solaris 11.4+ for SPARC (64-bit)

- IBM AIX 7.2. TL5+ for POWER (64-bit)

Prerequisite Application Server Software

- Oracle Database Client 19c

- Oracle Java SE Development Kit 1.8.0_x (Windows, Solaris and Linux platforms only)

- IBM 64-bit SDK for AIX 8.0.x.x (IBM platforms only)

- Select jars from Hibernate ORM 4.1.0

- Oracle WebLogic Server 12c (Release 12.2.1.4) 64-bit

   Notes:

   Oracle Linux is 100% user space-compatible with Red Hat Enterprise Linux, therefore, Oracle Utilities Application Framework is also supported on Red Hat Enterprise Linux.

   Refer to the *Oracle Utilities Application Framework Database Administrator's Guide* for the Oracle database server requirements.

Refer to the *Certification Matrix for Oracle Utilities Products (Document ID 1454143.1)* document on My 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 12.1.0.2+ means that 12.1.0.2 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 8.x indicates that any version of Linux 8 (8.0, 8.1, 8.2 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

- Oracle WebLogic Server (Fusion Middleware Infrastructure) 12.2.1.4 and any higher versions of Oracle are supported.

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

Oracle Database Server

Prerequisite database server software (on any vendor supported platform where x is vendor supported version):

- Oracle Database Server Enterprise Edition 19c

- Oracle Database Server Standard Edition 2 19c

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
Install Dir ("$SPLEBASE") Location	10 GB recommended 5 GB minimum	This is the location where the application and Framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files. **Note**: This does not include the size of the edge product.
Log Dir ("$SPLOUTPUT") Location	10 GB recommended 2 GB minimum	This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected.
Location of the application web work files on the web servers	5 GB recommended 2 GB 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.

Location	Size	Usage
Installation Temporary Area	10 GB minimum	The application gets installed from this location. You need enough space to un-compress the files and install the application.
Oracle Data Area	10 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 4.1.0 which 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 focuses on planning an Oracle Utilities Customer Care and Billing installation, including:

- Installation and Configuration Overview

- Before You Install

- 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:
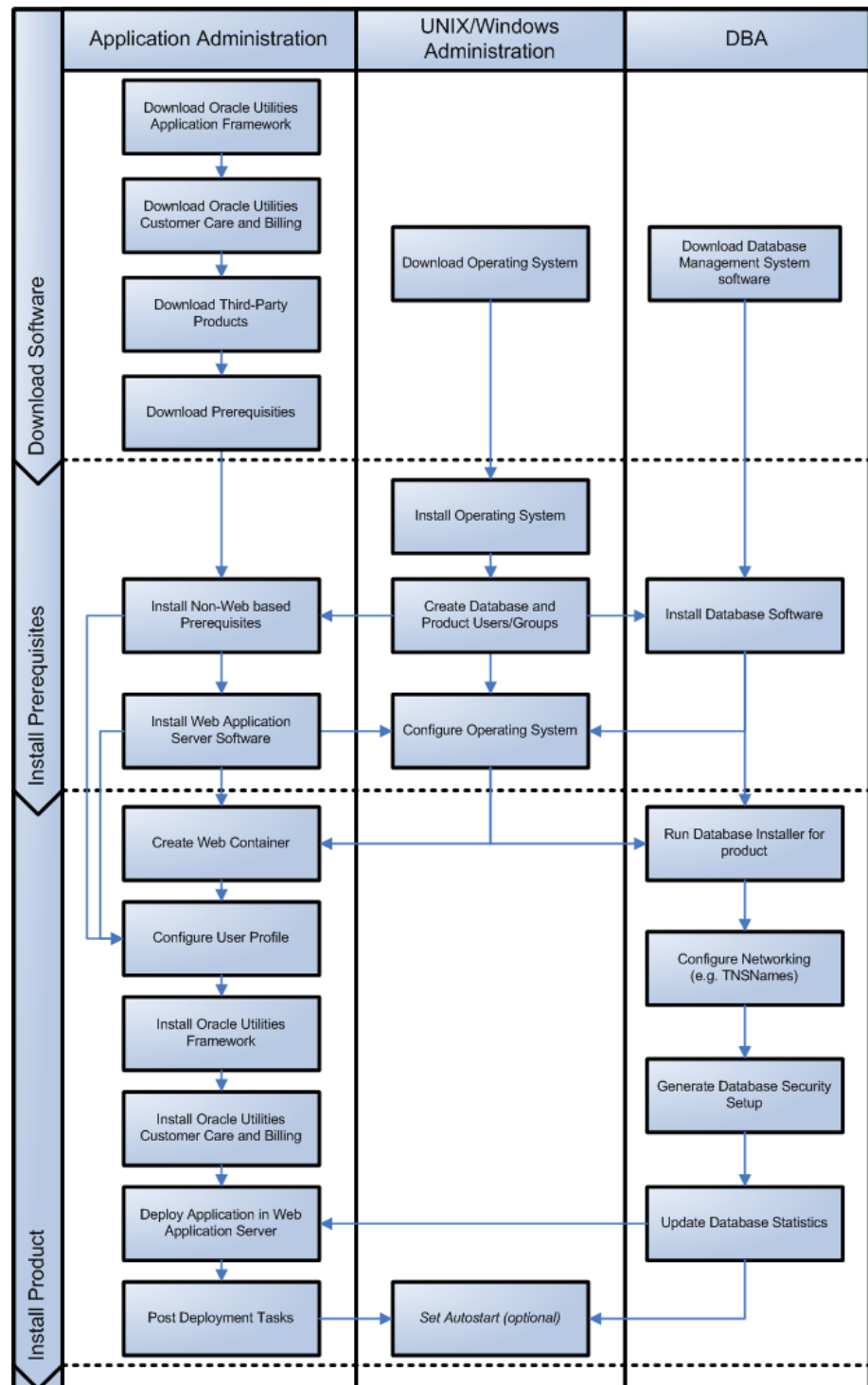
Before You Install

Refer to My Oracle Support for up-to-date additional information about the Oracle Utilities Customer Care and Billing installation.

WebLogic Native Installation

With Oracle Utilities Application Framework 4.5.0.0.0, a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Framework (Doc ID 2413918.1)* document on My Oracle Support for more information.

Application Server Clustering

If you are considering application server clustering, refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Framework (Doc ID 2413918.1)* document on My Oracle Support.

Additional information about WebLogic clustering, refer to the Fusion Middleware Using Clusters for Oracle WebLogic Server documentation.

Directory Names

Directory cannot contain whitespace characters.

Installation Checklist

The following checklist will 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, refer to Installing Application Server Prerequisite Software.

   - Oracle client 19c

   - Java 8

   - Hibernate 4.1.0

4. Install optional software.

5. Install the Oracle WebLogic 12.2.1.4 web server.

   Note: If you are upgrading and you are currently running Oracle Application Server, please contact your Global Support Representative.

6. Verify that the software is installed.

7. Set up the environment variables.

8. Install Oracle Utilities Application Framework.

9. Install Oracle Utilities Application Framework prerequisite single fixes if there are any. Else, skip this step.

10. Install Oracle Utilities Customer Care and Billing.

11. Install Oracle Utilities Customer Care and Billing single fixes if there are any. Else, skip this step.

12. Deploy Oracle Utilities Customer Care and Billing application.

13. Complete the post-installation tasks.

14. Proceed with 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 a 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 Operating Systems and Application Servers section in Supported Platforms and Hardware Requirements prior to running any of the installation utilities.

The following prompt appears 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

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 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 Installing Application Server Prerequisite Software.

Refer to the *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
***Additional JAR Directory	WLTHINT3CLIENT_JAR_DIR

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

** 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.

*** Refer to the Setting Up and Using the Additional JAR Directory section in Installing Application Server Prerequisite Software for more information.

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

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.

Starting Oracle Utilities Application Framework v4.4.0.0.0 the keystore and truststore options have been removed from the Menu and defaulted into the following template user exit, which is loaded by all properties files: templates/ FW_spl.properties.keystore.truststore.include.

The user can still customize those options using the "Centralized Properties Customization".

Upgrades from Oracle Utilities Application Framework versions below 4.4.0.0.0 will still use the keystore and truststore options recorded in the existing etc/ENVIRON.INI file (Menu options file).

Note: Populate the "Import Keystore Directory" option to import an existing keystore.

Keystore options include:

Menu Option	Name Used in Documentation	Customer Install Value
Import Keystore Directory	KS_IMPORT_KEYSTORE_FOLDER	

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	
Installation Application Viewer Module	WEB_ ISAPPVIEWER	
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	
Business Server Application Name	BSN_APP	

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	

Menu Option	Name Used in Documentation	Customer Install Value
Web Context Root	WEB_CONTEXT_ROOT	
WebLogic JNDI User ID	WEB_WLSYSUSER	
WebLogic JNDI Password	WEB_WLSYSPASS	
WebLogic Server Name	WEB_WLS_SVRNAME	
Web Server Application Name	WEB_APP	
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	
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	
Database Name	DBNAME	
Database Server	DBSERVER	
Database Port	DBPORT	
ONS Server Configuration	ONSCONFIG	

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

Menu Block 6 - 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	

Advanced Menu Options

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

Linux/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	
WebLogic ThreadPoolWorker Enabled	WLS_THEADPOOLWORKERENABLED	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Number of Threads	BATCHTHREADS	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	
Enable Batch Edit Functionality	BATCHEDIT_ ENABLED	
Batch Online Log Directory	BATCH_ONLINE_LOG_DIR	
JDBC Read Timeout	JDBC_TIMEOUT	
Enable JMS Global Flush for Batch	ENABLE_JMS_GLOBAL_FLUSH	
Add UsernameToken.xml	ADD_USERNAMETOKEN_XML	
IWS deployment target	WLS_CLUSTER_NAME	
Web Admin Server Host	WEB_ADMIN_SERVER	
Split File Size in MB	TEMPSTORAGE_SPLITFILESIZE	
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	

Menu Option	Name Used in Documentation	Customer Value Install
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	

Menu Block 51 - WebLogic Advanced Environment Memory Configuration

WebLogic advanced environment memory configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
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 Additional Options	BATCH_MEMORY_ADDITIONAL_OPT	

Menu Block 52 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Deploy XAI Application Module	WEB_DEPLOY_XAIAPP	
Web Application Cache Settings	WEB_L2_CACHE_MODE	
Web Server Port Number	WEB_WLPORT	
CSRF Protection For REST Services	CSRF_PROTECTION	
OWSM Protection For REST Services	OWSM_PROTECTION_FOR_REST_SERVICES	
Domain Home Location	WLS_DOMAIN_HOME	

Menu Option	Name Used in Documentation	Customer Install Value
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	
Strip HTML Comments	STRIP_HTML_COMMENTS	
Authentication Login Page Type	WEB_WLAUTHMETHOD	
Web Form Login Page	WEB_FORM_LOGIN_PAGE	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_PAGE	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE	
Help Form Login Page	WEB_HELP_FORM_LOGIN_PAGE	
Help Form Login Error Page	WEB_HELP_FORM_LOGIN_ERROR_PAGE	
Web Security Role	WEB_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	
Enable Strict Transport Security		
Strict Transport Security Max Age	HSTS_MAX_AGE	
Strict Transport Security Include Subdomains	HSTS_SUBDOMAINS	
Strict Transport Security Preload	HSTS_PRELOAD	
User Interface Style	USER_INTERFACE_STYLE	
Oracle Guided Learning Id	ORACLE_GUIDED_LEARNING_ID	

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	

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
Enable CORS For Embedded UI	ENABLE_CORS	
Source Origin for CORS Host	CORS_HOST	
Source Origin for CORS Port	CORS_PORT	
Source Origin for CORS Scheme	CORS_SCHEME	
Restriction URIs Enable	CLOUD_RESTRICTION_URIS_ 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_VARIA BLE_LIST_FILE_LOCATION	
Directory For Variable F1_CMA_FILES	CLOUD_LOCATION_ F1_MIGR_ASSISTANT_FILES	
URI For Variable F1_OAUTH2_URI	CLOUD_LOCATION_F1_ OAUTH2_URI	
URI for Variable F1_BASE_REST_URL	CLOUD_LOCATION_F1_BASE_ REST_URL	
URI for Variable F1_OPEN_API_BASE_URL	CLOUD_LOCATION_F1_OPEN_ API_BASE_URL	
URI For Variable F1_BASE_WEB_URI	CLOUD_LOCATION_F1_BASE_ WEB_URI	
URI For Variable F1_BASE_IWS_URI	CLOUD_LOCATION_F1_BASE_I WS_URI	
Consolidated Logfile Full Path	CONSOLIDATED_LOG_FILE_P ATH	
Temporary File Location	TMP_FILE_LOCATION	

Menu Block 56 - Mobile Security Configuration

Mobile Security configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Enable Mobile Application	MOBILE_ENABLED	
Deploy Only Mobile Web Application	MOBILE_APP_ONLY	
Mobile Application Directory	MOBILE_APPDIR	
Allow Self Signed SSL Certificates	ALLOW_SELFSIGNED_SSL	
Force Http Connection	FORCE_HTTP	
Web Mobile Form Login Page	WEB_MOBILE_FORM_LOGIN_PAGE	
Web Mobile Form Login Error Page	WEB_MOBILE_FORM_LOGIN_ERROR_PAGE	

Chapter 5

Installing Application Server Prerequisite Software

This chapter describes the software to be installed for each of the supported operating system and application server combinations mentioned below:

- AIX Application Server

- Oracle Linux 8.x and Red Hat Linux 8.x Application Server

- Solaris 11.4+ Application Server

- Windows 2012 Application Server

- Additional Prerequisite Software Information

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 TL5+(64-bit)	POWER 64-bit	WebLogic 12.2.1.4 (64-bit)

Web/Application Server Tier

AIX 7.2 TL5+ 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 User ID	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, "cissys" is the only user ID that can be used to access the installed files.

1. Create the "cisusr" user group.

2. Create the "cissys" user. The primary group is "cisusr".

3. Set the primary shell for **cissys** user to **Korn Shell**.

The shell scripts use ">" to overwrite shell functionality. By default, your operating system may be configured to not allow this functionality in the Users shell.

To avoid file access permission problems while 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.

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 Client 19c - 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 V8.0 (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:

https://www.ibm.com/support/pages/java-sdk-aix

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 12.2.1.4 (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 12.2.1.4.

  Note: With Oracle Utilities Application Framework V4.5.0.0.0 a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* document on My Oracle Support.

Oracle Linux 8.x and Red Hat Linux 8.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 8.x (64-bit)	x86_64	Oracle WebLogic 12.2.1.4 (64- bit)
Red Hat Enterprise Linux 8.x (64-bit)		

Web/Application Server Tier

Oracle Enterprise Linux 8.x or Red Hat Enterprise Linux 8.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 User ID	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, "cissys" is the only user ID that can be used to access the installed files.

1. Create the "cisusr" user group.

2. Create the "cissys" user. The primary group is "cisusr".

3. Set the primary shell for **cissys** user to **Korn Shell**.

The shell scripts use ">" to overwrite shell functionality. By default, your operating system may be configured to not allow this functionality in the Users shell.

To avoid file access permission problems while 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.

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 Client 19c - 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 V8.0 Update 131 or Later (64-Bit)

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

https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.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 12.2.1.4 (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 12.2.1.4.

  Note: With Oracle Utilities Application Framework V4.5.0.0.0 a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* document on My Oracle Support.

Solaris 11.4+ 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 11.4+ (64-bit)	SPARC	Oracle WebLogic 12.2.1.4 (64-bit) version

Web/Application Server Tier

Solaris 11.4+ 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 User ID	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, "cissys" is the only user ID that can be used to access the installed files.

1. Create the "cisusr" user group.

2. Create the "cissys" user. The primary group is "cisusr".

3. Set the primary shell for **cissys** user to **Korn Shell**.

The shell scripts use ">" to overwrite shell functionality. By default, your operating system may be configured to not allow this functionality in the Users shell.

To avoid file access permission problems while 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.

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 Client 19c - 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.

Install the /usr/ucb/ps command

Installing the /usr/ucp/ps command is a prerequisite for Solaris platforms below version 11.4. It helps to execute the following command successfully.

```
spl.sh -b stop (stop the Threadpool Worker)
```

Oracle Java Development Kit V8.0 Update 131 or Later (64-Bit)

The Oracle Java packages can be obtained from:

https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.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 12.2.1.4 (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 12.2.1.4.

  Note: With Oracle Utilities Application Framework V4.5.0.0.0 a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* document 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 12.2.1.4 (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 19c - 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 V8.0 Update 131 or Later (64-Bit)

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

https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.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 cissys user ID, make sure 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 12.2.1.4 (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 12.2.1.4.

  Note: With Oracle Utilities Application Framework V4.5.0.0.0 a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* document on My Oracle Support.

Additional Prerequisite Software Information

This section outlines additional information related to installing the prerequisite software, including:

- Setting Up and Using the Additional JAR Directory
- Special Note to Upgrade from a WebLogic 12.1.3.x Environment

Setting Up and Using the Additional JAR Directory

The additional JAR directory must be populated if the Web Application Server Home directory is not set.

For example: The environment is for batch only and the server has no WebLogic installed. In this scenario, the Additional JAR Directory must be created prior to the installation and the following list of WebLogic JARs should be copied to that directory (full path from the actual WebLogic location which must be installed in the web server).

```
<Web Application Server Home Directory>/server/lib/
wlthint3client.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.codehaus.woodstox.stax2-api.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-client.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-common.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.bundles.repackaged.jersey-guava.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-server.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.media.jersey-media-jaxb.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.media.jersey-media-multipart.jar
if WebLocic 12.2.1.[0-2].0:
<Web Application Server Home Directory>/../oracle_common/modules/
org.codehaus.woodstox.woodstox-core-asl.jar
if WebLocic is not 12.2.1.[0-2].0:
<Web Application Server Home Directory>/../oracle_common/modules/
com.fasterxml.woodstox.woodstox-core.jar
```

If the Additional JAR directory is configured, the initialSetup process will pull those JARs from that directory. If it is not configured, the initialSetup process will pull those JARs from the Web Application Server Home directory.

Special Note to Upgrade from a WebLogic 12.1.3.x Environment

If you are upgrading from an environment which is using WebLogic 12.1.3.x, make sure to follow the steps below prior to the installation:

1. Install Oracle WebLogic Server (Fusion Middleware Infrastructure) 12.2.1.4.

2. Install Oracle Java SE Development Kit 1.8.0_261 (if not installed yet).

3. Shutdown the application server environment.

4. Take a full backup of the application:

    ```
    $SPLEBASE
    ```

5. Set the environment:

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

6. Reconfigure the environment to point to the new WebLogic and Java (if upgraded Java as well):

    Execute:

    ```
    configureEnv.sh -i
    ```

    Update:

    ```
    "Web Java Home Directory" and "Web Application Server Home
    Directory"
    Type <P> to process (no need to rerun initialSetup.sh).
    ```

7. Set the environment again.

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

8. Upgrade the Oracle Utilities Application Framework to V4.5.0.0.0.

```
install.sh -u
```

Chapter 6

Installing the Application Server Component of Oracle Utilities Application Framework

Installing Oracle Utilities Application Framework ("the framework") is the prerequisite and foundation to install a framework-based application, such as Oracle Utilities Customer Care and Billing.

This chapter describes the process to install Oracle Utilities Application Framework, including:

- Installation Overview
- Pre-Installation Tasks
- Installing Oracle Utilities Application Framework
- Installing Hibernate 4.1.0
- Using and Setting Up "Additional JAR Directory"
- Special Note for Upgrading from a WebLogic 12.1.3.x Environment

Installation Overview

Download the installation packages for your Oracle Utilities Application Framework-based application from Oracle Software Delivery Cloud.

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 Installing Application Server Prerequisite Software.

After the Oracle Utilities Application Framework installation is successfully completed and the framework application environment is created, install Oracle Utilities Customer Care and Billing on top of the framework environment.

After installing a working Oracle Utilities Application Framework server, configure it 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. Refer to the Supported Platforms section in Supported Platforms and Hardware Requirements for more details.

Pre-Installation Tasks

This section lists the tasks that need to be performed before installing Oracle Utilities Application Framework, including:

-   Hardware and Software Version Prerequisites
-   Database Installation
-   Installation Prerequisites
-   Copying and Decompressing Install Media
-   Setting Permissions for the cistab File in UNIX

Hardware and Software Version Prerequisites

Refer to the Supported Platforms section in Supported Platforms and Hardware Requirements for all available platforms that are required to install the product.

Database Installation

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

Installation Prerequisites

Refer to Installing Application Server Prerequisite Software for details about the preparations to be done on the server prior to installing the application server.

Read the server setup requirements carefully and make sure that all prerequisite software is installed and that all required environment variables are set. Accurate server setup and proper environment variable settings are an essential prerequisite for successful environment installation.

Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.5.0.0.0 installation file is delivered in jar format for both UNIX and Windows platforms.

If you are planning to install multiple Oracle Utilities Application Framework V4.5.0.0.0 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:

1. Login to the application server host with the Oracle Utilities Application Framework administrator user ID.

2. Download the Oracle Utilities Application Framework V4.5.0.0.0 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 FW-V4.5.0.0.0-MultiPlatform.jar file from the delivered package to <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-V4.5.0.0.0-MultiPlatform.jar
   ```

   > **Note:** In order to be able to execute the "jar" command you need to have the Java JDK installed.

A sub-directory "FW-V4.5.0.0.0" is created. It contains the installation software for the Oracle Utilities Framework Application server.

Setting Permissions for the cistab File in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the <TEMPDIR>/FW-V4.5.0.0.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc

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

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

Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Oracle Utilities Application Framework, including:

- Installation Process (Brief Description)
- Installation Process (Detailed Description)
- Configuring the OUAF Keystore

Installation Process (Brief Description)

1. Login as the Oracle Utilities Application 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 Installing Application Server Prerequisite Software.

3. Change directory to the *<TEMPDIR>*/FW-V4.5.0.0.0 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.

   For initial install:

   Unix:

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

   Windows:

   ```
   install.cmd
   ```

6. Follow the messages and instructions that are produced by the application installation utility. Use the completed worksheets in the Installation Menu Functionality Overview section in Planning the Installation to assist you.

Installation of Oracle Utilities Framework Application Server is complete if no errors occurred during installation.

Installation Process (Detailed Description)

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

Login 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 the Installing Application Server Prerequisite Software in Installing Application Server Prerequisite Software. You will need to obtain specific information for the install.

3. Change directory to the *<TEMPDIR>*/FW-V4.5.0.0.0 directory and start the application installation utility by executing the appropriate script:

   Unix:

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

   Windows:

   ```
   install.cmd
   ```

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

   Use the completed Environment ID, Roles, Third Party Software Configuration worksheet in the Installation Menu Functionality Overview section in Installing the Application Server Component of Oracle Utilities Application Framework to complete this step.

5. Select menu item 2: Keystore Options.

   Use the completed Keystore Options Worksheet to complete this step. See Installation Menu Functionality Overview section in Installing the Application Server Component of Oracle Utilities Application Framework.

6. Select menu item 50: Environment Installation Options.

   Use the completed Environment Installation Options Worksheet to complete this step. See Installation Menu Functionality Overview section in Installing the Application Server Component of Oracle Utilities Application Framework.

   > **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 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 *%SPLEBSE%\etc for Windows)* directory. This script sets up all the necessary environment variables and shell settings for the application server to function correctly.

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

   - $PATH: An adjustment to $PATH is made so that all of the environment scripts and objects will be in the path.

   - $SPLEBASE (%SPLEBASE%): Stands for <SPLDIR>/ <SPLENVIRON> directory

   - $SPLOUTPUT (%SPLOUTPUT%): Stands for <SPLDIROUT>/ <SPLENVIRON> directory

   - $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>
     ```

   This script should be executed each time you want to connect 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.

   Refer to Planning the Installation for settings and configuration.

Configuring the OUAF Keystore

Refer to the *Security Guide* available in the documentation package for a detailed description of the keystore.

Installing Hibernate 4.1.0

You must install Hibernate before installing the product.

To install Hibernate 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 https://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:

   ```
   unzip hibernate-release-4.1.0.Final.zip
   ```

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

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

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/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
   ```

Using and Setting Up "Additional JAR Directory"

"Additional JAR Directory" must be populated if the "Web Application Server Home Directory" is not set. For instance, if the environment is for Batch only and the server has no WebLogic installed.

In this scenario, the "Additional JAR Directory" must be created prior to the installation and the following list of WebLogic JARs should be copied there (full path from original WebLogic location, which must be installed in the Web Server):

```
<Web Application Server Home Directory>/server/lib/
wlthint3client.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.codehaus.woodstox.stax2-api.jar
```

```
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-client.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-common.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.bundles.repackaged.jersey-guava.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.core.jersey-server.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.media.jersey-media-jaxb.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.glassfish.jersey.media.jersey-media-multipart.jar

if WebLogic 12.2.1.[0-2].0:
<Web Application Server Home Directory>/../oracle_common/modules/
org.codehaus.woodstox.woodstox-core-asl.jar

if WebLogic is not 12.2.1.[0-2].0:
<Web Application Server Home Directory>/../oracle_common/modules/
com.fasterxml.woodstox.woodstox-core.jar
```

If the "Additional JAR Directory" is configured, the initialSetup process will pull those JARs from that directory.

If the "Additional JAR Directory" is not configured, the initialSetup process will pull those JARs from the "Web Application Server Home Directory".

Special Note for Upgrading from a WebLogic 12.1.3.x Environment

If you are upgrading from an environment that is using WebLogic 12.1.3.x, make sure to complete the following steps prior to the installation:

1. Install Oracle WebLogic Server (Fusion Middleware Infrastructure) 12.2.1.x.

2. Install Oracle Java SE Development Kit 1.8.0_x (if not installed yet).

3. Shut down the Application Server environment.

4. Take a full backup of the $SPLEBASE application.

5. Set the environment.

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

6. Reconfigure the environment to point to the new WebLogic and Java (if upgrade Java as well).

   Execute:

   ```
   configureEnv.sh -i
   ```

   Update:

   ```
   Web Java Home Directory" and "Web Application Server Home
   Directory"
   ```

   Type <P> to process (no need to rerun initialSetup.sh)

7. Set the environment again.

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

8. Upgrade the Oracle Utilities Application Framework to V4.5.0.0.0. Execute the following command:

```
install.sh -u
```

Chapter 7

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

This chapter describes the procedure to install Oracle Utilities Customer Care and Billing on top of the previously created Oracle Utilities Application Framework environment. It focuses on the following:

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

Introduction

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 sections.

You *must* initialize the Framework environment along with the required Patch Set prior to proceeding with Oracle Utilities Customer Care and Billing installation. For detailed instructions refer to the Preparing for the Installation section in this chapter.

Pre-installation Tasks

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

- Installing Prerequisite Patches
- Copying and Decompressing Install Media
- Preparing for the Installation

Installing Prerequisite Patches

> **Note:** This section is applicable only if there are any Oracle Utilities Application Framework prerequisites patches to install.

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 in the CCB-V2.9.0.0.0-FWPREREQ-MultiPlatform.zip file, which is part of the downloaded media pack.

For a list of patches included in this rollup, refer to Application Framework Prerequisite Patches.

To install the application and database patches on top of Oracle Utilities Application Framework 4.5.0.0.0:

1. Copy the file CCB-V29000-FW-PREREQ-MultiPlatform.jar in the delivered package to a <TEMPDIR>. Unjar using the command below.

```
jar -xvf CCB-V29000-FW-PREREQ-MultiPlatform.jar
```

2. Initialize the Oracle Utilities Application Framework environment to install the Framework patch rollup into.

   UNIX

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

Windows

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

3. Install application patches.

    a. Navigate to the <temp location>/FW-V4.5.0.0.0-Rollup/Application folder.

    b. Run 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. Refer to the Supported Platforms section in Supported Platforms and Hardware Requirements for version and installation details regarding the database and operating system versions. Refer to Installing Application Server Prerequisite Software for the prerequisite third-party software installation instructions.

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

1. Login 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-V2.9.0.0.0-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-V2.9.0.0.0-MultiPlatform.jar
    ```

    Note: You will need to have Java JDK installed on the machine used to (un)jar the application server installation package. Install the JDK that is supported for the install on your platform to be able to use the jar command. The Java packages are available here: http://java.sun.com/products/archive/index.html.

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

For both Unix and Windows platforms, a sub-directory named CCB.V2.9.0.0.0 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. Login as an Oracle Utilities Customer Care and Billing Administrator (default is "cissys").

2. Initialize the Oracle Utilities Application Framework environment in which the product is installed.

   UNIX:

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

   Windows:

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

3. Stop the environment if running.

Installing the Application

To install the Oracle Utilities Customer Care and Billing application:

1. Change to the <TEMPDIR>/CCB.V2.9.0.0.0 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. Run the script.

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   Note: On UNIX, make sure to 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 run was not stopped due to errors and you did not interrupt the run, the Oracle Utilities Customer Care and Billing installation is complete.

6. Run 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
```

7. Start up the environment.

The final step of the installation process is the environment startup. Refer to the *Native Installation Oracle Utilities Framework (Doc ID 1544969.1)* whitepaper on My Oracle Support for start/stop procedure.

Installing Post-release Patches

> **Note:** This section is applicable only if there are any Oracle Utilities Customer Care and Billing rollup patches to install.

The Oracle Utilities Customer Care and Billing patches must be installed after installing Oracle Utilities Customer Care and Billing.

The patches are available as a convenience rollup inside the CCB-V2.9.0.0.0-Rollup-MultiPlatform.zip file, which is part of the downloaded media pack.

For a list of the patches included in this rollup, refer to Oracle Utilities Customer Care and Billing Post-release Patches.

To install the application and database patches on top of Oracle Utilities Customer Care and Billing 2.9.0.0.0:

1. Copy the CCB-V29000-Rollup-MultiPlatform.jar file from the delivered package to a <TEMPDIR>. Unjar it using the command below.

```
jar -xvf CCB-V29000-Rollup-MultiPlatform.jar
```

2. Initialize the Oracle Utilities Customer Care and Billing environment where the Oracle Utilities Customer Care and Billing patch rollup has to be installed.

   UNIX

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

   Windows

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

3. Install the application patches.

   a. Navigate to the <temp location>/CCB-V2.9.0.0.0-Rollup/Application folder.

   b. Run the group installation script.

      UNIX/LINUX

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

```
./installSFgroup.sh
```

Windows

```
installSFgroup.cmd
```

4. Start up the environment.

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.

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.

Refer to 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.

Chapter 8

Additional Tasks

This chapter describes the 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

- Deploying Inbound Web Services (IWS)

- Domain Templates

Importing Self-Signed Certificates

If you are using self-signed certificates and the Inbound Web Services (IWS) feature, it is required that these certificates are imported into the OUAF truststore file.

To import the self-signed certificates:

1. Start Oracle WebLogic.

2. Initialize a command shell and setup the environment:

    UNIX

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

    For example:

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

    Windows

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

    For example:

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

3. Run the following script to generate all the information. If the [<server>:<port>] are not specified, they will be retrieved from ENVIRON.INI.

    UNIX

    ```
    $SPLEBASE/bin/initialSetup.sh -i [<server>:<port>]
    ```

    Windows

    ```
    %SPLEBASE%\bin\ initialSetup.cmd -i [<server>:<port>]
    ```

    Note: Execute these commands before deploying the IWS application.

Customizing Configuration Files

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

Below is a sample procedure to customize Hibernate properties of the SPLWeb web application:

1. Locate the hibernate.properties.template in the $SPLEBASE/templates directory.

2. Copy the file to cm.hibernate.properties.template.

3. Apply the changes to cm.hibernate.properties.template.

4. Update the application war file with the latest changes:

    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 exits 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> it doesn't exists.

<PROPERTY_NAME>=<VALUE>

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

<PROPERTIES_FILE>:<PROPERTY_NAME>=[DELETE]

- Remove <PROPERTY_NAME> from <PROPERTIES_FILE> if 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_conne
ction=[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 the Oracle Utilities Application Framework SDK documentation for more information about migrating CM code.

Generating the Application Viewer

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

To generate the additional items in the application viewer:

1. Shut down the environment.

2. Initialize a command shell and setup the environment:

   UNIX

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

Example:

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

Windows

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

Example:

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

3. Run 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 the customer modifications (CM) have been applied to an environment when it includes Java code.

To rebuild the Javadoc indexes, run the following command:

Windows

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

UNIX

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

Configuring the Environment for Batch Processing

Refer to 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.

Deploying Inbound Web Services (IWS)

All existing XAI Inbound Services have been duplicated as Inbound Web Services. The application no longer supports XAI. The duplicated services are designed to work seamlessly in this release, and customers providing custom services are encouraged to migrate to Inbound Web Services to take full advantage of the new, more efficient web service technology.

For more information about 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.

To deploy inbound web services:

UNIX

1. Enable the Web Services functionality.

    a. cd $SPLEBASE/bin

    b. Execute configureEnv.sh –a.

        Select option 50 and set the options.

        *   "IWS Deployment Target" is recommended to be set to the server to which the web service EAR will be deployed.

        *   "Web Admin Server Host" is recommended to be set to the WebLogic admin server host.

        Select option 52 and set the option.

        *   "This is a development environment" is recommended to set to true to allow web service deployment from the browser user interface.

        Enter "P" to process.

2. Run initialSetup.sh.

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

    Create an Oracle WebLogic user configuration file (as <SPLEBASE>/etc/.wlsuserconfig) and an associated key file (as <SPLEBASE>/etc/.wlsuserkey).

    Refer to the Oracle WebLogic product documentation on the storeUserConfig WLST command for additional details.

Make sure the admin server and web service target managed server(s) are running.

3. Run `initialSetup[.sh|.cmd] -i` to import the WebLogic server certificate into the Oracle Utilities Application Framework trust key store.

    ```
    initialSetup.sh -i
    ```

4. Run the step below in $SPLEBASE/bin to deploy the web service EAR file. Please note that the application server should be up before running the below command.

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

Windows

1. Enable the Web Services functionality.

    a. cd $SPLEBASE/bin

    b. Run configureEnv.cmd –a

        Select option 50 and set the options as below:

        •   "IWS Deployment Target" is recommended to be set to the server to which the web service EAR will be deployed.

        •   "Web Admin Server Host" is recommended to be set to the WebLogic admin server host.

        Select option 52 and set the option as below:

        •   "This is a development environment" is recommended to set to true to allow web service deployment from the browser user interface.

        Enter "P" to process.

2. Run initialSetup.sh.

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

3. Create an Oracle WebLogic user configuration file (as <SPLEBASE>/etc/.wlsuserconfig) and an associated key file (as <SPLEBASE>/etc/.wlsuserkey).

    Refer to the Oracle WebLogic product documentation on the storeUserConfig WLST command for additional details.

    Make sure the admin server and web service target managed server(s) are running.

4. Run `initialSetup[.sh|.cmd] -i` to import the WebLogic server certificate into the Oracle Utilities Application Framework trust key store.

    ```
    initialSetup.cmd -i
    ```

5. Run the step below in $SPLEBASE/bin to deploy the web service EAR file. Note that the application server should be up before running the following command.

    ```
    ksh ./iwsdeploy.cmd
    ```

Domain Templates

Configure the Oracle WebLogic application server to deploy it. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Framework (Doc ID 2413918.1)* on My Oracle Support for more details.

Chapter 9

Upgrading Oracle Utilities Customer Care and Billing

This chapter provides the instructions to upgrade Oracle Utilities Customer Care and Billing, including:

- Upgrade Paths
- Before You Upgrade
- Upgrade Procedure
- Post-Upgrade Verifications
- Installing Service Packs and Patches

Upgrade Paths

The following upgrade paths are applicable to this release:

- From V1.5.10, V1.5.15, V1.5.20, V2.0.5, V2.1.0, V2.2.0, V2.2.0.10, V2.3.1.10, V2.4.0.0, V2.4.0.1, V2.4.0.2, V2.4.0.3, V2.5.0, V2.5.0.1, V2.5.0.2, V2.6.0.0.0, V2.6.0.1.0, V2.7.0.0.0, V2.7.0.1.0, V2.7.0.3.0 or V2.8.0.0.0 to V2.9.0.0.0

  Before you can upgrade you must have a prior version installed. If not, follow the procedures described in Installing the Application Server Component of Oracle Utilities Application Framework and Installing the Application Server Component of Oracle Utilities Customer Care and Billing in this guide.

Before You Upgrade

Review the list of operating system, application server, and database server combinations supported for this version of Oracle Utilities Customer Care and Billing in the Supported Platforms section in Supported Platforms and Hardware Requirements.

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

> **Note:** While upgrading a previously installed application server, it is recommended to take a backup before starting the upgrade procedure. The upgrade installation removes the existing environment including the configurations.

Upgrade Procedure

The upgrade installation procedure consists of:

- Upgrading the Database Component
- Upgrading the Application Component

Upgrading the Database Component

Upgrading the Oracle Utilities Customer Care and Billing database component must be complete before you can upgrade the application component.

Refer to the **Upgrade Install** section in the *Oracle Utilities Customer Care and Billing Database Administrator's Guide* for instructions to upgrade the database component.

Upgrading the Application Component

A successful upgrade consists of the following steps:

- Upgrading the Oracle Utilities Application Framework Application Component
- Upgrading the Oracle Utilities Customer Care and Billing Application Component

Upgrading the Oracle Utilities Application Framework Application Component

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

- Copying and Decompressing Install Media for the Oracle Utilities Application Framework Application Component

- Setting Permissions for the cistab file in UNIX for the Oracle Utilities Application Framework Application Component

- Upgrading the Oracle Utilities Customer Care and Billing Application Component

Copying and Decompressing Install Media for the Oracle Utilities Application Framework Application Component

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

Refer to the Copying and Decompressing Install Media section in Installing the Application Server Component of Oracle Utilities Application Framework for instructions on copying and decompressing install media.

Setting Permissions for the cistab file in UNIX for the Oracle Utilities Application Framework Application Component

Refer to the Set Permissions for the cistab File in UNIX section in Installing the Application Server Component of Oracle Utilities Application Framework for instructions.

Upgrading the Oracle Utilities Application Framework Application Component

To upgrade the Oracle Utilities Application Framework application component:

1. Login to the application server host as administrator (the default is cissys on **UNIX**) or as a user with administrator privileges (on Windows).

2. Change directory to the bin folder.

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

   where <install_dir> is the location where the Oracle Utilities Application Framework V4.5.0.0.0 base application component is installed.

3. Initialize the environment by running the appropriate command:

   UNIX

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

   Windows

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

4. Change directory to the <TEMP_DIR>/FWV4.5.0.0.0 directory.

   NOTE: While installing Application Framework V4.5.0.0.0 from the previous environment to Oracle Utilities Customer Care and Billing V2.9.0.0.0 the install utility removes the existing environment and re-creates the environment. Take a backup before you proceed with

installing Application Framework V4.5.0.0.0 to retain any configurations for future reference.

5. Start the application installation utility by executing the appropriate script.

UNIX

```
ksh ./install.sh -u
```

Windows Server

```
install.cmd -u
```

> **Note**: The upgrade install does not clean library files that were removed from the latest version.

6. Once the install or upgrade has finished, the installation log location is displayed on the screen. If the log does not list any error messages, the installation of the application component of Oracle Utilities Application Framework is complete.

Upgrading the Oracle Utilities Customer Care and Billing Application Component

This section describes how to install the application component of Oracle Utilities Customer Care and Billing, including:

- Copying and Decompressing Oracle Utilities Customer Care and Billing Install Media

- Upgrading the Oracle Utilities Customer Care and Billing Application Component

- Creating WebLogic Domain

Copying and Decompressing Oracle Utilities Customer Care and Billing Install Media

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

Refer to the Copying and Decompressing Install Media section in Installing the Application Server Component of Oracle Utilities Application Framework for instructions on copying and decompressing install media.

Upgrading the Oracle Utilities Customer Care and Billing Application Component

Refer to the Installing the Application section in Installing the Application Server Component of Oracle Utilities Customer Care and Billing for steps to upgrade the Oracle Utilities Customer Care and Billing application component.

Creating WebLogic Domain

With Oracle Utilities Application Framework V4.5.0.0.0 a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* document on My Oracle Support for more information.

Post-Upgrade Verifications

After you complete the upgrade, verify the following:

1. Verify installation logs created under decompressed installer location for any errors.

2. Confirm that the installation logs do not contain any errors.

3. Confirm that all the configurations are correct.

   Refer to the Installation and Configuration Worksheets section in Planning the Installation for details.

4. Confirm that the database is ready.

5. Generate the Application Viewer.

6. Start the application server.

At this point, the installation is complete.

Refer to the *Oracle Utilities Customer Care and Billing Server Administration Guide* for more information on further configuring and operating the 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 about installing patches, refer to **Document ID 974985.1** on My Oracle Support.

Service packs and patches can be downloaded from on My Oracle Support.

Appendix A

Application Framework Prerequisite Patches

There are no Oracle Utilities Application Framework prerequisite patches to be installed in this Oracle Utilities Customer Care and Billing release.

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
27076412	BILL INTERCEPT IN BILL ROUTING ACCEPTS INVALID USER ID
31312917	INTERNAL SERVER ERROR WHEN INPUT FOR NUMERIC ONLY FIELDS IS INVALID
31682038	COPY OF 31591712 - NO COBOL WRAPPER CLASS FOR ALGORITHM SPOT 'WOTR' ERROR WHILE
31715312	CCS-ERP: RECORDS ARE NOT SUMMED UP IN GL EXTRACT FILE
31988237	CCS - IF THE COUNTRY IN INSTALLATION OPTION FRAMEWORK AS BLANK, START/STOP PAGE IS NOT WORKING
33382137	COPY OF 33292932 - RATE CHECK FAILED WITH "INTERVAL SIZE IS MISSING" FOR MATH CALCULATION RULE
33456786	COPY OF 33179507 - C1-ADUP1 BATCH THREADS ARE IN ERROR
33529397	COPY OF 33073591 - PDT - REFERENTIAL INTEGRITY ERROR WHEN USER ADDS A SS CONTACT
33548554	COPY OF 33241653 - CASE STATUS BPA SCRIPT ISSUE
33549617	COPY OF 33241242 - IN SOME CASES, REDSAAMT DOES NOT MARK FTS REDUNDANT AFTER PATCH 32941302
33560231	COPY OF 33540208 - "A VALUE FOR OPTION TYPE PORTAL NAVIGATION OPTION MUST BE SPECIFIED ON THE BUSINESS OBJECT" ERROR WHEN ADDING A CASE
33576870	COPY OF 28086828 - CCB COPY OF 30699418 - SA START DATE NEEDS TO BE UPDATED WITH SOM ACTUAL COMPLETION DATE

Bug Number	Description
33586727	COPY OF 32882496 - SECURITY: UNABLE TO SECURE DUPLICATE AND DELETE ACTIONS
33606431	COPY OF 32989638 - MTM TABLE COLUMN DEFINITION CHANGES REQUEST
33643595	COPY OF 33532833 - AFTER PATCH 33115606, START SERVICE FA CREATED FOR BACK-TO-BACK INSTEAD OF START/STOP FA
33663295	COPY OF 33600812 - CUSTOMER CONTACT LOGGING
33706661	COPY OF 33702103 - ADDING BILL DUE NOTIFICATION FAILING WHEN VALUES RESTRICTED USING CHARACTERISTIC TYPE
33723621	COPY OF 33707697 - STOP PROCESS FLOW FREEZING WITH UI ERROR ON FIRST PANEL WHEN SELECTING STOP DATE IN DATE PICKER
33732856	COPY OF 33551290 - C360 USAGE BILL CHART DISPLAY ISSUE ON COST/USAGE FILTER UPDATE
33732877	COPY OF 33184736 - START SERVICE PROCESS FLOW IS NOT SHOWING ALL SERVICES FOR THE PREMISE, IF THERE IS A GAP
33745671	COPY OF 33536419 - SST FLOW-START DOES NOT DISPLAY MULTI-SP SA TO START FROM PREVIOUS CUSTOMER
33753041	CXPROCESSSTARTSTOPREQUEST ADD BANK ACCOUNT INFO ON PERSON SELF-SERVICE PAYMENT OPTIONS AFTER AUTOPAY SETUP
33762609	COPY OF BUG 33149089 - PDT - CONTEXT PREMISE ID IS ALWAYS BLANK IN THE START STOP PAGE
33773304	COPY OF 33763575 - PAYMENT ARRANGEMENT REQUEST IS FAILING WITH MULTIPLE DEBT CLASSES
33787577	COPY OF 33640157 - ERROR ON ACTIVE ACCOUNT SUMMARY ZONE OF CUSTOMER INFORMATION PORTAL
33791071	SONAR - CODE QUALITY ISSUE ON ADJUSTMENTUPLOADPREPROCESS
33822836	COPY OF 33631980 - USAGE TRANSACTION IN MSCS WITH CUT-OFF DATE = DST CHANGE DATE GOES INTO ERROR
33848068	COPY OF 33795365 - DSS- SUPPORT NICK NAME FOR PAYMENT OPTIONS
33942536	COPY OF 33847972 - ZONE SQL NUMBER 1 HAS ENCOUNTERED AN EXCEPTION - C1-SVCLOCSA (ALGORITHM) , C1-RPRELSP (ZONE)

Bug Number	Description
33942538	COPY OF 33747325 - CUSTOMER SERVICE REQUEST GOING TO ACTIVATION ERROR WHILE MOVING FROM MANUAL ALTERATION TO ACTIVATED.

Appendix C

Oracle Utilities Customer Care and Billing Post-release Patches

There are no Oracle Utilities Customer Care and Billing post-release patches included in this release.