Oracle Utilities Customer Care and Billing

Installation Guide

Release 25.4

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ORACLE

Oracle Utilities Customer Care and Billing Installation Guide

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Preface

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

The preface includes:

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

- *Server Administration Guide*
- *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/energy-water/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: Installation and administration of the database server tier is described in detail in the *Oracle Utilities Customer Care and Billing Database Administrator's Guide* included in this release.
3. Install the database. For instructions, refer to the *Oracle Utilities Customer Care and Billing Database Administrator's Guide* included in this release.
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 *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 or 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

Configuration	Processor	Memory (RAM)	Storage	Monitor Display
Minimum	2 gigahertz (GHz) or?faster with 2 or more cores *	8 GB **	128 GB or higher ***	Refer to the Redwood Large resolution (currently 1024px).
Recommended	3 gigahertz (GHz) or?faster with 2 or more cores *	16 GB **	250 GB or higher ***	

* or comparable processor

** more RAM may be needed for more graphic intensive application features, such as Oracle Utilities Work and Asset Management's GIS Viewer or CM Portals that contain numerous graphs.

*** to support browser caching

Note that the hardware requirements above are based on running the application only, and without any additional software running concurrently. If your client setup requires other software running, please adjust the requirements to account for them.

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 or 9.x (64-bit) for x86_64
- Windows 11 Version x and Windows Server 2022 (for OUAF SDK use only)

Prerequisite Application Server Software

- Oracle Database Client 19c
- Oracle Java SE Development Kit 17.0.x (Windows and Linux platforms only)

  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 information on Oracle database server requirements.

Refer to the Certification Matrix for Oracle Utilities Products (Document ID 1454143.1) 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) 14.1.2
- 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 19c (64-bit) on-premises and cloud (ADB)

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 6 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 ("$SPLEBASE") Location	10 GB recommended 5 GB minimum	Location where the application and Framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files. **Note**: This does not include the size of the edge product.
Log Dir ("$SPLOUTPUT") Location	10 GB recommended 2 GB minimum	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	Used by various web server vendors to expand the application. It should be considered when installing these products. Refer to the individual web server documentation to determine the location of the temporary files.
Installation Temporary Area	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	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 issue patches and service packs for the operating systems, application servers and database servers on top of specific versions that Oracle Utilities Customer Care and Billing has been tested with.

If it is necessary to apply an upgrade, please do so in a test environment that is running on the same platform as your production environment prior to updating the Oracle Utilities Customer Care and Billing production environment.

Always contact Oracle Utilities Customer Care and Billing Support prior to applying vendor updates that do not guarantee backward compatibility.

Chapter 4

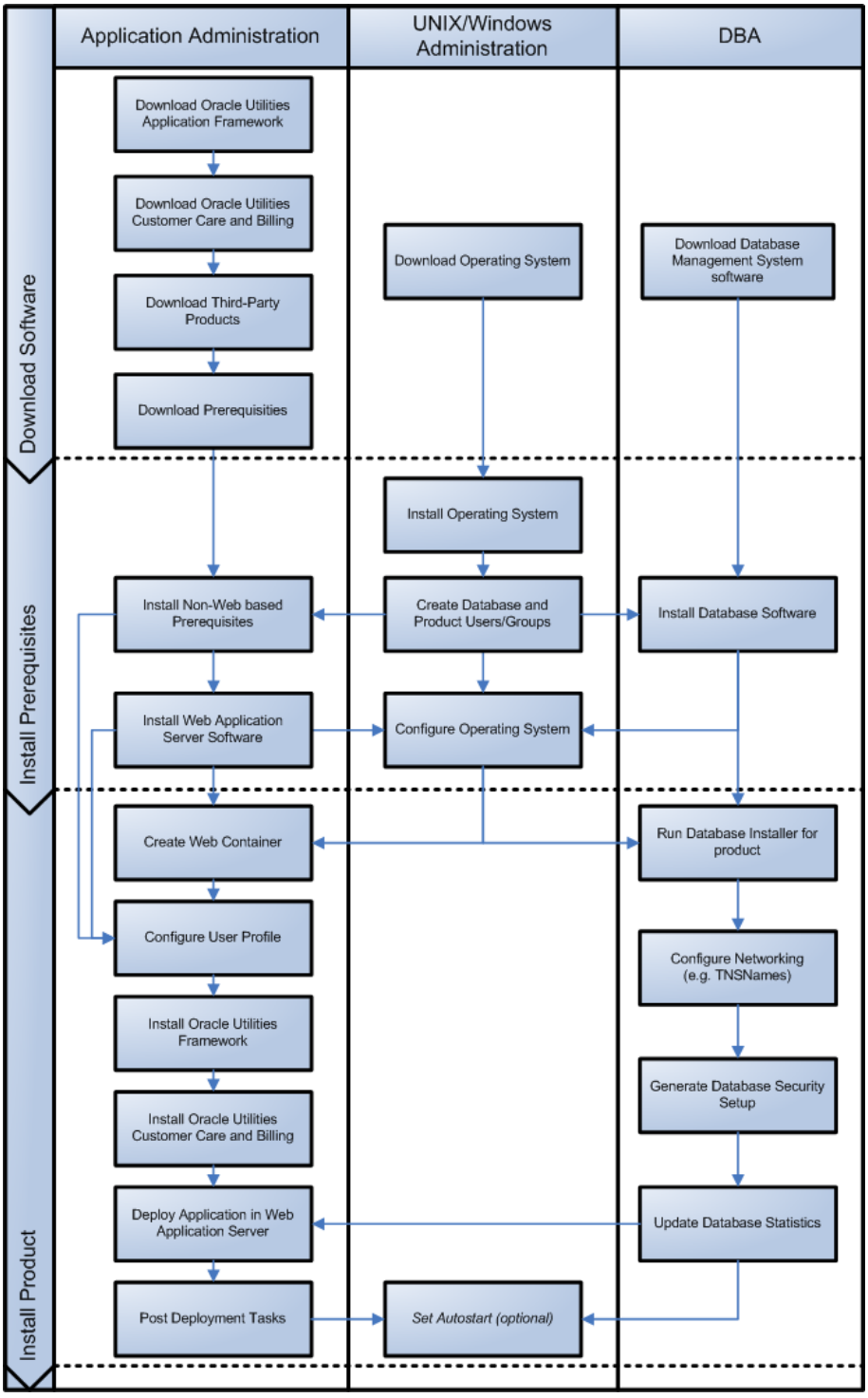
Planning the Installation

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 25.4, a WebLogic native installation is required. See the *Oracle WebLogic Configuration Guide for Oracle Utilities Framework* document on My Oracle Support for more information.

Application Server Clustering

If you are considering application server clustering, refer to the *Oracle WebLogic Configuration Guide for Oracle Utilities Framework* document on My Oracle Support.

For 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. For instructions, refer to the *Oracle Utilities Customer Care and Billing Database Administrator's Guide* included in this release.
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 17
4. Install optional software.
5. Install the Oracle WebLogic 14.1.2.x web server.

   Note: If you are upgrading and 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 selfservice 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	

**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 Additional Prerequisite Software InformationInstalling 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 that is loaded by all the 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	
Install Application Javadocs	WEB_ISJAVADOCS	
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

Refer to *Server Administration Guide* for additional details (default, valid values, usage, etc.)

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	
Web Context Root	WEB_CONTEXT_ROOT	

Menu Option	Name Used in Documentation	Customer Install Value
WebLogic JNDI User ID	WEB_WLSYSUSER	
WebLogic JNDI Password	WEB_WLSYSPASS	
WebLogic Server Name	WEB_WLS_SVRNAME	
Web Server Application Name	WEB_APP	
This Is A Production Env. And The Client Is Live	WEB_ISLIVEPRODUCTION	
Deploy Javadocs Module	WEB_DEPLOY_JAVADOCS	
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	
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	
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

Refer to the *Oracle Utilities Application Framework Server Administration Guide* for additional details on this configuration.

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 that is loaded by all the properties files:

templates/FW_spl.properties.keystore.truststore.include

You can still customize those options using the "Centralized Properties Customization" option. 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).

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	
Online Display Software Home	ONLINE_DISPLAY_HOME	
Max Queries To Hold In Cache Across All Threads	XQUERIES_TO_CACHE	

Menu Option	Name Used in Documentation	Customer Value Install
Seconds Timeout Flush Cache Completely	XQUERY_CACHE_FLUSH_TIMEOUT	
Malware Scan Host	MALWARE_SCAN_HOST	
Malware Scan Port	MALWARE_SCAN_PORT	
Malware Scan Timeout (Seconds)	MALWARE_SCAN_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
HTTP Allowed Methods	HTTP_ALLOWED_METHODS	
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_RES T_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	
Javadocs Login Page	WEB_JAVADOCS_FORM_LOGIN_PAGE	
Javadocs Form Login Error Page	WEB_JAVADOCS_FORM_LOGIN_ERROR_PAGE	
Web Security Role	WEB_ROLE_NAME	
Web Principal Name	WEB_PRINCIPAL_NAME	
Javadocs Security Role	WEB_JAVADOCS_ROLE_NAME	
Javadocs Principal Name	WEB_JAVADOCS_PRINCIPAL_NAME	
Use development Configuration	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	
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	
Allowed Frame Ancestors Max Number	CORS_ALLOWED_FRAME_ANCESTORS_MAX_NUMBER	
URI For Variable CSP_FRAME_ANS_HOST1	CORS_CSP_FRAME_ANS_HOST1	
URI For Variable CSP_FRAME_ANS_HOST2	CORS_CSP_FRAME_ANS_HOST2	
Custom URL For CSP img-src	CSP_URL_IMG_SRC	
Custom URL For CSP script-src	CSP_URL_SCRIPT_SRC	
Custom URL For CSP style-src	CSP_STYLE_SRC	
Custom URL For CSP font-src	CSP_FONT_SRC	
Custom URL For CSP connect-src	CSP_CONNECT_SRC	
Custom URL For CSP frame-src	CSP_URL_FRAME_SRC	
Custom URL For CSP form-action	CSP_FORM_ACTION_SRC	
URI For Variable FA_DOMAIN	CORS_FA_DOMAIN	
URI For Variable ALM_DOMAIN	CORS_ALM_DOMAIN	
Restriction URLs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Custom SQL Security	CUSTOM_SQL_SECURITY	
White List Full Path	CLOUD_WHITE_LIST_PATH	
Custom White List Full Path	CLOUD_CUSTOM_WHITE_LIST_PATH	
Substitution Variable List File Location	CLOUD_SUBSTITUTION_VARIABLE_LIST_FILE_LOCATION	
Directory For Variable F1_CMA_FILES	CLOUD_LOCATION_F1_MIGR_ASSISTANT_FILES	

Menu Option	Name Used in Documentation	Customer Install Value
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_IWS_URI	
Consolidated Logfile Full Path	CONSOLIDATED_LOG_FILE_PATH	
Temporary File Location	TMP_FILE_LOCATION	

Menu Block 57 - REST Settings for JMX

REST settings for JMX configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Enable/Disable REST Service For The JMX	JMX_REST_SERVICE_FLAG	
Hostname To Run The REST Server	JMX_REST_SERVICE_HOST	
Batch Port For REST Server	JMX_REST_PORT_BATCH	
Web Port For REST Server	JMX_REST_PORT_WEB	
Business Server Port For REST Server	JMX_REST_PORT_SERVICE	
Server Context	JMX_REST_CONTEXT	
SSL Flag	JMX_HTTPSSL_FLAG	
Keystore File Path	JMX_HTTPSSL_KEYSTORE_FILE	
Keystore Type	JMX_HTTPSSL_KEYSTORE_TYPE	
Keystore Passphrase	JMX_HTTPSSL_KEYSTORE_PASSPHRASE	
Keypair Passphrase	JMX_HTTPSSL_KEYPAIR_PASSPHRASE	

Menu Option	Name Used in Documentation	Customer Install Value
Trust Store File Path	JMX_HTTPSSL_TRUSTSTORE_FILE	
Truststore Type	JMX_HTTPSSL_TRUSTSTORE_TYPE	
Truststore Passphrase	JMX_HTTPSSL_TRUSTSTORE_PASSPHRASE	
Http Server Username For Authentication	JMX_HTTP_REST_USERNAME	
Http Server Password For Authentication	JMX_HTTP_REST_PASSWORD	

Menu Block 58 - WebService Authentication Configuration

Web service authentication configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
enable multispeak30 protocol	ENABLE_MULTISPEAK30	
enable multispeak41 protocol	ENABLE_MULTISPEAK41	
enable cim12 protocol	ENABLE_CIM12	
enable cim20 protocol	ENABLE_CIM20	

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:

- Oracle Linux 8.x/9.x and Red Hat Linux 8.x/9.x Application Server
- Windows 2012 Application Server
- Additional Prerequisite Software Information

Oracle Linux 8.x/9.x and Red Hat Linux 8.x/9.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/9.x (64-bit) Red Hat Enterprise Linux 8.x/9.x (64-bit)	x86_64	Oracle WebLogic 14.1.2.x (64-bit)

Web/Application Server Tier

Oracle Enterprise Linux 8.x/9.x or Red Hat Enterprise Linux 8.x/9.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 Database 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 V17 or Later (64-Bit)

At the time of release, obtain the Oracle Java packages from: https://www.oracle.com/java/technologies/downloads/

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

Oracle WebLogic Server 14.1.2.x (64-bit)

Oracle WebLogic software can be downloaded from the Oracle website. 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 14.1.2.x.

  Note: With Oracle Utilities Application Framework V25.4 a WebLogic native installation is required. Refer to the *Oracle WebLogic 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 14.1.2.x (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 Database 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 V17 or Later (64-Bit)

At the time of release, obtain the Oracle Java packages from: https://www.oracle.com/java/technologies/downloads/

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

Oracle WebLogic Server 14.1.2.x (64-bit)

Oracle WebLogic software can be downloaded from the Oracle website. 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 14.1.2.x.

  Note: With Oracle Utilities Application Framework V25.4 a WebLogic native installation is required. Refer to the *Oracle WebLogic 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

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).

The list of Additional files required for Oracle Utilities Application Framework 25.4:

```
<Web Application Server Home Directory>/server/lib/javaee-api-
8.0.1.jar
<Web Application Server Home Directory>/server/lib/
wlthint3client.jar
<Web Application Server Home Directory>/../oracle_common/modules/
com.fasterxml.woodstox.woodstox-core.jar
<Web Application Server Home Directory>/../oracle_common/modules/
gmbal-api-only-4.0.3.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jakarta.activation-1.2.2.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jakarta.jws-api-1.1.1.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jakarta.xml.bind-api-2.3.3.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jakarta.xml.soap-api-1.4.2.jar
```

```
<Web Application Server Home Directory>/../oracle_common/modules/
javax.mail-1.6.2.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jaxb-impl-2.3.5-b230912.1728.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jaxws-rt-2.3.5.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jersey-client-2.45.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jersey-common-2.45.jar
<Web Application Server Home Directory>/../oracle_common/modules/
jersey-media-multipart-2.45.jar
<Web Application Server Home Directory>/../oracle_common/modules/
oauth2-client-2.45.jar
<Web Application Server Home Directory>/../oracle_common/modules/
org.codehaus.woodstox.stax2-api.jar
<Web Application Server Home Directory>/../oracle_common/modules/
policy-2.7.10.jar
<Web Application Server Home Directory>/../oracle_common/modules/
saaj-impl-1.5.3.jar
<Web Application Server Home Directory>/../oracle_common/modules/
stax-ex-1.8.3.jar
<Web Application Server Home Directory>/../oracle_common/modules/
streambuffer-1.5.10.jar
<Web Application Server Home Directory>/../oracle_common/modules/
endorsed/jakarta.xml.ws-api-2.3.3.jar
```

Please note:

- Refer to this list rather than the additional information shown in the Installation Menu.
- This list may change due to post-release library updates through patches. For the latest updates, consult the relevant patch PFD.

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

Chapter 6

Installing the Application Server Component of Oracle Utilities Application Framework

Installing Oracle Utilities Application Framework ("the framework") is the prerequisite and foundation for installing a framework-based application such as Oracle Utilities Customer Care and Billing. This chapter describes the process to install Oracle Utilities Application Framework, including:

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

Installation Overview

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

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

Before you proceed with the installation process:

1. Complete the database installation/upgrade process. Refer to the *Oracle 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.

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

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

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

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

Pre-Installation Tasks

Hardware and Software Version Prerequisites

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

Database Installation

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

Installation Prerequisites

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

System Architecture Overview

Oracle Utilities Application Framework V25.4 is a decoupled system architecture involving a business service application tier and a web application tier. Typically both will run on the same server, but the design does allow each tier to be installed on separate servers.

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

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

Copying and Decompressing Install Media

To copy and decompress the Oracle Utilities Customer Care and Billing installation media:

1. Download Oracle Utilities Customer Care and Billing V25.4 from Oracle Software Delivery Cloud (eDelivery) and extract the following:
    - Oracle Utilities Application Framework V25.4 Application Installation Media
    - Oracle Utilities Application Framework V25.4 Single Fix Prerequisite Rollup for Oracle Utilities Customer Care and Billing V25.4 (if there is any)
    - Oracle Utilities Customer Care and Billing V25.4 for Multiplatform
    - Oracle Utilities Customer Care and Billing V25.4 Single Fix Prerequisite Rollup for Oracle Utilities Customer Care and Billing V25.4 (if there is any)
2. Copy the following Oracle Utilities Customer Care and Billing files to your local machine:
    - FW-V25.4-Multiplatform
    - CCB-V25.4-FW-PREREQ-MultiPlatform (if there is any)
    - CCB-V25.4-Multiplatform
    - CCB-V25.4-Rollup-MultiPlatform (if there is any)

The Oracle Utilities Application Framework V25.4 installation file is delivered as a zip file for both UNIX and Windows platforms.

If you are planning to install multiple Oracle Utilities Application Framework V25.4 environments operated by different Oracle Utilities administrator user IDs, you must complete 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 V25.4 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 downloaded application zip file to the <TEMPDIR>.

5. Decompress the file:

```
cd <TEMPDIR>
unzip -q <INSTALL MEDIA ZIP FILE NAME>
```

A sub-directory with name "FW-V25.4" is created. It contains the installation software for the Oracle Utilities Framework Application server.

Set Permissions for the cistab File in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the <TEMPDIR>/FW-V25.4 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities Application Framework application environment on the server) and registers a new environment.

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

Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Application Framework. It includes the following:

- Installation Process (Brief Description)
- Installation Process (Detailed Description)
- Upgrading Oracle Utilities Application Framework
- Detailed Description for 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-V25.4 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 Upgrade Install, please note the following:

   - The upgrade install does not clean files or libraries that were removed from the latest version, so the Initial Install is recommended.
   - To upgrade from a Oracle Utilities Application Framework version lower than 25.4 to a version greater or equal to 25.4, follow the instructions in the Upgrading Oracle Utilities Application Framework section.
   - Set the environment to be upgraded using splenviron.sh|.cmd -e <ENV NAME>. Then, run the following:

   UNIX:

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

   Windows:

   ```
   install.cmd -u
   ```

6. Follow the messages and instructions that are produced by the application installation utility. Use the completed worksheets in Planning the Installation to assist you.
7. 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 Installing Application Server Prerequisite Software. You will need to obtain specific information for the install.
3. Change directory to the <*TEMPDIR*>/FW-V25.4 directory and start the application installation utility by executing the appropriate script:

   Unix:

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

   Windows:

   ```
   install.cmd
   ```

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

   Use the completed Environment ID, Roles, Third Party Software Configuration worksheet in Installation Menu Functionality Overview 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.

6. Select menu item 50: Environment Installation Options.

   Use the completed Environment Installation Options Worksheet to complete this step. See Installation Menu Functionality Overview.

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

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

7. Configure the 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>

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

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

   Refer to Planning the Installation for settings and configuration.

Upgrading Oracle Utilities Application Framework

To upgrade a Oracle Utilities Application Framework version which is lower than 25.4 to version 25.4 or higher, follow these instructions:

> **Note that** these instructions refer to Unix platforms. For Windows, use the ".cmd" extension instead of ".sh" and provide the syntax for respective environmental variables and directories.

1. Install the prerequisite software on the server.
   - Java 17
   - Oracle FMW Infrastructure 14
   - Oracle Database Client 19c

2. Shut down the environment that you need to upgrade.
3. Take a full backup of the environment.
4. Run the following command:

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

5. Run the following command:

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

6. Run the "configureEnv.sh -i" command and set **Oracle Client Home**, **Web Java Home**, and **Web Application Server Home**.
7. Run the "splenviron.sh -e <ENV_NAME>" command.
8. Run the "configureEnv.sh" and update Domain Home Location (menu block_52), ports, and server, if needed.
9. Run the "configureEnv.sh -ic" command.
10. Run the "configureEnv.sh -c" command.
11. Run the "initialSetup.sh" command.
12. Review and incorporate the content of the most recent $SPLEBASE/tools/examples/bin/setUserOverride.sh in your WebLogic 14 domain.
13. Redeploy and restart the environment and batch.

Detailed Description for Configuring the OUAF Keystore

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

OUAF Keystore

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

To help manage the keystore and ensure that the keystore matches the database-encypted data, there is a system check at startup of the application that display warning messages when the system detects that the keystore in use does not match the encrypted data in the database. Thus after any keystore operation, fresh installation of the application, or reconfiguration to point to a different database, the keystore will need to be synchronized with the database. Synchronization of the keystore happens any time ChangeCryptographyKey or ResetCryptography key programs are run.

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

> **Note**: The database utility ORADBI does not require the keystore files. Refer to the database documentation for more details.

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

Determining Keystore in Use

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

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

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

Configuring the Keystore Options

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

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

Importing an Existing Keystore

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

Follow these steps:

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

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

6. Run $SPLEBASE/bin/nvokeDBUpdatePatch.sh|cmd and follow the prompts.

   You can use the –h option to obtain help.

Upgrading from the Legacy Keystore

This process:

- Synchronizes the keystore to the database
- Regenerates the user hashes
- Re-encrypts any passwords (from the legacy-encrypted passwords) using the current keystore.

- Is used only when upgrading from a framework prior to V4.2.0.2.0.

Follow these steps:

1. Run the following command:

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

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

Forcing the Environment to Use the Current Keystore

This process will:

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

Follow these steps:

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

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

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

Synchronizing the Keystore

This process will:

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

Follow these steps:

1. Run the following:

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

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

Creating a New Keystore

This process will:

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

Follow these steps:

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

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

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

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

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* included in this release) 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-V25.4-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 25.4:

1. Copy the file CCB-V254-FW-PREREQ-MultiPlatform.jar in the delivered package to a <TEMPDIR>. Unjar using the command below.

   ```
   jar -xvf CCB-V254-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-V25.4-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-V25.4-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-V25.4-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.V25.4 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.V25.4 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-V25.4-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 25.4:

1. Copy the CCB-V254-Rollup-MultiPlatform.jar file from the delivered package to a <TEMPDIR>. Unjar it using the command below.

   ```
   jar -xvf CCB-V254-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-V25.4-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* included in this release 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 tasks that should be completed after installing Oracle Utilities Customer Care and Billing, including:

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Centralized Properties Customization
- Integrating Existing Customer Modifications
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Domain Templates
- Database Patching

Importing Self-Signed Certificates

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

Make sure to perform these steps before deploying the IWS application.

To import the self-signed certificates into the OUAF truststore:

1. Start WebLogic.
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. Generate all information.

   UNIX

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

   Windows

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

If [<server>:<port>] values are not specified, they will be retrieved from ENVIRON.INI.

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 the properties file of the SPLWeb web application:

1. Locate the spl.properties.template in the $SPLEBASE/templates directory.
2. Copy the file to cm.spl.properties.template.
3. Apply the changes to cm.spl.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 Instructions

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

<PROPERTIES_FILE>:<PROPERTY_NAME>=<VALUE>

- Override <PROPERTY_NAME> in <PROPERTIES_FILE> with <VALUE>, if exists.
- Insert <PROPERTY_NAME> in <PROPERTIES_FILE> with <VALUE>, if does not exist.

<PROPERTY_NAME>=<VALUE>

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

<PROPERTIES_FILE>:<PROPERTY_NAME>=[DELETE]

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

<PROPERTY_NAME>=[DELETE]

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

Property Overriding Example

Template **spl.properties.template** property:

```
com.splwg.schema.newValidations.F1=false
```

cm_properties.ini content:

```
spl.properties.template:com.splwg.schema.newValidations.F1=true
```

spl.properties (generated properties file result):

```
### The following line was overridden because <PROD>_properties.ini
file setting: com.splwg.schema.newValidations.F1 = true
```

Integrating Existing Customer Modifications

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

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

Building Javadocs Indexes

This is required after customer modifications (CM) have been applied to an environment when it includes Java code.

To rebuild the Javadoc indexes:

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 about 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.

Domain Templates

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

Update Domain Home Location

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

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

==========

4. 02. Configuration Option: Domain Home Location

   Current Value <ENTER>:

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

   Enter Value: <Enter your domain home location>
5. Once the Domain Home location has been completed, enter <P>.

Database Patching

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

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

To generate the jar file:

1. Initialize a command shell:

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

   UNIX

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

   In the following example, replace the variables:

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

To initialize the environment enter:

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

For example:

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

Windows

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

In the below example you should replace the following variables:

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

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

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

For example:

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

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

   UNIX

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

   Windows

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

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

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

   ```
   jar xvf db_patch_standalone.jar
   ```

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

Overview of Database Patching Application

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

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

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

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

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

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

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

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

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

Unix Example

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

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

Unix Sample - Database Patch Application (ouafDatabasePatch.sh)

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

- Sample Execution: Passing a password

  ```
  ./ouafDatabasePatch.sh -x ouafadm -p "-t O -d
  CISADM_Z1_12C_43030_BLD001,slc04lds:1522:Z143Q12C"
  ```

- Sample Execution: Prompting for a password

  ```
  ./ouafDatabasePatch.sh  -p "-t O -d
  CISADM_Z1_12C_43030_BLD001,slc04lds:1522:Z143Q12C"
  ```

- Sample Execution: Passing in the tools bin location

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

WINDOWS Example

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

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

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

- Sample Execution: Passing a password

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

- Sample Execution: Prompting for a password

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

- Sample Execution: Passing the tools bin location

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

Windows Sample Usage:

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

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, V2.8.0.0.0, V2.9.0.0.0, or V2.9.0.1.1 to V25.4.

  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 V25.4 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>/FWV25.4 directory.

   NOTE: While installing Application Framework V25.4 from the previous environment to Oracle Utilities Customer Care and Billing V25.4 the install utility removes the existing environment and re-creates the environment. Take a backup before you proceed with installing

Application Framework V25.4 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 V25.4 a WebLogic native installation is required. Refer to the *Oracle WebLogic 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 Oracle Utilities Customer Care and Billing fixes are included in this release:

Bug Number	Description
36908541	Account SA History portal payment archived error encountered
37152645	Copy - C1-PECRL not syncing ineligible Pay IDs with the Non-eligible Pay Event creating partition gaps
37156409	Copy - To Do Alert creates on the wrong account when a customer is linked to multiple accounts
37183647	CXPERSONS REST API CREATING DUPLICATE RECORD FOR PRIMARY FLAG CHANGE
37198952	Copy - C1-COMMHIST IS CAUSING SIGNIFICANT PERFORMANCE ISSUE
37200607	Copy - IWS C1-Bill searchBill Operation is using multiple Date formats for field output field BillDate
37203136	Copy - Incorrect Order of Account Financial History Current Balance
37209760	Copy - 24A MP6.5.1 start/stop error requiring email person contact on paperless account * email exists
37215216	Copy - Program ¿CIPRQMAX¿ not handling the computation overflow error and gives system error.
37224396	Copy - Changing Premise's Time Zone causes (3, 65009) error when SAs linked to the Premise have their End Dates populated (Pending Stop, Stopped or Closed)
37227448	Copy - Payment Arrangement Request going into Error
37233885	Copy - PAYMENT PAGE 'SHOW MESSAGE' BUTTON FOR ERROR MESSAGE DOESN'T WORK
37242242	Copy - Case characteristic search for service point does not check for cis division restriction
37252259	Copy - ERROR WHEN GENERATING A BO SCHEMA OR UPDATING EXISTING BO BASED ON SP MO

Bug Number	Description
37255580	Copy - Batch C1-TAPCT - ORA-01840-input value not long enough for date format coming from the Select SQL of Algorithm: C1-TPCT-SR.
37255883	Copy - When adding any type of characteristic to case, the page occasionally does not produce any text field
37256924	Copy - Decimal values in Blank days before bill due on self service task causing error at bill completion
37268246	Copy - BILL MO Information algorithm C1BILLMOINFO does not produce "fullyMatched" and other messages despite retrieving related information
37281007	Copy - C1-BILL IWS operation getBill is not returning some fields
37285244	Copy - Poor Performance of Usage and Billing & Financial History zones on Customer 360.
37285779	Copy - Characteristic Values Not Loading
37287964	Copy - Unable to complete bill after reopening if it is linked to a statement
37293296	Copy - Issue introduced by Bug 36362474; to be able to change the Main Customer on account, user has to manually update multiple customer contacts
37297243	Copy - Patch 36891153 partially working wrapper class for algorithm spot 'DCSC' is still not exposed for use on custom script
37314249	Copy - Maintenance Object ineligible for data export using GDE
37337973	Copy - JOB ANLYZSAR PERFORMANCE ISSUES
37344077	Copy - Customer Contact Search by Account orders results by Person ID; in some cases showing on top old Customer Contacts
37349276	Copy - LEVEL PAY ENROLLMENT / NBB MONTHLY PAYMENT DISCREPANCY
37349608	Copy - Patch 37033926 does not cover scenario with an ineligible Payment Event linked to more than 100 Pay IDs
37364452	Copy - SQLs appearing millions of executions in the PerfHub - should these be cached?
37370373	Copy - Account Balance not aligned for Accounts with large number of FT
37378671	Copy - SA Financial History All Dates Zone has incorrect calculation of current and payoff balance
37382166	Copy - Customer still Unable to Start/Stop due to Email Person Contact Message after Patch 37144556
37389202	Copy - C1-BLCMP does not trigger the SA Type Pre-Bill Completion algorithm

Bug Number	Description
37390072	Copy - EXPIRE SA UPDATING ALL 'SEVERANCE ACTIVITY' FIELD ACTIVITY TYPE TO 'STOP ACTIVITY
37391412	Copy - CASE PORTAL MAIN ZONE NOT DISPLAYING ANY DETAILS WHEN A WARNING MESSAGE IS THROWN.
37397098	Copy - Device Test (C1DVTEST) FK Reference not working - Unable to retrieve Portal Zone Metadata
37412637	Copy - CCS is not updating the correct bill cycle on the account on stopping the SA
37425725	Copy - After applying 24B MP5.3.1, rate engine skips eligibility criteria configured on calc rules, except for the last eligibility criterion configured
37453272	Copy - When the SA start option is changed, additional characteristics on SA is getting deleted
37456335	Copy - Field Activity Portal links are not navigating to the correct Page
37458458	Copy - CCB SERVICE POINT SYNC CREATING DUPLICATE SYNC/SP RECORDS IN MDM
37463808	Copy - Post Patch 37252668 - Continuing Issues with Financial History
37480090	Copy - Base algorithm C1-DSOV-SAID is not invoked when creating a prepay payment event
37481748	Copy - PERSON CONTACT - START STOP ISSUES AFTER 35594446
37481980	Update script version for C1-ValUoToSq script to version 3.0
37490665	Copy - IWS C1-CustomerContact operation "createCustomerContact" return incorrect error message
37510501	Copy - When payment is Distributed amount is distributed incorrectly even with deployment of patch 36472099
37526904	Copy - System is not able to balance Auto Pay open Tender Control by C1-BLAPC batch
37529206	Copy - CCB Unified Search "Search by Contact Details" is slow and returns results in 30 seconds
37529800	Copy - SA Financial History All Dates has incorrect calculation of current and payoff balance post 37279917 fix
37544850	Copy - With multiple Bill Segment Headers, next Header's Simple Summary calc line value includes Simple Summary values from previously calculated Headers

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.