

Oracle Utilities Customer Care and Billing

Installation Guide

Release 2.5.0

E61797-01

May 2015

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Preface

This guide describes how to install Oracle Utilities Customer Care and Billing.

Audience

Oracle Utilities Customer Care and Billing Installation Guide is intended for system administrators installing Oracle Utilities Customer Care and Billing.

To use this document you should have:

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

Related Documents

For more information, refer to these Oracle documents:

Installation Guides and Release Notes

- *Oracle Utilities Customer Care and Billing V2.5.0 Release Notes*
- *Oracle Utilities Customer Care and Billing V2.5.0 Quick Install Guide*
- *Oracle Utilities Customer Care and Billing V2.5.0 Installation Guide*
- *Oracle Utilities Customer Care and Billing V2.5.0 Database Administrator's Guide*
- *Oracle Utilities Customer Care and Billing V2.5.0 Optional Product Installation Guide*
- *Oracle Utilities Application Framework V4.3.0.0 Release Notes*

Administration and Business Process Guides

- *Oracle Utilities Customer Care and Billing V2.5.0 Administration Guide*
- *Oracle Utilities Customer Care and Billing V2.5.0 Business Process Guide*
- *Oracle Utilities Application Framework V4.3.0.0 Administration Guide*
- *Oracle Utilities Application Framework V4.3.0.0 Business Process Guide*

Supplemental Documents

- *Oracle Utilities Customer Care and Billing V2.5.0 Server Administration Guide*
- *Oracle Utilities Customer Care and Billing V2.5.0 Security Guide*

Updates to this Documentation

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

Conventions

The following text conventions are used in this document:

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

Chapter 1

Overview

This chapter provides an overview of the installation of Oracle Utilities Customer Care and Billing, including:

Installation Overview

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

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

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

Chapter 2

Application Architecture Overview

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

Application Architecture

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

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

Tier 1: Desktop/Client, or Presentation Tier

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

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

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

Tier 3: Database, or Persistence Tier

This tier is implemented in a database server. The database server stores data maintained by the Oracle Utilities Customer Care and Billing application. More specifically, the database tier contains the data server files and database executables that physically store the tables, indexes, and other database objects for your system.

Chapter 3

Supported Platforms and Hardware Requirements

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

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

Software and Hardware Considerations

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

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

- On which hardware platform and operating system will Oracle 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 the Oracle Utilities Customer Care and Billing?

Web/application/database on the same physical server

Web/application on one server and database on separate server

Each component on its own server

For detailed descriptions of various deployment architecture choices that may aid in planning, please see the document *Oracle Utilities Application Framework Architecture Guidelines*, available on My Oracle Support (Article ID 807068.1).

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

Requirements by Tier

The application is deployed on multiple Tiers:

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

Tier 1, Desktop: Software and Hardware Requirements

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

* The Recommended configuration improves client performance.

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

Web Browser Requirements

The following operating system / web browser software is supported:

- Windows 7, 8.1 (32-bit or 64-bit) with Internet Explorer 11, Firefox 31.x.x ESR

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

Please consult the [Supported Platforms](#) to determine which web application servers can be used with the operating system that will be hosting this tier.

The recommendations that follow are based on a standard installation with both the web application and business application servers on the same machine and the system running with the default values. The default values may not support a production environment. You should adjust these values according to your production needs. Refer to the Server Administration Guide on how to change the default values. The minimum resource requirements exclude third-party software installation requirements. Refer to the third-party vendors for specific requirements. The following sizing excludes the Oracle database server installation.

Memory Requirements

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

Disk Space Requirements

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

| Location | Size | Usage |
|---|----------------|---|
| \$SPLBASE | 5 GB minimum | This location is where the application and Framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files. |
| \$SPLAPP | 2 GB minimum | This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected. |
| Location of the application web work files on the web servers | 1.5 GB minimum | This location is used by the various web server vendors to expand the application. It should be considered when installing these products. Refer to the individual web server documentation to determine the location of the temporary files. |
| Installation temporary area | 4 GB | The application gets installed from this location. You need enough space to uncompress the files and install the application. |
| Oracle data area | 4 GB minimum | This location is where the Oracle database data files are stored. The size of this space should be based on the requirements of the production environment. For an initial or demo database install 4 GB should be sufficient. |

Tier 3, Database Server: Software and Hardware Requirements

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

Supported Platforms

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

- [Operating Systems and Application Servers](#)
- [Oracle Database Servers](#)
- [Oracle WebLogic Server Information](#)

Operating Systems and Application Servers

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

| Operating System and Web Browser (Client) | Operating System (Server) | Chipset | Application Server | Database |
|--|--|-----------------|---|------------------|
| Windows 7, 8.1 (Internet Explorer 11, Firefox 31.x.x ESR) | AIX 7.1 TL1 | POWER 64-bit | WebLogic 12.1.3.0+* WebSphere (Basic)/ WebSphere (ND) 8.5.5 | Oracle 12.1.0.1+ |
| | Oracle Linux 6.5/7.0 (64-bit) or Red Hat Enterprise Linux** 6.5/7.0 (64-bit) | x86_64 | WebLogic 12.1.3.0+* | Oracle 12.1.0.1+ |
| | Oracle Solaris 11 (64-bit) | SPARC | WebLogic 12.1.3.0+* | Oracle 12.1.0.1+ |
| | Windows Server 2012 (64-bit) | x86_64 | WebLogic 12.1.3.0+* | Oracle 12.1.0.1+ |
| | HP-UX 11.31 (64-bit) | ia64 | WebLogic 12.1.3.0+* | Oracle 12.1.0.1+ |

* A plus sign (+) after the fourth digit in the version number indicates that this and all higher versions of WebLogic are supported. For example, 12.1.3.0+ means that 12.1.3.0 and any higher 12.1.3.x.x versions are supported.

** Oracle Utilities Customer Care and Billing is tested and supported on the versions of Oracle Linux specified. Because Oracle Linux is 100% userspace-compatible with Red Hat Enterprise Linux, Oracle Utilities Customer Care and Billing also is supported on Red Hat Enterprise Linux for this release.

- The platforms listed above are current at the time of release. For the most current supported platforms, please refer to Oracle Utilities Product Matrix on My Oracle Support (MOS) Knowledge Article (Doc ID 1454143.1).

Oracle Database Servers

Oracle Utilities Customer Care and Billing version 2.5.0 is supported with Oracle Database Server 12.1.0.1+ on all of the operating systems listed above.

The following Oracle Database Server Editions are supported:

- Oracle Database Enterprise Edition
- Oracle Database Standard Edition

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

The Oracle 12.1.0.1 client is required for this version of the database server.

Oracle WebLogic Server Information

The following Oracle WebLogic Server Editions are supported:

- Oracle WebLogic Server Standard Edition 12.1.3.0+
- Oracle WebLogic Server Enterprise Edition 12.1.3.0+ (required if using application clustering)

Support for Software Patches and Upgrades

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

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

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

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

Chapter 4

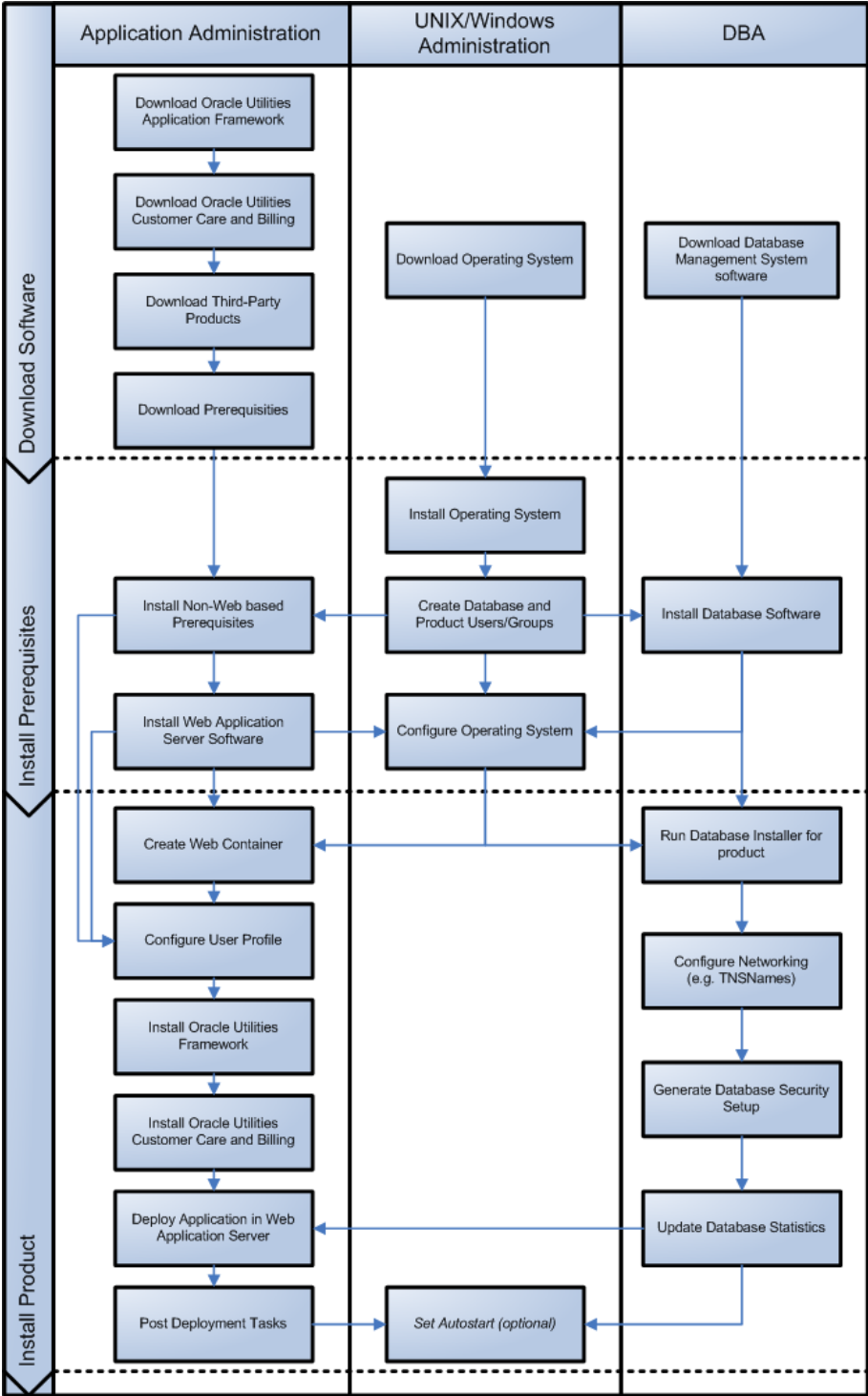
Planning the Installation

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

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

Installation and Configuration Overview

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



Before You Install

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

Application Server Clustering

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

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

Native Mode in WebLogic

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

Installation Checklist

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

1. Install the database as described in the *Oracle Utilities Customer Care and Billing Database Administrator's Guide*.
2. Create Group/User ID.
3. Install prerequisite software (for complete details about installing and configuring the prerequisite third-party software for your specific platform, see [Chapter 5: Installing Application Server Prerequisite Software](#)):
 - Oracle client 12.1.0.1.0
 - Java 7 Update 45 or Java 8 Update 40
 - Hibernate 4.1.0
4. Install web server.
 - Oracle WebLogic 12.1.3.0+
 - IBM WebSphere Basic 8.5.5 / IBM WebSphere Network Deployment 8.5.5

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

Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in the [Chapter 7: Installing the Application Server Component of Oracle Utilities Application Framework](#).

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

Installation Menu Functionality Overview

The main configuration menu is structured so that related variables and/or options are grouped together and are associated by a menu item number. To access a particular group of variables and options, enter the menu item number associated with that group. Each option within that group is displayed in turn on the screen, along with a prompt so that you can type the desired value for the option, if it is not the same as the default or current value.

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

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

Note: When working with the menu you will see the following:

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

When all options are set, type <P> at the main menu prompt option. This will save the option values selected throughout the configuration.

During this processing the global variables are validated and the configuration file <SPLEBASE>/etc/ENVIRON.INI is created or updated. This file contains all the variables inputted and calculated. These are needed by the next part of the installation process.

To exit the configuration utility without saving any of the values entered, type <X> and 'Enter'

Installation Menu Functionality Details

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

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

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

When the installation has been completed successfully, the values will be written to an ENVIRON.INI file. When splenviron.sh / cmd is executed, it will read from the ENVIRON.INI file to set the environment variables.

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

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

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

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

Install the Oracle Client software specified in the section **Supported Platforms** prior to running any of the installation utilities.

The following prompt will appear when executing the installation utility:

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

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

Encryption Methods

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

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

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

Third Party Software Configuration

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

Table 1:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|------------------------------|----------------------------|---|------------------------|
| Oracle Client Home Directory | ORACLE_CLIENT_HOME | The home directory of the Oracle Client. The application will use the Perl included under this Oracle Client. Example Location: /oracle/client/product/12.1.0.1.0 | |

Table 1:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|---------------------------------------|----------------------------|---|------------------------|
| Web Java Home Directory | JAVA_HOME | Java home that will be used by the web application server. Example Location: /ouaf/java/jdk1.7.0_45 | |
| Hibernate JAR Directory | HIBERNATE_JAR_DIR | Location on the disk where the hibernate410.jar is installed. | |
| *ONS JAR Directory | ONS_JAR_DIR | Location on the disk where the ons-12.1.0.1.jar file is installed. **Required for Oracle RAC installation. See the Server Administration Guide for more information. | |
| Web Application Server Home Directory | WEB_SERVER_HOME | Location on the disk where the application server is installed. Example Location: WebLogic: /ouaf/middleware/wlserver_12.1.3 To validate the home directory, check if the following jar files exist in the appropriate path: \$WEB_SERVER_HOME/server/lib/weblogic.jar %WEB_SERVER_HOME%\server\lib\weblogic.jar WebSphere: /ouaf/IBM/WebSphere/AppServer WebSphere ND: /ouaf/IBM/WebSphereND/ | |
| * ADF Home Directory | ADF_HOME | Location on the disk where ADF is installed. Example Location: /ouaf/jdev11_1_1_8 Note: This is an optional value. | |
| OIM OAM Enabled Environment | OPEN_SPML_ENABLED_ENV | Denotes if an environment will be integrating with Oracle Identity Manager for user propagation. Valid values: true false Defaulted value: false | |

* Denotes optional Menu Options that may be required for the product installation and variables.

** In order to activate the RAC FCF, the application needs the external ons.jar file, version 12.1.0.1. This ons.jar is located under the Oracle Database Software 12.1.0.1, at the following path:

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

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

Keystore Options

Note: Please review the Security Guide for more information on setting up keystores.

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
  
```

Table 2:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|---------------------------|----------------------------|---|------------------------|
| Import Keystore Directory | KS_IMPORT_KEYSTORE_FOLDER | <p>Specify this option if you want to import the keystore files from an external location or directory, during the installation process. This is needed when the customer has an existing environment that has a keystore and the database your new application server.</p> <p>After installation is complete, to configure keystore options, perform the following sequence: configureEnv.sh cmd -i (enter keystore options) initialSetup.sh cmd -s (loads keystore) configureEnv.sh cmd (reenter ouaf encrypted security information such as passwords) initialSetup.sh cmd (distribute the encrypted data)</p> <p>If this option is left empty, the install process creates a new keystore from scratch.</p> | |
| Store Type | KS_STORETYPE | <p>Value used for keytool option -storetype</p> <p>Default Value: JCEKS</p> | |
| Alias | KS_ALIAS | <p>Value used for keytool option -alias</p> <p>Default Value: ouaf.system</p> | |
| Alias Key Algorithm | KS_ALIAS_KEYALG | Value used for keytool option -keyalg | |
| Alias Key Size | KS_ALIAS_KEYSIZE | Value used for keytool option -keysize | |
| HMAC Alias | KS_HMAC_ALIAS | <p>Value used for keytool option -alias</p> <p>The following values are fixed:</p> <ul style="list-style-type: none"> - HMAC Alias Key Algorithm: HmacSHA256 - HMAC Alias Key Size: 256 <p>Default Value: ouaf.system.hmac</p> | |

Table 2:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--------------------|-----------------------------------|---|-------------------------------|
| Padding | KS_PADDING | Value used for encryption/decryption Default Value: PKCS5Padding | |
| Mode | KS_MODE | Value used for encryption/decryption Default Vaule: CBC | |

Environment Installation Options

50. Environment Installation Options

Environment Mount Point:
 Log Files Mount Point:
 Environment Name:
 Web Application Server Type: WLS
 Install Application Viewer Module: true
 Install Demo Generation Cert Script: true
 Install Sample CM Source Code: true

Table 3:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|-------------------------|----------------------------|--|------------------------|
| Environment Mount Point | <SPLDIR> | <p>The mount point into which the application is installed. For example: /ouaf for UNIX and C:\ouaf for Windows.</p> <p>This mount point MUST exist and the administrator user ID MUST be able to write to this directory. (This is the user ID that is created specifically to administer the product environments; the default is cissys). The installation sets permissions on all subdirectories installed under this directory.</p> <p>See <SPLENVIRON> below for more information on how this mount point is used.</p> | |

Table 3:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|----------------------|----------------------------|---|------------------------|
| Log File Mount Point | <SPLDIROUT> | <p>A mount point that will contain any application output or application logs. Example value is /ouaf/sploutput for UNIX installation or C:\ouaf\sploutput for Windows.</p> <p>This mount point MUST exist and the administrator user ID MUST be able to write to this directory. (This is the user ID that is created specifically to administer the product environments; the default is cissys).</p> <p>For each environment initialized, the application logs will be written to the directory <SPLDIROUT>/<SPLENVIRON></p> <p>Note: Later in the installation the splenviron.sh (splenviron.cmd) script will set the \$SPLOUTPUT (%SPLOUTPUT%) environment variable to point to:<SPLDIROUT>/<SPLENVIRON></p> | |

Table 3:

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

Table 3:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--|----------------------------|--|------------------------|
| Installation Application Viewer Module | <WEB_ISAPPVIEWER> | <p>Denotes if the Application Viewer Web Module will be installed in the environment. When this value is set to false the application viewer will not be accessible in the environment.</p> <p>Valid values: true: Application Viewer module will be installed. false: Application Viewer module will not be installed.</p> <p>Defaulted value: true</p> <p>Note: When the value of false is selected, the Application Viewer will only be installed at a later date by a complete reinstall of the application.</p> | |
| Install Demo Generation Cert Script | CERT_INSTALL_SCRIPT | <p>You can install/uninstall later by executing the following script: perl [INSTALL_PACKAGE_FOLDER]/installAR.plx</p> <p>Valid values: true: Demo Generation Cert Script will be installed. false: Demo Generation Cert Script will not be installed.</p> <p>Default value: true</p> | |
| Install Sample CM Source Code | CM_INSTALL_SAMPLE | <p>You can install/uninstall later by executing the following script: perl [INSTALL_PACKAGE_FOLDER]/installAR.plx</p> <p>Valid values: true: Sample CM Source Code will be installed. false: Sample CM Source Code will not be installed.</p> <p>Default value: true</p> | |

Environment Description

1. Environment Description
Environment Description:

Table 4:

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

WebLogic Business Application Server Configuration

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

2. Business Application Server Configuration

```

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

```

Table 5:

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

WebSphere ND Business Application Server Configuration

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

2. Business Application Server Configuration

| | |
|-----------------------------------|----------------|
| Business Server Host: | <machine_name> |
| Bootstrap Port: | |
| WebSphere Server Name: | |
| WebSphere Node Name: | |
| Business Server Application Name: | SPLService |
| MPL Admin Port Number: | |
| MPL Automatic startup: | |

WebSphere Basic Business Application Server Configuration

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

2. Business Application Server Configuration

```

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

```

Table 6:

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

WebLogic Web Application Server Configuration

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

3. Web Application Server Configuration

```

Web Server Host: <machine_name>
Weblogic SSL Port Number:
Weblogic Console Port Number:
WebLogic Additional Stop Arguments:
Web Context Root:
WebLogic JNDI User ID:
WebLogic JNDI Password:
WebLogic Admin System User ID:
WebLogic Admin System Password:
WebLogic Server Name: myserver
Web Server Application Name: SPLWeb
Application Admin User ID:
Application Admin Password:
Deploy using Archive Files: true
Deploy Application Viewer Module: true
  
```

Table 7:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|------------------------------------|----------------------------|--|------------------------|
| Web Server Host | WEB_WLHOST | The host name on which the web application server resides. Default value: <current server name> | |
| Weblogic SSL Port Number | WEB_WLSSLPORT | The port number assigned to WebLogic Secure Sockets connection. This is the port number that is used for Secure Sockets connecting to the WebLogic server. For Production, additional actions are required. Do NOT run Production with Demo certificates Example value: 6501 | |
| Weblogic Console Port Number | WLS_ADMIN_PORT | The port number to access the WebLogic Console using https You will use this port when accessing the WebLogic Console Example value: 6500 | |
| Weblogic Additional Stop Arguments | ADDITIONAL_STOP_WEBLOGIC | This value will be needed when running the WebLogic Console using a different port number (e.g.) - Dweblogic.security.TrustKeyStore=DemoTrust - Dweblogic.security.TrustKeystoreType=CustomTrust | |

Table 7:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--------------------------------|----------------------------|---|------------------------|
| Web Context Root | WEB_CONTEXT_ROOT | <p>A context root name that allows customers to run multiple instances of web application on the same server.</p> <p>Default value: ouaf</p> | |
| WebLogic JNDI User ID | WEB_WLSYSUSER | <p>The user ID the application uses to connect to the EJB component through JNDI. This is the EJB container user ID.</p> <p>Note: The required value for an initial installation is “system”.</p> <p>This is a security value.</p> | |
| WebLogic JNDI Password | WEB_WLSYSPASS | <p>The password the application uses to connect to the EJB component through JNDI.</p> <p>Note: The required value for an initial installation is “ouafadmin”. This value will be saved in encrypted format.</p> <p>This is a security value; it will be encrypted with the Oracle Application Framework Encryption Algorithm.</p> | |
| WebLogic Admin System User ID | WLS_WEB_WLSYSUSER | <p>The user ID to log in to the Oracle WebLogic console and to administer Oracle WebLogic. The Oracle WebLogic startup and stop script also utilizes this user ID</p> <p>Note: The installation utility will prompt you to enter “Y” to encrypt. For an initial installation, enter Y/y and specify the required value “system”.</p> <p>This is a security value; it will be encrypted with the Weblogic Encryption Algorithm.</p> | |
| WebLogic Admin System Password | WLS_WEB_WLSYSPASS | <p>The password to login to Oracle WebLogic console and to administer Oracle WebLogic. The Oracle WebLogic startup and stop script also utilize this password.</p> <p>Note: The installation utility will prompt you to enter “Y” to encrypt. For an initial installation, enter Y/y, and specify the required value “ouafadmin”.</p> <p>This is a security value; it will be encrypted with the Weblogic Encryption Algorithm.</p> | |

Table 7:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|-----------------------------------|----------------------------|--|------------------------|
| WebLogic Server Name | WEB_WLS_SVRNAME | <p>The name of the WebLogic server where the web application resides.</p> <p>Default value: myserver</p> <p>Note: For an initial installation, use the default value of “myserver”.</p> | |
| Web Server Application Name | WEB_APP | <p>The name of the web application server.</p> <p>Default value: SPLWeb</p> <p>Note: For an initial installation, use the default value of “SPLWeb”.</p> | |
| Application Admin User ID | WEB_SPLUSER | <p>This is the default user ID to login to the application through the browser.</p> <p>Example value: SYSUSER</p> <p>Note: The required value for an initial installation is “SYSUSER”. This value is also used in communication within the XAI application.</p> <p>This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm.</p> | |
| Application Admin Userid Password | WEB_SPLPASS | <p>This is the password of the application admin user.</p> <p>Example value: sysuser00</p> <p>Note: The required value for an initial installation is “sysuser00”. This value will be saved in encrypted format</p> <p>This is a Security Value.</p> | |

Table 7:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|----------------------------------|----------------------------|--|------------------------|
| Deploy Using Archive Files | WEB_DEPLOY_EAR | <p>When the value is “false” the web application will be deployed in exploded directory format (no WAR/EAR files).</p> <p>When the value is “true”, the web application will be deployed in ear file format.</p> <p>Note: The expanded application folders will always exist under the application folder (<SPLEBASE>/splapp/applications), regardless of the setting of this option.</p> <p>Valid values: true (Deploy EAR files) false (Deploy expanded application folders)</p> <p>Default value: true</p> | |
| Deploy Application Viewer Module | WEB_DEPLOY_APPVIEWER | <p>When the value is “true” the application viewer will be deployed to the web server. When the value is “false”, the application viewer will not be deployed to the web Server.</p> <p>Note: With either value the application viewer module will still be managed by the upgrade process.</p> <p>Note: When the ‘Install Application Viewer module’ value is set to false from the installation menu, you will not be able to change this value to true to deploy the application viewer.</p> <p>Valid values: true: The application viewer module will be deployed to the web server false: The application viewer module will not be deployed to the web server</p> <p>Default value: true</p> | |

Database Configuration

Note: If any of the database menu option items below are changed, the system displays the following warning next to the actual option that has been changed:

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

- load the compatible keystore into the environment;
- keep the current keystore, re-enter any encrypted information online through the application, and re-generate the database hashes. Refer to the security guide for more information.

4. Database Configuration

Application Database User ID:

Application Database Password:

MPL Database User ID:

MPL Database Password:

XAI Database User ID:

XAI Database Password:

Batch Database User ID:

Batch Database Password:

Database Name

Database Server:

Database Port:

ONS Server Configuration:

Database Override Connection String:

Oracle Client Character Set NLS_LANG: AMERICAN_AMERICA.AL32UTF8

Table 8:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|-------------------------------|----------------------------|---|------------------------|
| Application Database User ID | DBUSER | The database user ID that has been configured on the database for the application server connection. This is a security value. | |
| Application Database Password | DBPASS | The database password that has been configured on the database for the application connection. Note: This value will be saved in encrypted format. This is a security value; it will be encrypted with the Oracle Utilities Framework Encryption Algorithm. | |
| MPL Database User ID | MPL_DBUSER | The database user ID that has been configured on the database for the MPL server connection. This is a security value. | |

Table 8:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|-------------------------|-----------------------------------|---|-------------------------------|
| MPL Database Password | MPL_DBPASS | <p>The database password that has been configured on the database for the MPL server connection.</p> <p>Note: This value will be saved in encrypted format.</p> <p>This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm.</p> | |
| XAI Database User ID | XAI_DBUSER | <p>The database user ID that has been configured on the database for the XAI server connection.</p> <p>This is a security value.</p> | |
| XAI Database Password | XAI_DBPASS | <p>The database password that has been configured on the database for the XAI server connection.</p> <p>Note: This value will be saved in encrypted format.</p> <p>This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm.</p> | |
| Batch Database User ID | BATCH_DBUSER | <p>The database user ID that has been configured on the database for the batch connection.</p> <p>This is a security value.</p> | |
| Batch Database Password | BATCH_DBPASS | <p>The database password that has been configured on the database for the batch connection.</p> <p>Note: This value will be saved in encrypted format.</p> <p>This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm.</p> | |
| Database Name | DBNAME | The name of the database instance that the application will be connecting to. | |
| Database Server | DBSERVER | Host name of the server where database resides. | |
| Database Port | DBPORT | Database port number on the database server used for connecting to the database | |

Table 8:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--------------------------------------|-----------------------------------|---|-------------------------------|
| ONS Server Configuration | ONSCONFIG | <p>ONS Server Configuration is required for Oracle RAC FCF.</p> <p>See the Server Administration Guide for more information.</p> <p>This is an optional value.</p> | |
| Database Override Connection String | DB_OVERRIDE_CONNECTION | <p>This connection string can be used to override the database information entered above for RAC installation.</p> <p>Set this string to override the standard database connection string, as entered above.</p> <p>See the Server Administration Guide for more information.</p> <p>This is an optional value.</p> | |
| Oracle Client Character Set NLS_LANG | NLS_LANG | <p>The Oracle Database Character Set.</p> <p>Select the Language and Territory that are in use in your country.</p> <p>Default value: AMERICAN_AMERICA.AL32UTF8</p> | |

General Configuration Options

Note: See the *Oracle Utilities Customer Care and Billing Server Administration Guide* for additional details on this configuration.

5. General Configuration Options

Batch RMI Port:

RMI Port number for JMX Business:

RMI Port number for JMX Web:

JMX Enablement System User ID:

JMX Enablement System Password:

Batch Mode:

CLUSTERED

Coherence Cluster Name:

Coherence Cluster Address:

Coherence Cluster Port:

Coherence Cluster Mode:

dev

Table 9:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|----------------------------------|------------------------------|--|------------------------|
| Batch RMI Port | BATCH_RMI_PORT | Unique port used by the Batch RMI Example value: 6540 | |
| RMI Port number for JMX Business | BSN_JMX_RMI_PORT_PERFORMANCE | Example value: 6550 Note: This is an optional value. | |
| RMI Port number for JMX Web | WEB_JMX_RMI_PORT_PERFORMANCE | Example value: 6570 Note: This is an optional value. | |
| JMX Enablement System User ID | BSN_JMX_SYSUSER | This is used to authenticate incoming JMX requests. Populate if RMI Port numbers are set. Note: This is an optional value. | |
| JMX Enablement System Password | BSN_JMX_SYSPASS | This is used to authenticate incoming JMX requests. Populate if RMI Port numbers are set. This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm. Note: This is an optional value. | |
| Batch Mode | BATCH_MODE | Valid values: CLUSTERED or DISTRIBUTED Default value: CLUSTERED Note: CLUSTERED is currently the only supported mode for production environments. | |
| Coherence Cluster Name | COHERENCE_CLUSTER_NAME | Unique name for the batch CLUSTER Note: Value is required when batch mode is CLUSTERED. | |

Table 9:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|---------------------------|-----------------------------------|--|-------------------------------|
| Coherence Cluster Address | COHERENCE_CLUSTER_ADDRESS | Unique multicast address. Note: Value is required when batch mode is CLUSTERED. | |
| Coherence Cluster Port | COHERENCE_CLUSTER_PORT | Unique port for the batch CLUSTER Note: Value is required when batch mode is CLUSTERED. | |
| Coherence Cluster Mode | COHERENCE_CLUSTER_MODE | Valid values: dev (Development) prod (Production) Default value: dev | |

SSL Certificate Keystore (Weblogic Only)

Note: See the *Oracle Utilities Customer Care and Billing Security Guide* for additional details on this configuration. By default, SSL (Secure Sockets Layer) certificates are required for authentication. The product provides demo certificates generated with 1024 byte keys. For production environments, please use your own custom certificates.

```

5. SSL Certificate Keystore
Certificate Keystore Type:                CUSTOM
Identify Keystore File:
Identify Keystore File Type:             jks
Identify Keystore Password:
Identity Private Key Alias:              ouaf_demo_cert
Trust Keystore File:
Trust Keystore File Type:               jks
Trust Keystore Password:
Trust Private Key Alias:                 ouaf_demo_cert

```

Table 10:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|-----------------------------|----------------------------|---|------------------------|
| Certificate Keystore Type | CERT_KS | <p>If you choose DEMO you need to execute the following script at least once</p> <pre>perl [SPLEBASE]/bin/demo_gen_cert.plx</pre> <p>If you change DEFAULT/CUSTOM to DEMO you need to have installed the demo_gen_cert.plx script, it is part of the demo source in the installation package.</p> <p>Default value: CUSTOM Valid values: DEFAULT,DEMO,CUSTOM</p> <p>The demo_gen_cert.plx script is available if you select the 'Install Demo Generation Cert Script' option during installation. It automates the creation of the Weblogic provided demo certificate using 1024 byte keys.</p> | |
| Identify Keystore Type | CERT_IDENT_KS_FILE | <p>Mandatory if the type is CUSTOM.</p> <p>No need to populate if type is DEMO, it will use: [SPLEBASE]/splapp/certs/ouaf_demo_ident.jks</p> | |
| Identify Keystore File Type | CERT_IDENT_KS_TYPE | Default value: jks | |
| Identify Keystore Password | CERT_IDENT_KS_PASSWORD | This is a security value; it will be encrypted with the WebLogic Encryption Algorithm. | |
| Identity Private Key Alias | CERT_IDENT_KS_ALIAS | Default value: ouaf_demo_cert | |

Table 10:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--------------------------|-----------------------------------|---|-------------------------------|
| Trust Keystore File | CERT_TRUST_KS_FILE | Mandatory if the type is CUSTOM. No need to populate if type is DEMO, it will use: [SPLEBASE]/splapp/certs/ouaf_demo_trust.jks | |
| Trust Keystore File Type | CERT_TRUST_KS_TYPE | Default value: jks | |
| Trust Keystore Password | CERT_TRUST_KS_PASSWORD | This is a security value; it will be encrypted with the WebLogic Encryption Algorithm. | |
| Trust Private Key Alias | CERT_TRUST_KS_ALIAS | Default value: ouaf_demo_cert | |

Advanced Menu Options

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

Unix:

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

Windows

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

Advanced Environment Miscellaneous Configuration

50. Advanced Environment Miscellaneous Configuration

```
Online JVM Batch Server Enabled:           false
Online JVM Batch Number of Threads:        5
Online JVM Batch Scheduler Daemon Enabled:  false
Enable Batch Edit Functionality:           false
Enable Web Services Functionality:         false
Web Services WAR file name:                Webservices
GIS Service Running on the same Web Server: true
GIS Service URL:
GIS WebLogic System User ID:
GIS WebLogic System Password:
Online Display Software Home:
```

Table 11:

| Menu Option | Name Used in Documentation | Usage | Customer Value Install |
|---|----------------------------|--|------------------------|
| Populate the Web Server SOAP Port - SOAP_CONNECTOR_ADDRESS | WAS_WEB_SOAP_PORT | WebSphere Web Server SOAP Port Number This is the SOAP port used for WebSphere Basic when executing wsadmin.sh commands. Note: This value will only appear for WebSphere Basic and WebSphere ND | |
| Populate the Business Server SOAP Port - SOAP_CONNECTOR_ADDRESS | WAS_BSN_SOAP_PORT | WebSphere Business Server SOAP Port Number. This is the SOAP port used for WebSphere Basic when executing wsadmin.sh commands. Note: This value will only appear for WebSphere Basic and WebSphere ND | |
| Enter the location of the Application Server Profile Home | WAS_PROFILE_NAME_HOME | The profile home will be used when tracking log files, under websphere home. Note: This value will only appear for WebSphere Basic and WebSphere ND | |

Table 11:

| Menu Option | Name Used in Documentation | Usage | Customer Value Install |
|---|----------------------------|---|------------------------|
| WebSphere Deployment Manager Host Name | WASND_DMGR_HOST | <p>WebSphere Deployment Manager Host name, this value is used for WebSphere ND, when connecting to the WebSphere Deployment Manager.</p> <p>Note: This value will only appear for WebSphere ND.</p> | |
| Online JVM Batch Server Enabled | BATCHENABLED | <p>When starting a web application server JVM, this property can be set to “true” to allow the on-line application server to also act as a batch worker in the grid.</p> <p>Default value: false</p> <p>Note: This functionality should only be used in low volume environments.</p> | |
| Online JVM Batch Number of Threads | BATCHTHREADS | <p>The maximum number of batch processing threads to be executed within a worker JVM when no explicit Distributed Thread Pool is specified. The “DEFAULT” distributed thread pool is used by the batch-scheduling daemon when it initiates processing on batch jobs (typically added via the online system) where no thread pool is specified).</p> <p>Default value: 5</p> <p>Note: This will be only used and activated when BATCHENABLED is set to true.</p> | |
| Online JVM Batch Scheduler Daemon Enabled | BATCHDAEMON | <p>In a distributed batch environment, this property can be set to “true” to allow a worker JVM to host the batch scheduling daemon. The daemon accepts online batch submissions requests and automatically submits the work for them.</p> <p>Valid values: true, false</p> <p>Default value: false</p> <p>Note: This will be only used and activated when BATCHENABLED is set to true.</p> | |

Table 11:

| Menu Option | Name Used in Documentation | Usage | Customer Value Install |
|--|----------------------------|---|------------------------|
| Enable Batch Edit Functionality | BATCHEDIT_ENABLED | <p>Enable Batch Edit Functionality</p> <p>If enabled, use the bedit.sh cmd script in order to configure the batch</p> <p>Valid values: true, false</p> <p>Default value: false</p> | |
| Enable Web Services Functionality | WEBSERVICES_ENABLED | <p>If enabled, execute the following commands in order to allow the application to re-deploy the Webservices without prompting for the user and password:</p> <ul style="list-style-type: none"> - Add weblogic.jar to the CLASSPATH - Execute: java weblogic.Admin -username [USER NAME] -password [PASSWORD] STOREUSERCONFIG -userconfigfile [SPLEBASE]/etc/.wlsuserconfig -userkeyfile [SPLEBASE]/etc/.wlsuserkey <p>Valid values: true, false</p> <p>Default value: false</p> | |
| Web Services WAR File Name | IWSWAR | <p>Web Services WAR File Name</p> <p>Do not include the .war suffix</p> <p>Default Value: Webservices</p> | |
| GIS Service Running on the same Web Server | GIS | <p>Geographical information (GEOCODING) - GIS Service running on the same web application server</p> <p>Valid values: true, false</p> <p>This value is optional.</p> | |
| GIS Service URL | GIS_URL | <p>This is the URL of the external web server.</p> <p>Note: This value will be only be used when GIS is set to true.</p> <p>This value is optional.</p> | |
| GIS WebLogic System User ID | GIS_WLSYSUSER | <p>GIS WebLogic System User ID</p> <p>Note: This value will be only be used when GIS is set to true.</p> <p>This value is optional.</p> | |

Table 11:

| Menu Option | Name Used in Documentation | Usage | Customer Value Install |
|------------------------------|----------------------------|---|------------------------|
| GIS WebLogic System Password | GIS_WLSYSPASS | GIS WebLogic System Password. Note: This value will be only be used when GIS is set to true. This is a security value; it will be encrypted with the Oracle Utilities Application Framework Encryption Algorithm. | |
| Online Display Software Home | ONLINE_DISPLAY_HOME | The location of the Online Display Software installation directory. This value is optional. | |

Advanced Environment Memory Configuration

```

51. Advanced Environment Memory Configuration
    Web Application Java Initial Heap Size:           2048
    Web Application Java Max Heap Size:              2048
    Web Application Java Max Perm Size:              1024
    Web Application Additional Options:
    Ant Min Heap Size:                               200
    Ant Max Heap Size:                               800
    Ant Additional Options:
    Thread Pool Worker Java Min Heap Size:          512
    Thread Pool Worker Java Max Heap Size:          1024
    Thread Pool Worker Java Max Perm Size:          512
    Thread Pool Worker Additional Options: Additional Runtime
Classpath:

```

Table 12:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--|----------------------------|--|------------------------|
| Web Application Java Initial Heap Size | WEB_MEMORY_OPT_MIN | Initial heap size for the application server. Default value: 1024 Note: For WebLogic installation only. | |
| Web Application Java Max Heap Size | WEB_MEMORY_OPT_MAX | Maximum heap size for the application server. Default value: 1024 Note: For WebLogic installation only. | |
| Web Application Java Max Perm Size | WEB_MEMORY_OPT_MAXPERMSIZE | Maximum Perm Size for the application server. Default value: 500MB (Linux, Solaris) 300MB (Windows HP-UX) Note: For WebLogic installation only. | |
| Web Application Additional Options | WEB_ADDITIONAL_OPT | Additional options that will be passed in to the web application server JVM. This is optional. Note: For WebLogic installation only. | |
| Ant Min Heap Size | ANT_OPT_MIN | Minimum Heap Size passed to ANT JVM. Default value: 200 | |

Table 12:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--|-----------------------------------|---|-------------------------------|
| Ant Max Heap Size | ANT_OPT_MAX | Maximum Heap Size passed to ANT JVM. Default value: 800 | |
| Ant Additional Options | ANT_ADDITIONAL_OPT | Additional options that are passed into the ANT JVM. | |
| Thread Pool Worker Java Min Heap Size | BATCH_MEMORY_OPT_MIN | Minimum heap size passed to the Thread Pool Worker. Default value: 512 | |
| Thread Pool Worker Java Max Heap Size | BATCH_MEMORY_OPT_MAX | Maximum heap size passed to the Thread Pool Worker. Default value: 1024 | |
| Thread Pool Worker Java Max Perm Size | BATCH_MEMORY_OPT_MAXPERMSIZE | Maximum perm size passed to the Thread Pool Worker Default value: 768 | |
| Thread Pool Worker Additional Options | BATCH_MEMORY_ADDITIONAL_OPT | Additional Memory Options passed into the Thread Pool Worker. This is an optional free form field. | |
| Additional Runtime Classpath | ADDITIONAL_RUNTIME_CLASSPATH | Additional Classpath Options passed in when starting the WebLogic JVM Note: For WebLogic installation only. This is an optional value. | |

Advanced Web Application Configuration

52. Advanced Web Application Configuration

```

Web Application Cache Settings:           off
Web Server Port Number:
WebLogic Overload Protection:           system-exit
Domain Home Location:
Batch Cluster URL:
Strip HTML Comments:                   false
Authentication Login Page Type:         FORM
Web Form Login Page:                   /loginPage.jsp
Web Form Login Error Page:             /formLoginError.jsp
Application Viewer Form Login Page:     /loginPage.jsp
Application Viewer Form Login Error Page: /formLoginError.jsp
Help Form Login Page:                  /loginPage.jsp
Help Form Login Error Page:            /formLoginError.jsp
Web Security Role:                     cisusers
Web Principal Name:                    cisusers
Application Viewer Security Role:       cisusers
Application Viewer Principal Name:      cisusers
This is a development environment:     false
Preload All Pages on Startup:          false
Maximum Age of a Cache Entry for Text:  28800
Maximum Age of a Cache Entry for Images: 28800
JSP Recompile Interval (s):            43200

```

Table 13:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--------------------------------|----------------------------|--|------------------------|
| Web Application Cache Settings | WEB_L2_CACHE_MO DE | Default Value: off Valid Values: off read_write read_only | |
| Web Server Port Number | WEB_WLPORT | The port number assigned to WebLogic connection. Set this port if the environment is not configured as SSL. Note: For WebLogic installation only. Example Value: 6500 This value is optional. | |
| WebLogic Overload Protection | WLS_OVERRIDE_PR OTECT | The overload protection allows for a Weblogic server to be “stopped / exited” when there is an out of memory exception Valid Values: system-exit (Exit the server process) no-action (Ignore take no action) Default Value: system-exit Note: For WebLogic installation only. | |

Table 13:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|--|-------------------------------------|--|------------------------|
| Domain Home Location | WLS_DOMAIN_HOME | 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). Note: For WebLogic installation only This value is optional | |
| Batch Cluster URL | WEB_BATCH_CLUSTER_URL | Example: service:jmx:rmi:///jndi/rmi://[host]:[TPW JMX port]/oracle/ouaf/batchConnector | |
| StripHTMLComments: false | STRIP_HTML_COMMENTS | Stripping HTML (and JavaScript) comments will increase the security of the system. Default value: false Valid values: true, false | |
| Authentication Login Page Type | WEB_WLAUTHMETHOD | Specifies which authentication mode should be used. To switch off OUAF Login Page enter: BASIC Valid values: FORM, BASIC Default value: FORM | |
| Web Form Login Page | WEB_FORM_LOGIN_PAGE | Specify the jsp file used to login into the application. Default value: /loginPage.jsp | |
| Web Form Login Error Page | WEB_FORM_LOGIN_ERROR_PAGE | Specify the jsp file used when there is an error when logging into the application. Default value: /formLoginError.jsp | |
| Application Viewer Form Login Page | WEB_APPVIEWER_FORM_LOGIN_PAGE | Specify the jsp file used to login into the application viewer application. Default value: /loginPage.jsp | |
| Application Viewer Form Login Error Page | WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE | Specify the jsp file used when there is an error when logging into the application viewer application. | |
| Help Form Login Page | WEB_HELP_FORM_LOGIN_PAGE | Specify the jsp file used to login into the help application. Default value: /loginPage.jsp | |

Table 13:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|---------------------------------------|--------------------------------|--|------------------------|
| Help Form Login Error Page | WEB_HELP_FORM_LOGIN_ERROR_PAGE | Specify the jsp file used when there is an error when logging into the help application. Default value: /formLoginError.jsp | |
| Web Security Role | WEB_PRINCIPAL_NAME | Specify the name of the security role. Default value: cisusers | |
| Web Principal Name | WEB_PRINCIPAL_NAME | Specify the name of a principal that is defined in the security realm. Default value: cisusers | |
| Application Viewer Security Role | WEB_APPVIEWER_ROLE_NAME | Specify the name of the security role. Default value: cisusers | |
| Application Viewer Principal Name | WEB_APPVIEWER_PRINCIPAL_NAME | Specify the name of a principal that is defined in the security realm. Default value: cisusers | |
| This is a development environment | WEB_ISDEVELOPMENT | If the value is “true”, the web application may be used for application development, which will trigger certain generation processes. If the value is “false” the environment will be used as a runtime environment. When you choose “true” (development environment) the startup preload pages will be disabled, and the application security will be less strict. This value also controls the amount of logging information written to the application log files. Valid values: true, false Default value: false | |
| Preload All Pages on Startup | WEB_PRELOADALL | This controls if the pages should be preloaded during the startup of the application or not. Valid values: true, false Default value: false | |
| Maximum Age of a Cache Entry for Text | WEB_MAXAGE | Default value: 28800 | |

Table 13:

| Menu Option | Name Used in Documentation | Usage | Customer Install Value |
|---|-----------------------------------|----------------------|-------------------------------|
| Maximum Age of a Cache Entry for Images | WEB_MAXAGEI | Default value: 28800 | |
| JSP Recompile Interval (s) | WEB_wlpageCheckSeconds | Default value: 43200 | |

OIM Configuration Settings

53. OIM Configuration Settings

```

SPML SOAP Trace Setting:                false
SPML IDM Schema Name:                   F1-IDMUser
SPML OIM Name Space:                    http://xmlns.oracle.com/OIM/provisioning
SPML OIM Enclosing Element:             sOAPElement

```

Table 14:

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

Keystore Options

54. Keystore options

(if keystore options are modified, you must run `initialSetup.sh|cmd -k` in order to recreate the keystore)

```

Store Type:                JCEKS
Alias:                     ouaf.system
Alias Key Algorithm:       AES
Alias Key Size:            128
HMAC Alias:                ouaf.system.hmac
Padding:                   PKCS5Padding
Mode:                      CBC

```

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

Chapter 5

Installing Application Server Prerequisite Software

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

- [AIX 7.1 Application Server](#)
- [Oracle Linux 6.5 or 7.0 and Red Hat Linux 6.5 or 7.0 Application Server](#)
- [Solaris 11 Application Server](#)
- [Windows 2012 Application Server](#)
- [HP-UX 11.31 Application Server](#)

AIX 7.1 Application Server

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

Supported Application Servers

| Operating System | Chipsets | Application Server |
|----------------------|--------------|---|
| AIX 7.1 (64-bit) TL1 | POWER 64-bit | Oracle WebLogic (12.1.3.0+) 64-bit version WebSphere 8.5.5 64-bit version |

Web/Application Server Tier

AIX 7.1 TL1 Operating System Running on Power5 and Power6 Architecture

UNIX Administrator Userid

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

| Description | Default Value | Customer Defined Value |
|--------------------------|---------------|------------------------|
| CCB Administrator UserID | cissys | |
| CCB User Group | cisusr | |

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the “cissys” user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the installed files.

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

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

Security Configuration

Various options exist to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created

according to industry standards (including password policies). All users should be created with a default umask of 077 to ensure files created during normal operation have the correct permissions.

Please replace these users and groups for your installation defaults:

| User | Group | Description |
|--------|--------|--|
| cissys | cisusr | This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application. |
| cisadm | cisusr | Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files |

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

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

Oracle 12.1.0.1.0 Client

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

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

IBM Java Software Development Kit version 7.0 or 7.1 (64-bit)

Installation of Java as a prerequisite is only needed if you are using Oracle WebLogic as a Web application server. If you use WebSphere, the Java runtime engine from the Web application server is used.

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

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

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

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

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing.

To install Hibernate:

1. Create a Hibernate jar external depot:

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

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

<http://sourceforge.net/projects/hibernate/files/hibernate4/>

Click the “4.1.0.Final” link to download the zip file.

3. Extract the contents of the archive file:

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

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

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

```
cp hibernate-release-4.1.0.Final/lib/optional/
ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/
ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

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

IBM WebSphere Application Server 8.5.5.x 64-bit

WebSphere must be purchased and downloaded from IBM. It must be installed and configured prior to the Oracle Utilities Customer Care and Billing installation. This Web application server will run as a 64-bit application.

IBM WebSphere Application Server 8.5 supports SDK 1.6 as the basic configuration but with SDK 1.7 or 1.7.1_64 as an optional configuration. For Oracle Utilities Customer Care and Billing, the implementation requires SDK 1.7 or 1.7.1_64 as the default run-time configuration for WebSphere Application Server 8.5. Therefore, after WebSphere Application Server is installed with the basic configuration, you **MUST** change the default SDK to 1.7 or 1.7.1_64.

A single WebSphere server represents a single Oracle Utilities Customer Care and Billing environment. You can install multiple environments on a single WebSphere Installation by creating additional WebSphere servers. Refer to [Chapter 5: Configuring WebSphere Application Server](#) for the configuration steps.

IBM WebSphereND Application Server 8.5.5.x 64-bit

WebSphere must be purchased and downloaded from IBM. It must be installed and configured prior to the Oracle Utilities Customer Care and Billing installation. This Web application server will run as a 64-bit application.

IBM WebSphere Application Server 8.5 supports SDK 1.6 as the basic configuration but with SDK 1.7 or 1.7.1_64 as an optional configuration. For Oracle Utilities Customer Care and Billing, the implementation requires SDK 1.7 or 1.7.1_64 as the default run-time configuration for WebSphere Application Server 8.5. Therefore, after WebSphere Application Server is installed with the basic configuration, you **MUST** change the default SDK to 1.7 or 1.7.1_64.

A single WebSphere server represents a single Oracle Utilities Customer Care and Billing environment. You can install multiple environments on a single WebSphere Installation by creating additional WebSphere servers. Refer to [Chapter 5: Configuring WebSphere Application Server](#) for the configuration steps.

Oracle Linux 6.5 or 7.0 and Red Hat Linux 6.5 or 7.0 Application Server

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

Supported Application Servers

| Operating System | Chipsets | Application Server |
|--|----------|--|
| Oracle Linux 6.5 or 7.0 (64-bit) Red Hat Enterprise Linux 6.5 or 7.0 (64-bit) | x86_64 | Oracle WebLogic 12.1.3.0+ (64-bit) version |

Web/Application Server Tier

Oracle Enterprise Linux 6.5 or 7.0 or Red Hat Enterprise Linux 6.5 or 7.0 Operating System Running on x86_64 64-bit Architecture

UNIX Administrator Userid

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

| Description | Default Value | Customer Defined Value |
|--------------------------|---------------|------------------------|
| CCB Administrator UserID | cissys | |
| CCB User Group | cisusr | |

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the “cissys” user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the files installed.

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

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

Security Configuration

Various options exist to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-

executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 077 to ensure files created during normal operation have the correct permissions.

Please replace these users and groups for your installation defaults:

| User | Group | Description |
|--------|--------|--|
| cissys | cisusr | This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application. |
| cisadm | cisusr | Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files |

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

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

Oracle 12.1.0.1.0 Client

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

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

Oracle Java Development Kit Version 7.0 Update 45 or Later, 64-Bit

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

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

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

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

Oracle Java Development Kit Version 8.0 Update 40 or Later, 64-Bit

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

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

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

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

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing.

To install Hibernate:

1. Create a Hibernate jar external depot:

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

2. Download the `hibernate-release-4.1.0.Final.zip` file from

```
http://sourceforge.net/projects/hibernate/files/hibernate4/
```

Click the “4.1.0.Final” link to download the zip file.

3. Extract the contents of the archive file:

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

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

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

```
cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

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

Solaris 11 Application Server

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

Supported Application Servers

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

Web/Application Server Tier

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

UNIX Administrator Userid

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

| Description | Default Value | Customer Defined Value |
|--------------------------|---------------|------------------------|
| CCB Administrator UserID | cissys | |
| CCB User Group | cisusr | |

Note: It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the “cissys” user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the files installed.

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

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

Security Configuration

Various options exist to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 077 to ensure files created during normal operation have the correct permissions.

Please replace these users and groups for your installation defaults:

| User | Group | Description |
|--------|--------|--|
| cissys | cisusr | This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application. |
| cisadm | cisusr | Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files |

Note: The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

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

Oracle 12.1.0.1.0 Client

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

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

Oracle Java Development Kit Version 7.0 Update 45 or Later, 64-Bit

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

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

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

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

Oracle Java Development Kit Version 8.0 Update 40 or Later, 64-Bit

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

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

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

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

Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing.

To install Hibernate:

1. Create a Hibernate jar external depot:

- ```
export HIBERNATE_JAR_DIR=<Hibernate 3rd party jars depot>
```
- Download the hibernate-release-4.1.0.Final.zip file from  
<http://sourceforge.net/projects/hibernate/files/hibernate4/>

Click the “4.1.0.Final” link to download the zip file.

- Extract the contents of the archive file:

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

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

- Copy the jar files to your Hibernate jar directory (\$HIBERNATE\_JAR\_DIR) using the following commands:

```
cp hibernate-release-4.1.0.Final/lib/optional/
ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/
ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

### Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

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

# Windows 2012 Application Server

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

## Supported Application Servers

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

## Web/Application Server Tier

### Oracle Client 12.1.0.1.0

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

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

### Oracle Java Development Kit Version 7.0 Update 45 or Later, 64-Bit

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

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

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

For the user ID cissys, ensure that the environment variable JAVA\_HOME is setup, and that java\_home/bin and java\_home/lib can be found in cissys' PATH variable.

### Oracle Java Development Kit Version 8.0 Update 40 or Later, 64-Bit

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

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

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

For the user ID cissys, ensure that the environment variable JAVA\_HOME is setup, and that java\_home/bin and java\_home/lib can be found in cissys' PATH variable.

### Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing.

To install Hibernate:

1. Create a Hibernate jar external depot:

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

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

<http://sourceforge.net/projects/hibernate/files/hibernate4/>

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

3. Extract the contents of the archive file:

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

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

4. Copy the jar files to your Hibernate jar directory (\$HIBERNATE\_JAR\_DIR) using the following commands:

```
cp hibernate-release-4.1.0.Final/lib/optional/
 ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/
 ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

### Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

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

# HP-UX 11.31 Application Server

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

## Supported Application Servers

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

## Web/Application Server Tier

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

#### UNIX Administrator User ID

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

| Description              | Default Value | Customer Defined Value |
|--------------------------|---------------|------------------------|
| CCB Administrator UserID | cissys        |                        |
| CCB User Group           | cisusr        |                        |

**Note:** It is recommended that you change the default values for security reasons.

Throughout this document the administrator user id is often referred to as the “cissys” user id. You should substitute that with the customer defined user id when not using the default value. After the initial install, the software should always be managed using that user id.

By default, the cissys userid is the only one given access to the files installed.

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

The shell scripts use the ">" to overwrite shell functionality. Your operating system may be configured to not allow this functionality by default in the users shell.

To avoid file access permission problems when executing scripts, consider placing the following command into cissys profile script:

```
set +o noclobber
```

#### Security Configuration

Various options exist to secure a system. In this application all files will be created with the minimum permissions required to ensure that group-readable, group-writable and group-executable files will have the correct user groups and to restrict the permissions available to legitimate users. In this way, a low privileged end user cannot directly edit configuration files and thereby bypass application security controls.

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created

according to industry standards (including password policies). All users should be created with a default umask of 077 to ensure files created during normal operation have the correct permissions.

Please replace these users and groups for your installation defaults:

| User   | Group  | Description                                                                                                                                                                                                                                                                  |
|--------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cissys | cisusr | This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application. |
| cisadm | cisusr | Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files                                              |

**Note:** The Oracle Client and WebLogic should be installed as the user who will stop and start the application. For example, if you plan to run the application as the install user these components must belong to cissys.

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

### Oracle 12.1.0.1.0 Client

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

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

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

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

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

For the user ID cissys, ensure that the environment variable JAVA\_HOME is setup, and that java\_home/bin and java\_home/lib can be found in cissys' PATH variable.

### Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer Care and Billing.

To install Hibernate:

1. Create a Hibernate jar external depot:
 

```
export HIBERNATE_JAR_DIR=<Hibernate 3rd party jars depot>
```
2. Download the hibernate-release-4.1.0.Final.zip file from
 

```
http://sourceforge.net/projects/hibernate/files/hibernate4/
```

Click the "4.1.0.Final" link to download the zip file.
3. Extract the contents of the archive file:

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

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

4. Copy the jar files to your Hibernate jar directory (\$HIBERNATE\_JAR\_DIR) using the following commands:

```
cp hibernate-release-4.1.0.Final/lib/optional/
 ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/optional/
 ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR
cp hibernate-release-4.1.0.Final/lib/required/
 jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

### Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

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

# Chapter 6

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## Configuring WebSphere Application Server

This section describes tasks that you should complete before you install the Oracle Utilities Application Framework. It also describes configuration tasks you should complete after installing Oracle Utilities Customer Care and Billing. It includes the following:

- [Configuring WebSphere Basic](#)
- [Configuring WebSphere Network Deployment](#)



---

# Configuring WebSphere Basic

## Pre-Installation Tasks

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

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

### Setting of WebSphere Security

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

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

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

### Setting WebSphere Application Groups

1. Start the WebSphere Administrative Console and log in.
2. Go to **Users and Groups - Manage Groups**.  
Create the group name of cisusers (default group).
3. Click **Create**.

### Setting WebSphere Application Users

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

### Setting WebSphere JNDI Users

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

### Setting WebSphere JNDI Users - CORBA Naming Service Users

1. Start the WebSphere Administrative Console and log in.

2. Go to **Environment, Naming, CORBA Naming Service Users**.
  - Add the user id of JNDI (example user).
  - Highlight all of the Roles (Cos Naming Read, Cos Naming Write, Cos Naming Create, Cos Naming Delete)
3. Click **Apply**.
 

**Note:** Prior to this step you will need to restart the server1 since when adding CORBA Naming Service Users, the User is not recognized.
4. Note the values for JNDI User and Password. The Oracle Utilities Application Framework will prompt you for this information during the installation.

### Creation of Additional Servers in WebSphere - Sample Script

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

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

1. Initialize a wsadmin.sh session:

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

**Note:** Substitute \$WAS\_HOME, webSphereUserName, SoapConnectorPort, webSphereUserPassword, with values that are appropriate for your installation:

For example:

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

2. Create the server instance:

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

### Setting General Server Properties

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

### Enabling SOAP Communication with WebSphere

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

To enable SOAP communication with WebSphere:

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

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

Edit the property lines as follows:

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

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

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

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

2. Save and close the file.

## Enabling RMI Communication with WebSphere (Webservices Enable Environment)

The IWS (Inbound Web Services Deployment) configuration scripts communicate with WebSphere using RMI for IWS commands to perform actions for IWS (for example, deploy, undeploy of the `WebService.war` file). When the following items are not completed, the deployment run would appear to "hang", most importantly if submitted from the OUAF online Inbound Web Services Deployment page.

To allow the deployment tasks to no RMI communication with WebSphere:

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

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

2. Edit the property lines as follows:

```
com.ibm.CORBA.loginSource=properties
com.ibm.CORBA.loginuserid=< websphere user id>
com.ibm.CORBA.loginPassword=< websphere user password>
```

**Note:** Refer to IBM WebSphere Application Server documentation for more details. If you want to encode the password in the `sas.client.props` file, then run the `PropFilePasswordEncoder` command from the `$WAS_HOME/profiles/<PROFILE_NAME>/bin` directory.

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

3. Save and close the file.

## Creation of Additional Servers in WebSphere - Sample Script

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

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

1. Initialize a `wsadmin.sh` session:

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

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

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

2. Create the server instance:

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

## Obtaining the Bootstrap Port and WC\_defaulthost\_secure

You must also provide these port numbers during Oracle Utilities Application Framework installation. Obtain the bootstrap port number and the WC\_defaulthost\_secure by using the WebSphere administrative console.

**Note:** The WebSphere application server1 must be running to obtain the bootstrap port number and the WC\_defaulthost\_secure port number.

To view the bootstrap port number and the WC\_defaulthost\_secure:

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

The bootstrap port is displayed as BOOTSTRAP\_ADDRESS.

The WC\_defaulthost\_secure is displayed as WC\_defaulthost\_secure

3. Note the values for WC\_defaulthost\_secure and BOOTSTRAP\_ADDRESS. The Oracle Utilities Application Framework will prompt you for this information during the installation.

## Set Up a Virtual Host for the Server

1. Select **Environment, Virtual Host, default\_host**, and then select **Host Alias**.
2. Click **New**.

Enter the following:

- **Host Name:** \*
- **Port:** WC\_defaulthost\_secure Port Number

## Obtaining the WebSphere Node Name

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

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

To obtain the node name:

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

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

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

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

## Post-Installation Tasks

This section describes tasks that you should complete after you have installed Oracle Utilities Customer Care and Billing on a WebSphere application server.

### Setting Environment Entries.

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers**.
3. Select the server name.
4. Go to **Server Infrastructure**, and then click **Java and Process Management**.
5. Select **Process Definition**.
6. Go to Environment Entries.
7. Click **New** and add the following Environment Entries:
  - Name:** SPLENVIRON
  - Value:** <\${SPLENVIRON}>
  - Note:** Substitute \${SPLENVIRON} with appropriate values for your installation.
  - Name:** SPLEBASE
  - Value:** < \${SPLEBASE} >
  - Note:** Substitute \${SPLEBASE} with appropriate values for your installation.
  
  - Name:** LIBPATH
  - Value:** <\${SPLEBASE} >/runtime
  - Note:** Substitute \${SPLEBASE} with appropriate values for your installation.
  - Note:** You will need to restart the server\_name before you attempt to start the application on the server.
8. Click **OK**.
9. Click **Save** to commit the setting.

### Setting JVM Memory and Arguments

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

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

To set the JVM memory size:

1. Connect to the WebSphere administrative console.
2. Select **Servers, Server Types, WebSphere application servers**.
3. Select the server name.
4. Go to **Server Infrastructure**, and then click **Java and Process Management**.
5. Select **Process Definition**.
6. Go to **Additional Properties**, and then click **Java Virtual Machine**.
7. Enter 2048 for **Minimum Heap Size**.
8. Enter 2048 for **Maximum Heap Size**.

**Note:** Modify the memory settings based on your production installation needs.

9. Enter `-Djava.security.auth.login.config=<$SPLEBASE>/splapp/config/java.login.config` for Generic JVM arguments.

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

You will need to restart the server\_name before you attempt to start the application on the server.

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

### Setting Server Custom Properties.

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

To set the Custom Properties:

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

Enter the following information:

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

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

### Setting the Web Container Custom Properties.

To set the Web Container Custom Properties:

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

Enter the following information:

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

8. Click **OK**.

- Click **Save** to commit the setting.

## Starting and Stopping WebSphere Servers

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

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

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

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

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

## Deployment Using Supplied Script

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

**Note:** Before running the script ensure you have initialized the environment by running `splenvron.sh`

## Deployment via the Admin Console

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

### Deployment Overview

The application needs to be deployed in the following order:

- `SPLService.ear`
- `SPLWeb.ear`

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

### Deploy SPLService.ear

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

When deploying an application from the console make sure you select the correct server and click **Apply**.
- Review the summary page. Review the installation options.
- Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.

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

### Deploying SPLWeb.ear

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

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



## Configure the Applications

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

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

## Configure Application Security

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

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

For role cisusers:

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

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

## Restart the WebSphere Server

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

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

**Note:** WebSphere admin console runs under server1.

### **Application URL**

The Web link to the WebSphere application will be:

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

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

# Configuring WebSphere Network Deployment

## Pre-Installation Tasks

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

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

### Setting of WebSphere ND Security

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

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

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

### Setting WebSphere ND Application Groups

1. Start the WebSphere ND Administrative Console and log in.
2. Go to **Users and Groups - Manage Groups**.  
Create the group name of cisusers (default group).
3. Click **Create**.

### Setting WebSphere ND Application Users

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

### Setting WebSphere ND JNDI Users

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

### Setting WebSphere ND JNDI Users - CORBA Naming Service Users

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

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

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

### Setting General Server Properties.

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

### Enabling SOAP Communication with WebSphere ND

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

To enable SOAP communication with WebSphere ND:

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

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

Edit the property lines as follows:

- com.ibm.SOAP.requestTimeout=0
- com.ibm.SOAP.loginuserid=< WebSphere\_User\_Id >
- com.ibm.SOAP.loginPassword=< WebSphere\_Password >

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

2. If you want to encode the password in the soap.client.props file, then run the PropFilePasswordEncoder command from the \$WAS\_HOME/profiles/<PROFILE\_NAME>/bin directory.

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

3. Save and close the file.

### Enabling RMI Communication with WebSphere (Webservices Enable Environment)

The IWS (Inbound Web Services Deployment) configuration scripts communicate with WebSphere using RMI for IWS commands to perform actions for IWS (for example, deploy, undeploy of the WebService.war file. When the following items are not completed, the deployment run would appear to "hang", most importantly if submitted from the OUAF online Inbound Web Services Deployment page.

To allow the deployment tasks to no RMI communication with WebSphere:

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

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

2. Edit the property lines as follows:

```
com.ibm.CORBA.loginSource=properties
com.ibm.CORBA.loginUserId=< websphere user id>
com.ibm.CORBA.loginPassword=< websphere user password>
```

**Note:** Refer to IBM WebSphere Application Server documentation for more details. If you want to encode the password in the sas.client.props file, then run the PropFilePasswordEncoder command from the \$WAS\_HOME/profiles/<PROFILE\_NAME>/bin directory.

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

3. Save and close the file.

## Creation of Additional Servers in WebSphere ND

You must also provide the server names during the installation.

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

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

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

2. Select server type from the drop down list: WebSphere application server. Click **N.ext**
3. Select node from the drop down list that has been created for to host the WebSphere server.

Enter the Server name

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

4. Select a server template of default  
Click Next
5. Check the box to Generate Unique Ports. Click Next
6. Confirm new server. Click Finished

## Obtaining the Bootstrap Port and WC\_defaulthost\_secure

You must also provide these port numbers during Oracle Utilities Application Framework installation. Obtain the bootstrap port number and the WC\_defaulthost\_secure by using the WebSphere ND administrative console.

**Note:** The WebSphere ND Deployment Manager server must be running to obtain the bootstrap port number and the WC\_defaulthost\_secure port number

To view the bootstrap port number and the WC\_defaulthost\_secure:

1. Log on to the WebSphere ND administrative console.
2. Select Servers, Application Servers, <server\_name>, and then select **Ports** under Communication.

The bootstrap port is displayed as BOOTSTRAP\_ADDRESS. The WC\_defaulthost\_secure is displayed as WC\_defaulthost\_secure.

3. Note the values for WC\_defaulthost\_secure and BOOTSTRAP\_ADDRESS. The Oracle Utilities Application Framework will prompt you for this information during the installation.

### Set up a New Virtual Host for your Server

1. Select **Environment, Virtual Host, default\_host**, and then select **Host Alias**.
2. Click **New**.
3. Enter the following:
  - Host Name:
  - Port: WC\_defaulthost\_secure Port Number

### Obtaining the WebSphere ND Node Name

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

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

To obtain the node name:

1. Connect to the WebSphere ND administrative console
2. In the left pane, click **Servers**.
3. Click **Application Servers** under Servers.
4. Click the server instance (server\_name, default) on the right section.
5. Click the **Runtime** tab.

**Note:** The value for the Node Name.

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

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

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

## Post-Installation Tasks

This sections describes tasks that you should complete after you have installed the Oracle Utilities Application Framework and Oracle Utilities Customer Care and Billing on a WebSphere application server.

### Setting Environment Entries.

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

Add the following entries:

**Name:** SPLENVIRON

**Value:** <\${SPLENVIRON}>

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

**Name:** SPLEBASE

**Value:** `< $$SPLEBASE >`

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

**Name:** LIBPATH

**Value:** `< $$SPLEBASE >/runtime`

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

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

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

### Setting JVM Memory and Arguments

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

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

To set the JVM memory size:

1. Connect to the IBM WebSphere ND administrative console.
2. Select **Servers**, and then select **Application Servers**.
3. Select the server name.
4. Go to **Server Infrastructure**, and then click **Java and Process Management**.
5. Select **Process Definition**.
6. Go to **Additional Properties**, and then click **Java Virtual Machine**.
7. Enter 2048 for **Minimum Heap Size**.
8. Enter 2048 for **Maximum Heap Size**.

**Note:** Modify the memory settings based on your production installation needs.

9. Enter `-Djava.security.auth.login.config=< $$SPLEBASE >/splapp/config/java.login.config` for Generic JVM arguments.

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

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

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

### Setting Server Custom Properties.

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

To set the Custom Properties:

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

Enter the following information:

**Name:** javax.xml.transform.TransformerFactory

**Value:** org.apache.xalan.processor.TransformerFactoryImpl

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

### Setting Up the Web Container Custom Properties.

To set the Web Container Custom Properties:

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

Enter the following information:

**Name:** com.ibm.ws.webcontainer.invokefilterscompatibility

**Value:** true

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

### Starting and Stopping WebSphere ND servers

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

**Note:** The Oracle Utilities Application Framework utility **spl.sh** does not stop or start the IBM WebSphere ND servers. It only stops and starts the Oracle Utilities Customer Care and Billing applications.

### Deployment Using Supplied Script

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

**Note:** Before running the script ensure you have initialized the environment by running `splenvron.sh`



## Deployment via the Admin Console

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

### Deployment Overview

The application needs to be deployed in the following order:

1. SPLService.ear
2. SPLWeb.ear

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

### Deploy SPLService.ear

1. Select the ear file to deploy.
  - Select **Applications, Install New Application**.
  - Select **Remote file system**.
  - Browse to the SPLService.ear or enter the full path to the file.
  - The ear files can be found under \$SPLEBASE/splapp/applications.Click **Next**.
2. Select **Option Fast Path - Prompt only when additional information is required**.  
Click **Next**.
3. On the Select installation options page  
Ensure **Deploy enterprise beans** is selected.  
Click **Next**.
4. Assign the module to the IBM WebSphere ND server instance.  
When deploying an application from the console make sure you select the correct server and click **Apply**.
5. Review the summary page. Review the installation options
6. Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.
7. Click **Save**. The save process can take about more than 20 minutes.

### Deploying SPLWeb.ear

1. Select the ear file to deploy.
  - Select **Applications, Install New Application**.
  - Select **Remote file system**.
  - Browse to the SPLWeb.ear or enter the full path to the file.
  - The ear files can be found under \$SPLEBASE/splapp/applications.Click **Next**.
2. Select **Option Fast Path - Prompt only when additional information is required**.  
Click **Next**.
3. Assign the module to the IBM WebSphere ND server instance.  
When deploying an application from the console make sure you select the correct server and click **Apply**.
4. Review the summary page. Review the installation options

5. Click **Finish**. The application will then deploy. The deployment process takes about 5 minutes.
6. Click **Save**. The save process can take about more than 20 minutes.

### Configure the Applications

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

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

### Configure Application Security

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

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

For role cisusers:

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

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

### **Restart the IBM WebSphere ND Server**

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

### **Application URL**

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

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

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

# Chapter 7

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## Installing the Application Server Component of Oracle Utilities Application Framework

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

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

---

## Installation Overview

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

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

Before you proceed with the installation process:

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

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

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

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

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

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# Pre-Installation Tasks

## Hardware and Software Version Prerequisites

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

## Database Installation

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

## Installation Prerequisites

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

## System Architecture Overview

Oracle Utilities Application Framework V4.3.0.0.1 is a decoupled system architecture involving a business service application tier and a web application tier. Typically both will run on the same server, but the design does allow each tier to be installed on separate servers.

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

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

## Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.3.0.0.1 installation file is delivered in jar format for both UNIX and Windows platforms. If you are planning to install multiple Oracle Utilities Application Framework V4.3.0.0.1 environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

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

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework V4.3.0.0.1 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as `c:\ouaf\temp` or `/ouaf/temp`. (Referred to below as <TEMPDIR>.)

**Note:** This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this

directory as a part of the installation can be deleted after completing a successful installation.

4. Copy the file FW-V4.3.0.0.1-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
```

```
jar -xvf FW-V4.3.0.0.1-MultiPlatform.jar
```

**Note:** You will need to have Java JDK installed on the machine used to (un)jar the application server installation package. Please install the JDK that is supported for the install on your platform to be able to use the jar command. This is the location of Java packages: <http://www.oracle.com/technetwork/java/archive-139210.html>

A sub-directory named "FW.V4.3.0.0.1" is created. It contains the installation software for the Oracle Utilities framework application server.

## Set Permissions for the cistab File in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the <TEMPDIR>/FW.V4.3.0.0.1 directory named cistab\_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities Application Framework application environment on the server) and registers a new environment.

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

# Installing Oracle Utilities Application Framework

This section outlines the steps for installing the Application Framework.

## Installation Process (Brief Description)

1. Log on as the Oracle Utilities Framework administrator (the default is cissys on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure your application server and any third-party software required for your platform, as outlined in [Chapter 5: Installing Application Server Prerequisite Software](#)
3. Change directory to the <TEMPDIR>/FW.V4.3.0.0.1 directory.
4. Set the following path:

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

**Note:** The above command is only applicable on a Unix platform.

<JAVA\_HOME> is the location where the JDK has been installed.

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

## Installation Process (Detailed Description)

1. Log on to the host server as Oracle Utilities Application Framework administrator.  
Logon as cissys (on UNIX) or as a user with Administrator privileges (on Windows).
2. Configure application server and third-party software.  
Complete all steps outlined in [Installing Application Server Prerequisite Software](#). You will need to obtain specific information for the install.
3. Change directory to the <TEMPDIR>/FW.V4.3.0.0.1 directory and start the application installation utility by executing the appropriate script:  
**UNIX:** ksh ./install.sh  
**Windows:** install.cmd
4. On the Environment Installation Options menu, select item 1: Third Party Software Configuration.  
Use the completed Third Party Software Configuration worksheet in [Installation and Configuration Worksheets](#) to complete this step.
5. Select menu item 2: Keystore Options.  
Use the completed Keystore Options Worksheet to complete this step. See [Installation and Configuration Worksheets](#).
6. Select menu item 50: Environment Installation Options.  
Use the completed Environment Installation Options Worksheet to complete this step. See [Installation and Configuration Worksheets](#).



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

- Specify the environment name and the environment directory names for a new installation on a menu screen.
  - Specify the type of the database your environment will be connected to (the default will be Oracle).
  - Specify the web application server your environment will run with (the default will be WebLogic).
  - Enter P to accept the selected options.
  - During this step, the specification of a new environment is checked for validity against /etc/cistab and the permissions on mount points and directories.
  - Below are the mandatory lists of configurable items along with descriptions for a few items.
7. Configure environment parameters.
- During this step you will configure environment parameters such as web server hosts and ports, database name, and user ID.
  - The application installation utility shows default values for some configuration options.
  - Use the completed Environment Configuration Worksheet to assist you.
  - Note: Every option requires a value for a successful install. It is important to provide all values.
  - When you are done with the parameters setup, proceed with the option P.
  - All of the options will be written in the following File: \$ SPLEBASE/etc/ ENVIRON.INI.
  - You will be warned if you did not edit a section. You may proceed if you want to keep the default settings.
  - The application installation utility copies the installation media to a new environment.
    - The installation utility copies the new version software from the temporary installation media directory to the new environment.
    - If any interruption occurs during this step, you can rerun the install utility from the beginning and follow the interactive instructions. The application installation utility is able to recover from such a failure.
  - The application installation utility generates environment configuration parameters:
    - The application installation utility automatically executes the script initialSetup.sh (on UNIX) or initialSetup.cmd (on Windows), located in \$SPLEBASE/bin (%SPLEBASE%\bin on Windows) directory. This script populates different application template configuration files with the new environment variables values and completes the rest of the installation steps.
8. Set up environment variables.

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

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

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

**Note:** Make sure that this directory exists. Otherwise the installation script will fail.

- \$SPLENVIRON (%SPLENVIRON%) - environment name

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

**UNIX:** \$SPLBASE/bin/splenvron.sh -e \$SPLENVIRON

**Windows:** %SPLBASE%\bin\splenvron.cmd -e %SPLENVIRON%

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

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

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

# Chapter 8

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

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

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

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

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

You *must* initialize the Framework environment along with the required Patch Set prior to proceeding with Oracle Utilities Customer Care and Billing Application product installation. For detailed instructions see [Preparing for the Installation](#).

## Pre-installation Tasks

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

### Installing Prerequisite Patches

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

The patches are available as a convenience rollup inside the zip file, CCB-V2.5.0.0.0-FW-PREREQ-MultiPlatform.zip, which is part of the downloaded Media Pack.

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

Follow these steps for installing the application and database patches on top of Oracle Utilities Application Framework 4.3.0.0.1:

1. Copy the file CCB-V25000-FW-PREREQ-MultiPlatform.jar in the delivered package to a <TEMPDIR>. Unjar using below command:

```
jar -xvf CCB-V25000-FW-PREREQ-MultiPlatform.jar
```

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

**UNIX:**

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

**Windows:**

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

3. Install application patches:

- 3a. Navigate to the <temp location>/FW-V4.3.0.0.1-Rollup/Application folder

- 3b. Execute the group installation script:

**Unix /Linux:**

```
chmod a+x installSFgroup.sh
```

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

```
./installSFgroup.sh
```

**Windows:**

```
installSFgroup.cmd
```

4. Install database patches:

- 4a. Initialize any Framework environment

**UNIX:**

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

**Windows:**

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

- 4b. Navigate to the <temp location>/FW-V4.3.0.0.1-Rollup/Database folder

- 4c. Execute the Database Patch Utility:

**Unix:**

```
chmod a+x *.sh
```

```
./ouafDatabasePatch.sh -p "-t 0 -d
SCHEMA_NAME,DBSERVER:DBPORT:DBSID"
```

**Windows:**

```
ouafDatabasePatch.cmd -p "-t 0 -d
SCHEMA_NAME,DBSERVER:DBPORT:DBSID"
```

## Copying and Decompressing Install Media

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

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

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

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Customer Care and Billing application environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
3. Copy the file CCB-V2.5.0.0.0-MultiPlatform.jar in the delivered package to a <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>

jar -xvf CCB-V2.5.0.0.0-MultiPlatform.jar
```

**Note:** You will need to have Java JDK installed on the machine used to (un)jar the application server installation package. Please install the JDK that is supported for the install on your platform to be able to use the jar command. This is the location of Java packages: <http://java.sun.com/products/archive/index.html>

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

For both Unix and Windows platforms, a sub-directory named CCB.V2.5.0.0.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

## Preparing for the Installation

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

**UNIX:**

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

**Windows:**

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

3. Stop the environment if running.

**UNIX:**

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

**Windows:**

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

## Installing the Application

1. Change to the <TEMPDIR>/CCB.V2.5.0.0.0 Directory.
2. Set the following path:

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

**Note:** The above command is only applicable on a Linux platform.

<JAVA\_HOME> is the location where the JDK has been installed.

3. Execute the script:

**UNIX:**

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

**Windows:**

```
install.cmd
```

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

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

**Unix:**

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

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

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

**Windows:**

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

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

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

**Notes.**

- In case you are using demo certificates, please execute the below command before starting the environment:

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

- **For WebSphere environment installations:** at the end of the installation process you will be prompted whether to deploy the application into WebSphere server. If you reply **Y** the installation script will deploy the application into WebSphere using wsadmin tool. If you reply **N** you may deploy the application into WebSphere manually using WebSphere admin console, or by executing the genwasdeploy utility.

7. Start up the environment.

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

**Note:**

- **For WebSphere environment installations:** because the WebSphere server usually runs under root user id, it needs to be restarted with the new environment variable settings after Oracle Utilities Customer Care and Billing environment installation and deployment into WebSphere. To do this switch to root user id, setup `$WAS_HOME` environment variable (and the rest of environment variables as described in [Chapter 5: Installing Application Server Prerequisite Software](#)), initialize the newly installed environment by executing the command: `$$SPLBASE/bin/splenviron.sh -e $SPLENVIRON` and after that shutdown and startup WebSphere server using WebSphere commands, e.g. `$$WAS_HOME/bin/startServer.sh server1`. After the initial server restart you may start the application by the environment startup/shutdown commands or through WebSphere Admin console.

## Installing User Documentation

This section provides instructions for installing the Oracle Utilities Customer Care and Billing user documentation that is supplied with the system. Oracle Utilities Customer Care and Billing user documentation in printable format is provided as Word documents. CCB V2.5.0 User Documentation is available as a separate download within the Oracle Utilities Customer Care and Billing Media Pack on the Oracle Software Delivery Cloud.

The documentation is also provided in HTML format located inside the Oracle Utilities Customer Care and Billing application server installation package. It is automatically installed and can be launched from the user interface. The files are under the applications directory packaged in the file named help.war. User documentation is provided in English (ENG). The documentation material is divided into the following subdirectories underneath the language directory:

- C1: Oracle Utilities Customer Care and Billing Administration and Business Process Guides
- F1: Oracle Utilities Application Framework Administration and Business Process Guides

## Installing Stand-Alone Online Help

You can also use the Oracle Utilities Customer Care and Billing online help in stand-alone mode (that is, you do not have to launch it from the Oracle Utilities Customer Care and Billing application or access it on the application server).

To install the Oracle Utilities Customer Care and Billing help for stand-alone operation, copy the help.war from the Oracle Utilities Customer Care and Billing server (environment) or from the Oracle Utilities Customer Care and Billing installation package to the server or machine on which you want to access the help. If you want to copy the file from any installed Oracle Utilities Customer Care and Billing environment, you can locate the file in the \$SPLEBASE/splapp/applications directory on the server.

Unzip the help.war file to any directory on your machine. To launch the Oracle Utilities Customer Care and Billing help in stand-alone mode, open the SPLHelp.html file (located inside the language directory that you wish to use).

**Note.** Do not change the subdirectory names. The documents use relative path names to link to other documents. Changing the subdirectory names will result in broken links.

## Customizing Help for Stand-Alone Operation

You can customize the SPLHelp.html file to open to the file and topic that you most frequently use. To do so, edit the SPLHelp.html file and change the DEFAULT\_BOOKMARK to the desired location. The default DEFAULT\_BOOKMARK is 'helpHome.html'.

## Installing Stand-Alone Help Under Web Server

You can also install Oracle Utilities Customer Care and Billing online help as a stand-alone web application. Use any Web Application server like WebLogic or WebSphere. Configure the configuration file for your web application server to use web application help.

For example,

- For WebLogic, configure config.xml file for deployed application Name="help" with URI="help.war" and set WebServer DefaultWebApp="help"
- For WebSphere, configure application.xml with module id="WebModule\_help" and <web-uri>help.war</web-uri>

Access the documentation from the browser by the following URL :  
 http://<host name>:<port name>/SPL/<Lang>/SPLHelp.html, where  
 <hostname>:<portname> is the URL of the web server, <Lang> is the name of the language directory, for example, ENG.



**Note:** Stand-alone online help files are not automatically updated when changes are made to the help files on the application server. You will have to re-install the stand-alone online help files.

## Integrating Customer Modifications into This Release

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

## Operating the Application

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

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

## Installing Service Packs and Patches

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

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

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

# Chapter 9

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## Additional Tasks

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

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

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## Customizing Configuration Files

If you wish to make customer modifications to various configuration files, create a ‘CM copy’ of the template file or user exit instead. This preserves your changes whenever initialSetup is executed; otherwise, your changes to the delivered template files will be lost if it is patched in the future. Use the following procedure:

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

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

Unix:

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

Windows:

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

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

## Integrating Existing Customer Modifications

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

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

## Generating the Application Viewer

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

To generate the additional items in the application viewer:

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

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

### Unix:

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

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

and

\$SPLENVIRON with the name you gave to the environment at installation time.

To initialize the environment enter:

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

For example:

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

### Windows:

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

In the below example you should replace the following variables:

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

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

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

For example:

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

3. Execute the following script to generate all information.

### UNIX:

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

### Windows:

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

4. Restart your application.

## Building Javadocs Indexes

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

Perform the following to rebuild the Javadoc indexes.

### Windows:

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

### UNIX:

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

## Configuring the Environment for Batch Processing

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

## Customizing the Logo

To replace the Oracle Utilities logo on the main menu with another image, put the new image <customer\_logo\_file>.gif file into the directory \$SPLEBASE/etc/conf/root/cm and create a new “External” Navigation Key called CM\_logoImage. To do that, run the Oracle Utilities application from the browser with the parameters: 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>.gif
```

### UNIX:

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

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

## Configuring Secure Sockets Layer (SSL)

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

Follow these steps to configure Secure Sockets Layer:

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

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

2. Store the identity and trust.

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

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

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

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

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

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

For additional information, refer to the following topics:

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

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

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

## Setting Up an Application Keystore

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

Note that this is different from the Oracle Utilities Application Framework (also called the system) keystore and the weblogic SSL keystores.

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

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

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

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

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

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

For example:

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

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

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

### For WebLogic Server:

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

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

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

For <keystore\_password>, use the same password entered in the keytool utility.

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

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

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

For <keystore\_password>, use the same password entered in the keytool utility.

**For WebSphere Server:**

- Create the password file.

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

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

- Add Keystore entries to spl.properties templates:

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

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

List of spl.properties templates (located in \${SPLEBASE}/templates/ folder):

- spl.properties.iws.template
  - spl.properties.template
  - spl.properties.service.template
  - spl.properties.XAIApp.template
  - spl.properties.standalone.template
3. Re-initialize the environment to propagate these changes by executing the initialSetup.sh/cmd.
  4. Restart the environment.

## Deploying Inbound WebServices (IWS)

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

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

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

For deploying IWS, please follow the steps below:

UNIX:

1. Enable the Web Services Functionality as shown below:
  - a. `cd $SPLEBASE/bin`
  - b. Execute `configureEnv.sh -a`

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

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

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

3. Set the classpath as shown below:

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



- Execute the following command:

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

Select y

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

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

#### WINDOWS:

- Enable the Web Services Functionality as shown below:

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

- Execute configureEnv.cmd -a

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

- Execute initialSetup.cmd as shown below:

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

- Set the classpath as shown below:

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

- Execute the following command:

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

Select y

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

```
iwsdeploy.cmd
```

## Domain Templates (Linux Weblogic 12.1.3.0+ only)

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

- Install and configure application stack (OUAF and Edge Product)

**Note:** Environment will need to be configuring to deploy in ear format.

- Review domain templates (Simple /Complex)
- Execute config.sh
- Configure domain
- Complete domain configuration

**Note:** Configure nodemanager.properties and setDomainEnv.sh

- Update SPLEBASE (ENVIRON.INI)

## Detailed Description

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

`$(SPLEBASE)/tools/domaintemplates`

- Oracle-Utilities-Simple-Linux-12.1.3.0.0.jar
- Oracle-Utilities-Complex-Linux-12.1.3.0.0.jar

The Simple Domain Template is for use with one machine not included in a weblogic clustered, this domain configuration is similar to current delivered embedded splapp domain, with the exception that there will be two weblogic servers ( utilities\_server1 and a "Admin Server").

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

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

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

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

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

- JTA Settings
- Node Manager Settings
- WebLogic Server

## Configure Node Manager Properties to allow SSL

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

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

- `CustomIdentityKeyStorePassPhrase=`
- `CustomIdentityPrivateKeyPassPhrase=`

Set these to the value "0uaf\_demo\_c3rt"

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

## Configure setDomainEnv.sh Script

Set the value of SPLEBASE with the proper value as per your configuration. Under `DOMAIN_HOME/bin` location, update the following file:

```
setDomainEnv.sh:SPLEBASE="${SPLEBASE}"
```

## Update SPLEBASE

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

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

=====

4. 02. Configuration Option: Domain Home Location

Current Value <ENTER>:

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

Enter Value: <Enter your domain home location>

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

## Database Patching

The database patching utility is delivered under SPLEBASE. Using this utility, you are able to create a standalone package to be able to install database patches on a separate server that has Java 7 installed on the server, or you are also able to 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 must create a jar file to copy onto a separate server where you would like to install the database patches.

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

1. Initialize a command shell:

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

### UNIX:

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

For example:

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

2. Execute the following script to generate all information.

**UNIX:**

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

**Windows:**

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

3. Transfer the package (db\_patch\_standalone.jar) created to the Windows /Unix box
4. Extract the contents of the archive file:

```
jar xvf db_patch_standalone.jar
```

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

**Script Overview**

```
createDBStandlone.sh[cmd] [-h] [-l]
```

- Creates the following file (db\_patch\_standalone.jar) the file contains the needed components to be able to patch database fixes on a different server.
- Packages bin directory
- Packages lib directory
- Packages config file

**Sample execution**

```
createDBStandlone.sh # complete setup
createDBStandlone.sh -h # display usage information
createDBStandlone.sh -l # output location for jar file
```

**Note:** When Option -l is not passed the default output location is SPLEBASE/tools/dbstandalone

**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
/ouaf/dbpatch/lib/commons-cli-1.1.jar
/ouaf/dbpatch/lib/commons-collections-3.2.1.jar
/ouaf/dbpatch/lib/ojdbc7-12.1.0.2.jar
/ouaf/dbpatch/lib/commons-io-1.3.2.jar
/ouaf/dbpatch/lib/log4j-1.2.17.jar
/ouaf/dbpatch/lib/spl-shared-4.3.0.0.1.jar
/ouaf/dbpatch/lib/commons-codec-1.6.jar
/ouaf/dbpatch/lib/spl-dbpatch-4.3.0.0.1.jar
/ouaf/dbpatch/config/
/ouaf/dbpatch/config/log4j.properties
/ouaf/dbpatch/bin/
/ouaf/dbpatch/bin/ouafDatabasePatch.cmd
/ouaf/dbpatch/bin/ouafDatabasePatch.sh
```

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_43001_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution – Prompting for a Password

```
./ouafDatabasePatch.sh -p "-t O -d
CISADM_Z1_12C_43001_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
c:\ouaf\dbpatch\lib\commons-cli-1.1.jar
c:\ouaf\dbpatch\lib\commons-collections-3.2.1.jar
c:\ouaf\dbpatch\lib\ojdbc7-12.1.0.2.jar
c:\ouaf\dbpatch\lib\commons-io-1.3.2.jar
c:\ouaf\dbpatch\lib\log4j-1.2.17.jar
c:\ouaf\dbpatch\lib\spl-shared-4.3.0.0.1.jar
```

```

c:\ouaf\dbpatch\lib\commons-codec-1.6.jar
c:\ouaf\dbpatch\lib\spl-dbpatch-4.3.0.0.1.jar
c:\ouaf\dbpatch\config\log4j.properties
c:\ouaf\dbpatch\bin\ouafDatabasePatch.cmd
c:\ouaf\dbpatch\bin\ouafDatabasePatch.sh

```

#### Windows Sample - Database Patch Application (ouafDatabasePatch.cmd)

- Sample Execution – Passing a Password

```

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

```

- Sample Execution – Prompting for a Password

```

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

```

- Sample Execution - passing in the tools bin location

```

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

```

#### Windows Sample Usage

```

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

```

# Appendix A

---

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## Application Framework Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer Care and Billing. The patches listed below are available as a convenience rollup, CCB-V2.5.0.0.0-FW-PREREQ-MultiPlatform.zip, which is included in the downloaded Media Pack. Please refer to the instructions contained inside the rollup directory for steps to install the patches. The rollup contains the following patches:

| Bug Fix  | Description                                                                     |
|----------|---------------------------------------------------------------------------------|
| 20454515 | COMBINEDCOLUMN ELEMENT ATTRIBUTE DOES NOT WORK IN FIREFOX 31 AND IE 11          |
| 20688675 | VARIOUS PROBLEMS WITH THE LIFECYCLE DISPLAY ZONE ON BO - SUMMARY                |
| 20738579 | IE11 - BILL SEGMENT TAB'S GRID DOES NOT ALIGN CORRECTLY WHEN USING IE11         |
| 20761239 | ADD OPTION FOR THE ORACHARTSERIESN ATTRIBUTE TO FORMAT AMOUNTS WITH CURRENCY    |
| 20761371 | ADD OPTION FOR THE ORACHART TO DISPLAY TEXT WHEN HOVERING ANYWHERE IN THE GRAPH |
| 20763788 | CANNOT DRAG/DROP TO BE LAST COLUMN IN THE TABLE.                                |
| 20801398 | MENU ITEMS NOT SUPRESSED CORRECTLY                                              |
| 20807868 | EXPAND / COLLAPSE IMAGE ON UI MAPS IS NOT RENDERED CORRECTLY                    |
| 20816459 | ACCOUNT BILL /PAYMENT HISTORY GRID - ROWS HAVE COLUMNS WITHOUT COLUMN HEADERS   |
| 20824359 | IPAD: MAINTENANCE UI - FIELD DISPLAY TOO WIDE TO FIT, CAUSE SCREEN ISSUES       |
| 20834632 | HIDEHIDDENFIELDS HIDES ELAT:HIDE="Y" TAGGED ELEMENTS IN XML AFTER XJS EXECUTION |
| 20848433 | UIHINT:SELECT WITH BS HAVING NO INPUTS DISPLAY EMPTY DROPDOWN                   |
| 20849165 | IE 11 : SCROLL BAR MISSING IN THE BO SUMMARY TAB                                |

---

|          |                                                                            |
|----------|----------------------------------------------------------------------------|
| 20854670 | FIX NPE IN OUTBOUND MESSAGE DATETIME CONVERSION IF NO XML_SOURCE ELEMENTS. |
| 20860472 | CHART YAXIS FORMATTING ISSUES FOR AMOUNT IN THOUSANDS                      |
| 20889451 | ISSUE IN WAR FILE CREATION (LARGE NUMBER OF FILES)                         |



# Appendix B

## Oracle Utilities Customer Care and Billing Fixes

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

| <b>Bug no</b> | <b>Description</b>                                                              |
|---------------|---------------------------------------------------------------------------------|
| 10178611      | 11685 - DEPRECATE C1-USG-STAT ALGO,ADD LOGIC TO UPDATE STATUS TO C1-CHK-DTSY    |
| 14212189      | BILL MAIN PAGE LAUNCHES WRONG SEARCH PAGE                                       |
| 14651046      | SYSTEM ALLOWS NEGATIVE OR ZERO SEQUENCE TO BE SAVED                             |
| 16314718      | FF - ISSUE ON CASE                                                              |
| 16314834      | FF - ISSUE ON CONTRACT OPTION                                                   |
| 16319996      | FF - ISSUE ON REBATE CLAIM                                                      |
| 16320525      | FF - ISSUES ON SERVICE PROVIDER SA RELATIONSHIP                                 |
| 16320876      | FF - ISSUE ON MULTI-CANCEL/REBILL                                               |
| 16320887      | FF - ISSUE ON SP/METER INSTALLATION                                             |
| 16326327      | FF - ISSUES IN CONTROL CENTRAL                                                  |
| 16393855      | FF - ENHANCEMENT                                                                |
| 18290808      | REMOVE CONFIG LAB MENUS, SUBSYSTEM, PROGRAMS AND PAGE DRIVERS FROM CCB          |
| 18684848      | FIX THE LENGTH OF TNDR-SOURCE-CD IN COPYBOOK CICTTSCS (TENDER SOURCE ID SEARCH) |
| 18935853      | SA START CONFIRM GET MORE BUTTON ERROR                                          |
| 18951223      | VARCHAR FIELD IN CIPCMPPL INCORRECT SET                                         |
| 19046349      | STOP CONFIRMATION,PREMISE SEARCH WHEN FIELD LEFT EMPTY, NO ERROR                |
| 19053346      | START CONFIRMATION,SP TYPE SEARCH WHEN FIELD LEFT EMPTY, NO ERROR               |
| 19170151      | EXTRA INFO DISPLAYED IN REPORT CI_CLLSUM                                        |

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| 19196846 | COPY OF 19194700 - CCB DOES NOT ALLOW DECIMAL IN PT RATIO                        |
| 19241221 | COPY OF 19231804 - DUPLICATE COMMUNICATION HISTORY RECORDS EXIST IN ZONE C1-COM  |
| 19315469 | COPY OF 18613431 - USER WITH READ ONLY ACCESS CAN CREATE NEW TENDER SOURCE RECOR |
| 19316622 | COPY OF 19315068 - SUBSTITUTION VALUE FOR HIGH STEP ON LAST LINE DISPLAYS ZERO   |
| 19320316 | CANNOT DELETE PENDING AND INACTIVE SERVICE CREDIT MEMBERSHIP EVEN IF NO RELATED  |
| 19326548 | COPY OF 19317311 - COLLECTION PROCESS ID FIELD MISSING - ERROR MESSAGE           |
| 19326575 | COPY OF 19318582 - ROUNDING ISSUE DUE TO PRORATION                               |
| 19375688 | COPY OF 19196611 - COLLECTIONS PROCESS STILL ACTIVE AFTER SA TRANSITIONED TO STO |
| 19375761 | COPY OF 19016925 - CALC RULE ELIGIBILITY USING PREMISE CHARACTERISTICS&#8207;    |
| 19378681 | COPY OF 19368658 - TD-XAIUP BATCH NOT CREATING TO DO MESSAGES WITH SEQ_NUM FIELD |
| 19379819 | [FW4.3.0.0.0 UPG]CCB CODE CHANGES TO MAKE IT WORKABLE WITH FW4.3 UIMODERNIZATION |
| 19388591 | COPY OF 19325412 - UPDATING EMAIL ADDRESS IN OUCSS DOES NOT UPDATE CCB F1_SVC_TA |
| 19432331 | COPY OF 19324173 - PUPL IS CREATING PAYMENTS TO A SUSPENSE SA NOT CONFIGURED ON  |
| 19446684 | COPY OF 19375965 - CCB LINKS THE SOD TO ALL THE SAS LINKED TO THE SP (EVEN PRIOR |
| 19451884 | COPY OF 19451664 - USER EXIT CODE INCORRECTLY PLACED INSIDE THE GENERATED CODE I |
| 19458433 | FIELD MISSING ERROR (BUT FIELD NAME NOT INDICATED) IS RAISED WHEN TRYING TO CREA |
| 19468151 | COPY OF 19223218 - BATCH JOB C1-USGDF PRODUCES ERROR MESSAGE WITHOUT ACCT/SA ID  |
| 19469957 | ELIGIBILITY TREE DOES NOT NAVIGATE TO THE CORRECT ELIGIBILITY CRITERIA           |
| 19473177 | [FW4.3.0.0.0 UPG] REGENERATE AFFECTED COBOL PROGRAMS DUE TO BUG 13409153         |
| 19491612 | DEPRECATION OF LEGACY BI EXTRACTS                                                |
| 19514915 | [FW4.3.0.0.0 UPG] CCB IMAGES UPDATE FOR FW4.3 UIMODERNIZATION                    |
| 19520037 | COPY OF 19259094 - SQ RULE BRINGS BACK INCORRECT CONSUMPTION HISTORY             |

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| 19526905 | COPY OF 19511382 - BILLING BATCH PROCESS RUNS FOR A LONG TIME +12 HOURS          |
| 19541529 | CANNOT SEARCH BY FULL PACKAGE OR CAMPAIGN DESCRIPTION                            |
| 19546474 | COPY OF 19277410 - PERFORMANCE OF CCB BATCH BALAPY                               |
| 19548747 | FIELDS ARE CLEARED WHEN USER MANUALLY INPUTS CIS DIVISION AND SA TYPE            |
| 19554621 | COPY OF 18765563 - "CURRENT BALANCE" GRAPH BAR ON THE FINANCIAL INFORMATION ZONE |
| 19582607 | COPY OF 19438211 - C1-ODET DOES NOT WORK PROPERLY.                               |
| 19587763 | COPY OF 19565227 - BATCH GLS JOB RUNNING SLOW                                    |
| 19587778 | COPY OF 18975702 - CREDIT NOTE ON BILL WITH PAYMENT ARRANGEMENT CAUSES WRONG CUR |
| 19590821 | COPY OF 19572327 - MATH FUNCTIONS IN THE MATH CALC RULE NOT WORKING              |
| 19590986 | COPY OF 18673526 - ERROR UPDATING WRITE OFF PROCESS CREATE DATE/TIME             |
| 19624329 | COPY OF 19618747 - SA START/STOP SCREEN PAGE: SA TYPE SEARCH NOT SORTED BY SA TY |
| 19626530 | [FW4.3.0.0.0 UPG] REGENRATE CI_NAV_OPT T-COPYBOOK TO REFLECT FWCHANGES           |
| 19632695 | [FW4.3.0.0.0 UPG] UPDATE OWNER_FLG FOR LOOKUP REF_CONST_OWNER PER BUG 17088223   |
| 19639705 | COPY OF 19604873 - IF STATEMENT IS MISSING END-IF IN CIPQPYEB                    |
| 19640276 | RENUMBER SERVICE ROUTE ISSUES                                                    |
| 19694027 | COPY OF 19682413 - WARNING MESSAGE WHEN COMPLETING FA                            |
| 19705623 | COPY OF 19589617 - ISSUECREDITNOTE() FUNCTION IN JAVA BATCH IS FAILING           |
| 19705634 | COPY OF 19596803 - BASE BILL PRINT EXTRACT ALGORITHM EXTRACTS BILL TWICE         |
| 19767744 | INCORRECT SUBPART OF END-DTTM TO GET THE TIME VALUE IN CIPTDAPR                  |
| 19771970 | COPY OF 19729878 - SYSTEM ERROR WHEN TRYING TO ADD DEFAULT COLUMN VALUE IN THE M |
| 19783363 | CIPQCASR- AFTER REGEN THE CODE FOR PROCESSING BO-DEFN-AREA WAS NOT COMMENTED OUT |
| 19784044 | COPY OF 19724127 - BILL SEGMENT ERROR WHEN INVOKING THE TOU MAPPING AND PRICING  |
| 19784077 | COPY OF 19585469 - CCB_TST_CANDC_PAYMENT ARRNG SA WENT TO PENDING STOP RATHER TH |

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| 19784276 | ERROR ENCOUNTERED WHEN TOU MAP TEMPLATE TYPE IS SET TO BLANK.                    |
| 19784744 | USER WAS ALLOWED TO ADD A RECORD WITH NO METER LOCATION                          |
| 19796353 | COPY OF 19627446 - POSTROUT PERFORMANCE IS DETERIORATING AFTER 30 MINUTES        |
| 19808329 | COPY OF 19627252 - DIFFERENT RESULTS FROM THE BILL AND BILL SEGMENT SCREENS FOR  |
| 19808500 | COPY OF 19446982 - BATCH C1-PEPL1 TENDER CONTROL ID                              |
| 19811051 | COPY OF 19650254 - SYSTEM ERROR WHEN CREATING METER READ (ON HI/LO CHECK)        |
| 19815614 | COPY OF 19722055 - CREATE CREDIT NOTE FOR A SPECIFIC BILL SEGMENT                |
| 19816988 | COPY OF 19795991 - BATCH BILLING DOES NOT WORK PROPERLY IF BILL CYCLE'S FREEZE A |
| 19835484 | INCORRECT EXTRA T COPYBOOK FIELD NAME IN SERVICEAGREEMENTCHARACTERISTIC_IMPL     |
| 19846798 | COPY OF 19706060 - DEFAULTTABLEAUDITOR_IMPL THROWS NULL POINTER ON CI_FA_CMPL_CT |
| 19847337 | COPY OF 19822384 - BILL ERROR ON OI ACCOUNT                                      |
| 19866416 | COPY OF 19540865 - THREADPOOL COMMUNICATION DELAY (PROBABLE REMOTE GC) SERVICE P |
| 19866448 | COPY OF 19669799 - OUCSS RATE COMPARE TOO SLOW FOR 12 MONTHS                     |
| 19871577 | COPY OF 19682295 - CCB STATUS STUCK IN MOBILE USER ON SITE WHEN COMPLETE/IN-COMP |
| 19871609 | COPY OF 19647176 - WRITE OFF PROCESS ID FIELD MISSING - ERROR MESSAGE            |
| 19871623 | COPY OF 19649008 - UNABLE TO SELECT INCOMPLETE BILL SEGMENT FROM BILL-BILL SEGME |
| 19877954 | S-IB CURSORS WERE NOT CORRECTLY CLOSED IN CIPIPRDX                               |
| 19889800 | COPY OF 19776742 - SERVICE CYCLE AND SERVICE ROUTE INCORRECT FIELD LENGTH        |
| 19970760 | COPY OF 17410384 - ESTIMATION ISSUE - HI-LO FAILURE DUE TO INCORRECT LO_LIMIT AN |
| 19977510 | COPY OF 19970582 - GETMETERREADROUTEID METHOD OF BUSINESS ENTITY SERVICEPOINT IS |
| 19987686 | FIELD ACTIVITY PAGE AND SA TYPE PAGE NOT LOADING PROPERLY.                       |
| 20003845 | COPY OF 19767402 - MISSING INTELLIGENCE AROUND THE C1-REP FK REF                 |

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| 20020028 | CONTROL CENTRAL - DEBT BAR AND BILL GRAPHS MISSING                                |
| 20027506 | TODO ROLE DROPDOWN FIELD IS NOT GET POPULATED AFTER TODO TYPE IS SELECTED         |
| 20027718 | FF - CONSERVATION PROGRAM MAINTENANCE UI MAP IS NOT LOADED AFTER PRESSING EDIT    |
| 20031818 | FF - PREMISE MANAGEMENT PAGE ISSUES                                               |
| 20040703 | COPY OF 19636539 - LOAN PAGE ERROR: UNABLE TO RETRIEVE INTEREST RATE WHEN USING   |
| 20041876 | SOME ERRORS ARE RAISED WHEN TRYING TO CALL C1-CUSTOMERMANTENANCEREQUEST VIA XAI   |
| 20048741 | SP SEARCH BY PARTIAL ADDRESS CAUSE SERVER ERROR                                   |
| 20054591 | COPY OF 18696860 - ILM - CHANGE BATCH CONTROL DESCRIPTIONS.                       |
| 20071260 | FF - CALC RULE IN EDIT MODE HANGS SYSTEM + V2 RATE UI ISSUES                      |
| 20109720 | COPY OF 20100751 - LATE PAYMENT CHARGE ADDED TO SA WITH CREDIT BALANCE            |
| 20109821 | COPY OF 20103849 - IN USAGE BATCH BILLING PROCESS DATE IS USED AS ACCOUNTING DAT  |
| 20141489 | COPY OF 20062219 - CONCURRENCY ERROR WHEN REJECTING ADJUSTMENT APPROVAL REQUEST   |
| 20142824 | WHEN RUNNING BATCH JOB CPCRRRETR THE BATCH RUN TREE IS ALWAYS STUCK IN IN-PROGRES |
| 20157639 | NULLPOINTEREXCEPTION IS ENCOUNTERED WHEN TRYING TO GENERATE A NEW DEVICE TEST SE  |
| 20185078 | COPY OF 18986443 - IN THE ARABIC SA PAGE, SA LEVEL BALANCES ARE NOT DISPLAYED     |
| 20185091 | COPY OF 18862004 - BILL PAGE ALIGNMENT ISSUES IN CCB 2.4.0.1 ARABIC               |
| 20185099 | COPY OF 19222629 - LANDLORD DESCRIPTION ON PREMISE PAGE DOESN'T APPEAR IN ARABIC  |
| 20192534 | COPY OF 19766059 - DIFFERENCES INTO GENERATING CLOSED BILL SEG FOR SA STOPPED OR  |
| 20194656 | COPY OF 19820733 - SERVICE ROUTE SEARCH BY CHAR TYPE DOES NOT RETURN CORRECT RES  |
| 20195407 | COPY OF 20064601 - IN CCB 2.4 TO DO ENTRY COPYBOOK IS NOT UPDATED WITH THE NEWL   |
| 20203932 | PROBLEM WITH TRANSITIONING CASES TO THE NEXT STATUS                               |
| 20213317 | COPY OF 19678616 - ERROR DUE TO THE CANCEL BUTTON IN THE POP-UP "ADD EVENT PAYME  |

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|----------|----------------------------------------------------------------------------------|
| 20217362 | COPY OF 19731349 - WHAT DATE RANGE IS USED TO DETERMINE THE VALID CONTRACT VALUE |
| 20225568 | NON CIS PMT ERROR ON CREDIT CARD AUTHORIZATION TENDER TYPE                       |
| 20258641 | BATCH C1-PNBAS ENDED WITH JAVA EXCEPTION ERROR                                   |
| 20293124 | COPY OF 19372249 - PREMISE ID, MTR CONFIG ID AND EFFECTIVE DT ON MTR PAGE ARE NO |
| 20297601 | COPY OF 19703904 - DESCRIPTION ALIGNMENT IN ARABIC VERSION IN FIELD ACTIVITY PAG |
| 20297631 | COPY OF 19953364 - FA UPLOAD STAGING COMPLETION ERROR - A METER READ MUST HAVE A |
| 20302033 | COPY OF 19727854 - SA TYPE CHAR COLL: ADDING A BLANK ENTRY ALLOWED BUT THEN UNAB |
| 20313056 | COPY OF 20312084 - CUSTOMER CONTACT MO AUDIT ALGORITHMS NOT EXECUTED DURING BATC |
| 20320560 | COPY OF 20318713 - PAY PLAN STATUS CHANGE HANDLER NOT INVOKED WHEN PPM IS RUN    |
| 20320912 | COPY OF 20320898 - CUSTOMER CLASS CONTROL ALGO NOT FOUND WHEN ACCT AND SA CIS DI |
| 20326003 | COPY OF 20306729 - C1-GENERATEBILLSEGMENTFREEZE NO LONGER WORKS IN 2.4           |
| 20327659 | PAY EVENT CONVERSION - CIPVPYEK - USES AN INCORRECT PARENT KEY SIZE              |
| 20355306 | V2.5.0.0.0 CONTRACT MANAGEMENT - RENEWAL DATE IS NOT AUTO POPULATED              |
| 20358399 | THE SYNC REQUEST INFORMATION HYPERLINK IN SYNC REQUEST MAINTENANCE PAGE IS NOT W |
| 20387650 | COPY OF 20377216 - C1FIELDACTIVITYMAINTENANCE REPEATED ELEMENTS                  |
| 20390483 | CUSTOMER INFO:UNABLE TO ADD CUSTOMER CONTACT VIA DASHBOARD QUICKADD              |
| 20403422 | COPY OF 20381697 - ADJUSTMENT IS GETTING FROZEN WHEN THE APPROVALS ARE STILL PEN |
| 20404621 | COPY OF 20265259 - BASE SERVICE CILCSVAP DOES NOT WORK CORRECTLY WHEN INVOKED IN |
| 20406692 | COPY OF 19905544 - CALC RULE ELIG CRIT FLD ALG NOT RAISING INSUFF DATA ERR WHEN  |
| 20411034 | COPY OF 20197557 - CCB RATE PRORATION ISSUE                                      |
| 20414968 | CANNOT NAVIGATE TO MDM USING SP CONTEXT MENU                                     |
| 20415422 | THE RELATED SYNC REQUESTS ZONE IS NOT DISPLAYING THE SYNC REQUEST INFORMATION CO |

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| 20427798 | ERROR MESSAGE "ERROR OCCURED IN POST SCRIPT." IS DISPLAYED IN SYNC REQUEST LOG T |
| 20445150 | ERROR MESSAGE IS DISPLAYED WHEN USING NAVIGATION OPTIONS C1SPMDM2GOTO AND C1SAMD |
| 20445173 | USAGE RESPONSE DETAILS SECTION OF USAGE MAINTENANCE PAGE IS DISPLAYED EVEN IF US |
| 20464513 | COPY OF 19609683 - SERVICE ROUTE SEARCH DOES NOT THROW ERROR EVEN IF FIELDS ARE  |
| 20473591 | HORIZONTAL SCROLL BAR ON DASHBOARD                                               |
| 20482965 | COPY OF 20281574 - CALC LINE FOR DEPOSIT NOT FLAGGED TO PRINT                    |
| 20493181 | COPY OF 20488803 - CCB-NMS: TAB KEY ISSUE ADDING OUTAGE CALL BY LOCATION TYPE IN |
| 20494618 | IE11 BROWSER ISSUES FOR FINANCIAL UI PAGES                                       |
| 20534938 | KEY GENERATION BATCHES DOES NOT GENERATE ONE BLANK ROW                           |
| 20551845 | CCB 25000 - SA - DATE FIELDS ARE EDITABLE EVEN IF THEY ARE DISABLED.             |
| 20573356 | EXCEPTION ERROR ENCOUNTERED WHEN LOADING A BD BILL SEGMENT WITH BD-PROC USAGE    |
| 20600257 | CLICKING ON EXTERNAL MESSAGE FROM MAIN MENU DOES NOT DO ANYTHING                 |
| 20603226 | COPY OF 20577247 - SERVICE PROVIDER CODE NOT DISPLAYED ON NOTIFICATION DOWNLOAD  |
| 20603808 | REBATE CLAIM ISSUE                                                               |
| 20612759 | MATHOVERFLOWEXCEPTION WAS ENCOUNTERED WHEN SAVING A METER READ                   |
| 20633559 | SELF SVC NOTIF: MISSING BATCH CONTROL WX-NOTIF IN CCB V2.5.0.0.0 ENVIRONMENTS    |
| 20642321 | SYSTEM ERROR ENCOUNTERED AFTER RUNNING POSTROUT BATCH JOB                        |
| 20668456 | RENUMBER SERVICE ROUTE SEQUENCES VALIDATION INCONSISTENCIES                      |
| 20683365 | FF - REPLACE THE VML FOR IE 8 IMPLEMENTATION OF THE GRAPH WITH ORACHART FUNCTION |
| 20698727 | DEVICE TEST SELECTION ERROR HANDLING ISSUE                                       |
| 20712814 | UNCLOSED CURSORS IN COBOL PROGRAMS                                               |
| 20726518 | SQL ERROR CODE OCCURED IN JOB STREAM CREATION SCHEDULE                           |
| 20733818 | DISABLED FIELDS CAN STILL BE EDITED                                              |
| 20739124 | ADDITIONAL SPACE ON ACCOUNT SAS FOR DEBT CLASS PAGE                              |

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|          |                                                                                 |
|----------|---------------------------------------------------------------------------------|
| 20754510 | CONVERSION OF INTERVAL BILLING PRICING CALC PAGE TO UI MAP FOR GRAPH            |
| 20756178 | UPDATE COBOL PROGRAM DOC AND POSSIBLY PAGE NAME                                 |
| 20760932 | BROKEN IMAGE ON QUOTE PAGE                                                      |
| 20777300 | COPY OF 20600635 - DEPOSIT RECOMMENDATION ALGORITHM DEPRECOM-MBA/CIPDRCAX ERROR |
| 20781737 | DISPLAY TEXT WHEN HOVERING ANYWHERE IN THE GRAPH                                |
| 20783239 | FA SEARCH (BY ADDRESS) GIVES QUERYITERATOR NOT CLOSED ERROR                     |
| 20816769 | ADDITIONAL SPACE ON PA PAGE                                                     |
| 20833824 | SERVER ERROR ON FO APPOINTMENT SEARCH AND FA UPLOAD STAGING SEARCH              |
| 20840517 | USE PAGE SERVICE TO FETCH DATA FOR MULTI-CANCEL/ REBILL GRAPH                   |
| 20850025 | ONLINE BILL DISPLAY:INVALID SEQUENCE NUM ERROR ENCOUNTERED                      |
| 20878967 | CONSERVATION PROGRAM GRAPHS NOT WORKING IN CCB BUILD 020 AFTER GRAPH PATCHES    |

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2001-12-12

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