# Oracle Utilities Customer To Meter

Installation Guide

Release 2.7.0.0.0

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Oracle Utilities Customer To Meter Installation Guide, Release 2.7.0.0.0

# Contents

# Preface

Welcome to the Oracle Utilities Customer To Meter Installation Guide.

This guide provides information about installing Oracle Utilities Customer To Meter and is intended for anyone interested in the installation process.



To complete the installation you should have:

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

## Related Documents

For more information, refer to these Oracle documents:

#### Installation Guides and Release Notes

- *Oracle Utilities Customer To Meter Release Notes*
- *Oracle Utilities Customer To Meter Quick Install Guide*
- *Oracle Utilities Customer To Meter Installation Guide*
- *Oracle Utilities Customer To Meter Database Administrator's Guide*
- *Oracle Utilities Customer To Meter Optional Products Installation Guide*
- *Oracle Utilities Customer To Meter Licensing Information User Manual*

#### Administrative and Business User Guides

- *Oracle Utilities Customer To Meter Administrative User Guide*
- *Oracle Utilities Customer To Meter Business User Guide*

**Supplemental Documents**

- *Oracle Utilities Customer To Meter Server Administration Guide*
- *Oracle Utilities Customer To Meter Security Guide*

# Updates to Documentation

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

# Conventions

The following text conventions are used in this document:

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

# Additional Resources

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

# Chapter 1

# Overview

This chapter provides a high-level overview of the Oracle Utilities Customer To Meter installation.

To install Oracle Utilities Customer To Meter:

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

# Chapter 2

# Application Architecture Overview

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

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

Refer to the *Oracle Utilities Customer To Meter 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 To Meter application. Note also that a desktop machine running Microsoft Windows and the Oracle client is required to perform some of the Oracle Utilities Customer To Meter 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 To Meter application. More specifically, the database tier contains the data server files and database executables that physically store the tables, indexes, and other database objects for your system.

# Chapter 3

# Supported Platforms and Hardware Requirements

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

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

# Software and Hardware Considerations

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

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

- On which hardware platform and operating system will Oracle Utilities Customer To Meter be deployed?
- Which web server product will Oracle Utilities Customer To Meter deploy on?
- Which database product will Oracle Utilities Customer To Meter deploy on?
- Do you plan to deploy multiple Oracle Utilities Customer To Meter instances on the same physical server?
- How do you plan to deploy Oracle Utilities Customer To Meter?
    - 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 To Meter 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**<br>16-bit Color |
| Recommended* | Pentium IV - 3.0+ GHz or any Core 2 Duo or any Athlon X2 | 2048 MB | 1280X1024*<br>32-bit Color |

* The recommended configuration improves client performance.

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

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

Refer to Supported Platforms to determine which web application servers can be used with the operating system that will be hosting this tier.

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

## Tier 3, Database Server: Software and Hardware Requirements

Refer to Supported Platforms for information about the supported database servers.

# Supported Platforms

The installation has been tested to operate on many operating system, application server, and database server combinations. For the software requirements for each of these combinations, refer to Chapter 5: Installing Application Server Prerequisite Software.

## Operating Systems and Application Servers

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

### Application Server Operating Systems

- Oracle Linux 7.x for x86_64
- Oracle Solaris 11.x for SPARC (64-bit)
- IBM AIX 7.2 TLx for POWER (64-bit)
- HP-UX 11.31 (64-bit)

### Prerequisite Application Server Software

- Oracle Database Client 12.2.0.1+
- Oracle Java SE Development Kit 1.8.0_131+ (Oracle platforms only)
- IBM 64-bit SDK for AIX 8.0.0.x (IBM platforms only)

- Hibernate ORM 4.1.0 and Hibernate 5.2.3 jars
- Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 64-bit

**Notes**

- Oracle Linux is 100% user space-compatible with Red Hat Enterprise Linux, therefore, OUAF is also supported on Red Hat Enterprise Linux.
- Refer to the *Oracle Utilities Application Framework Database Administrator's Guide* for the Oracle Database Server Requirements.

Refer to the *Product Support Matrix (Document ID 1454143.1)* on My Oracle Support to determine if support for newer versions of the listed products have been added.

Please note the following:

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

  **Example**: Oracle 12.2.0.1+ means that 12.2.0.1 and any higher 12.2.0.x versions of Oracle are supported.

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

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

**Windows Server**

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

**WebLogic Server**

- Oracle WebLogic Server (Fusion Middleware Infrastructure) Release 2 (12.2.1.3+) and any higher versions of Oracle are supported.
- Customers must download Oracle WebLogic Server from the Oracle Software Delivery Cloud.

**Oracle Database Server**

Prerequisite Database Server Software (on any vendor supported platform where x is vendor supported version):

- Oracle Database Server Enterprise Edition 12.1.0.
- Oracle Database Server Standard Edition 2 12.1.0.
- Oracle Database Server Enterprise Edition 12.2.0.x
- Oracle Database Server Standard Edition 2 12.2.0.x

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

Advanced Compression and Partitioning options, is strongly recommended in all other situations.

**Oracle VM Support**
This version of Oracle Utilities Customer To Meter is supported on Oracle VM Server for x86 for supported releases of Oracle Linux and Microsoft Windows operating systems.

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

# Application Server Memory Requirements

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

| Location | Size | Usage |
|---|---|---|
| Install Dir ("$SPLEBASE") Location | 10 GB recommended<br>5 GB minimum | This is the location where the application and Framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files.<br><br>**Note**: This does not include the size of the edge product. |
| Log Dir ("$SPLOUTPUT") Location | 4 GB recommended<br>2 GB minimum | This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected. |
| Location of the application web work files on the web servers | 5 GB recommended<br>2 GB minimum | This location is used by various web server vendors to expand the application. It should be considered when installing these products.<br>Refer to the individual web server documentation to determine the location of the temporary files. |
| Installation Temporary Area | 4 GB minimum | The application gets installed from this location. You need enough space to un-compress the files and install the application. |

| Location | Size | Usage |
|---|---|---|
| Oracle Data Area | 4 GB minimum | This location is where the Oracle database data files are stored. The size of this space should be based on the requirements of the production environment. For an initial or demo database install 4 GB should be sufficient. |

# Support for Software Patches and Upgrades

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

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

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

# Chapter 4

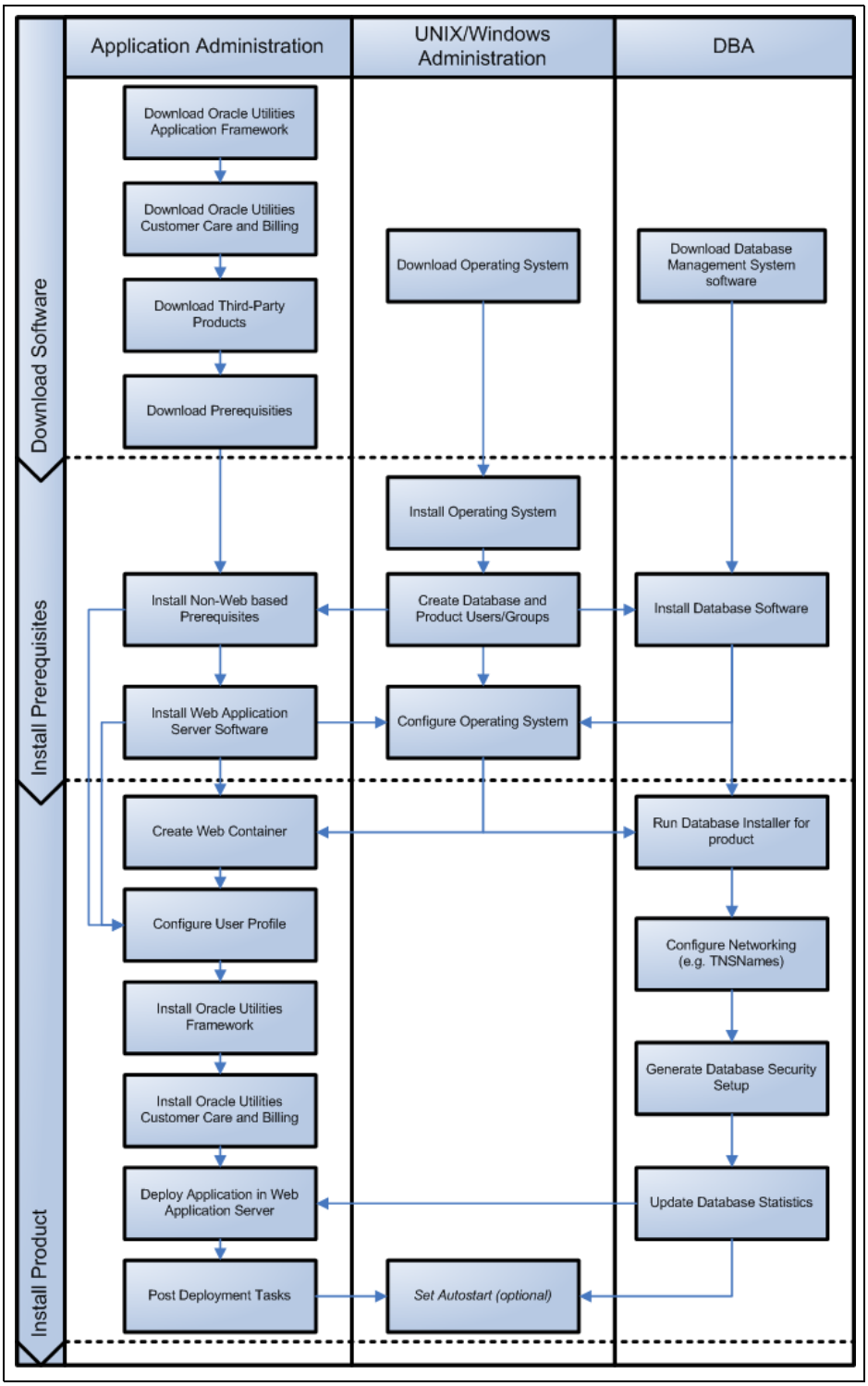
# Planning the Installation

This chapter provides information for planning an Oracle Utilities Customer To Meter installation, including:

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

# Installation and Configuration Overview

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



# Before You Install

Refer to My Oracle Support for up-to-date additional information on installing.

## WebLogic Native Installation

With Oracle Utilities Application Framework 4.3.0.6.0, a WebLogic native installation is required. Refer to the *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Framework (Doc ID 2413918.1)* whitepaper on My Oracle Support.

## Application Server Clustering

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

Additional information about WebLogic clustering can be found at http://docs.oracle.com/cd/E17904_01/web.1111/e13709/toc.htm.

## Directory Names

Directory cannot contain whitespace characters.

# Installation Checklist

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

1. Install the database as described in the *Oracle Utilities Customer To Meter Database Administrator's Guide*.
2. Create Group/User ID.
3. Install the prerequisite software (for complete details about installing and configuring the prerequisite third-party software for your specific platform, refer to Chapter 5: Installing Application Server Prerequisite Software):
    - Oracle client 12c
    - Java 8
    - Hibernate 4.1.0
4. Install optional software.
5. Install web server Oracle WebLogic 12.2.1.3+.

    **Note:** If you are upgrading and you are currently running Oracle Application Server please contact your Global Support Representative.
6. Verify that the software installed.
7. Set up environment variables.
8. Install Oracle Utilities Application Framework.
9. Install Oracle Utilities Application Framework prerequisite single fixes (if there are any).

10. Install Oracle Utilities Customer To Meter.
11. Deploy the Oracle Utilities Customer To Meter application.
12. Complete the post-installation tasks.
13. Complete the optional third-party product integration (such as web self service or reporting tools).

# Installation Menu Functionality Overview

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

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

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

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

Please also note the following:

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

## Installation Menu Functionality Details

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

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

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

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

ENVIRON.INI file to set the environment variables. Refer to the *Oracle Utilities Application Framework Server Administration Guide* for details about configuring these values.

Install the Oracle Client software specified in the Operating Systems and Application Servers section in Supported Platforms and Hardware Requirements prior to running any of the installation utilities.

The following prompt 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

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

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

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

# Installation and Configuration Worksheets

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

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

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

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

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

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Environment ID | ENVIRONMENT_ID | |
| Server Roles | SERVER_ROLES | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Oracle Client Home Directory | ORACLE_CLIENT_HOME | |
| Web Java Home Directory | JAVA_HOME | |
| Hibernate JAR Directory | HIBERNATE_JAR_DIR | |
| **ONS JAR Directory | ONS_JAR_DIR | |
| Web Application Server Home Directory | WEB_SERVER_HOME | |
| ***Additional JAR Directory | WLTHINT3CLIENT_JAR_DIR | |

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

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

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

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

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

## Menu Block 2: Keystore Options

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

<SPLEBASE>/ks/.ouaf_keystore

<SPLEBASE>/ks/.ouaf_storepass

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

> **Note**: Review the section on configuring the OUAF Keystore in the *Security Guide* for information on setting up the keystore properly.

Keystore options include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Import Keystore Directory | KS_IMPORT_KEYSTORE_FOLDER | |
| Store Type | KS_STORETYPE | |
| Alias | KS_ALIAS | |
| Alias Key Algorithm | KS_ALIAS_KEYALG | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Alias Key Size | KS_ALIAS_KEYSIZE | |
| HMAC Alias | KS_HMAC_ALIAS | |
| Padding | KS_PADDING | |
| Mode | KS_MODE | |

## Menu Block 50: Environment Installation Options

Environment installation options include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Environment Mount Point | SPLDIR | |
| Log File Mount Point | SPLDIROUT | |
| Environment Name | SPLENVIRON | |
| Installation Application Viewer Module | WEB_ ISAPPVIEWER | |
| Install Sample CM Source Code | CM_INSTALL_ SAMPLE | |

## Menu Block 1: Environment Description

The environment description menu option includes:

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

## Menu Block 2: [WebLogic] Business Application Server Configuration

WebLogic Business Application Server configuration options include:

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

## Menu Block 3: [WebLogic] Web Application Server Configuration

WebLogic Web Application Server configuration options include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Web Server Host | WEB_WLHOST | |
| Weblogic SSL Port Number | WEB_WLSSLPORT | |
| Weblogic Console Port Number | WLS_ADMIN_PORT | |
| Web Context Root | WEB_CONTEXT_ ROOT | |
| WebLogic JNDI User ID | WEB_WLSYSUSER | |
| WebLogic JNDI Password | WEB_WLSYSPASS | |
| WebLogic Server Name | WEB_WLS_ SVRNAME | |
| Web Server Application Name | WEB_APP | |
| Deploy Application Viewer Module | WEB_DEPLOY_ APPVIEWER | |
| Enable The Unsecured Health Check Service | WEB_ENABLE_ HEALTHCHECK | |
| MDB RunAs User ID | WEB_IWS_MDB_ RUNAS_USER | |
| Super User Ids | WEB_IWS_SUPER_ USERS | |

## Menu Block 4 - Database Configuration

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

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Application Server Database User ID | DBUSER | |
| Application Server Database Password | DBPASS | |
| MPL Database User ID | MPL_DBUSER | |
| MPL Database Password | MPL_DBPASS | |
| XAI Database User ID | XAI_DBUSER | |
| XAI Database Password | XAI_DBPASS | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Batch Database User ID | BATCH_DBUSER | |
| Batch Database Password | BATCH_DBPASS | |
| Web JDBC DataSource Name | JDBC_NAME | |
| Database Name | DBNAME | |
| Database Server | DBSERVER | |
| Database Port | DBPORT | |
| ONS Server Configuration | ONSCONFIG | |
| Database Override Connection String | DB_OVERRIDE_ CONNECTION | |
| Character Based Database | CHAR_BASED_DB | |
| Oracle Client Character Set NLS_LANG | NLS_LANG | |

## Menu Block 5 - General Configuration Options

The general configuration options include:

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

## Menu Block 6 - OUAF TrustStore Options

The OUAF truststore configuration is required for IWS.

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

## Menu Block 8 - OSB Configuration

The OSB configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| OSB Home | | |
| OSB Host Server | slc11cds.us.oracle.com | |
| OSB Port Number | | |
| OSB SSL Port Number | | |
| OSB Managed Server Port Number | | |
| OSB Managed Server SSL Port Number | | |
| JDBC URL for Database | | |
| OSB Service Table Schema Name | | |
| OSB Service Table Schema Password | | |
| OSB WebLogic User Name | | |
| OSB WebLogic User Password | | |
| OSB Weblogic User Password | | |
| Mount Point for OSB Files | /spl/sploutput/osb | |

## Menu Block 9 - SOA Configuration

The SOA configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SOA Home | | |
| SOA Host Server | slc11cds.us.oracle.com. | |
| SOA Port Number | | |
| SOA SSL Port Number | | |
| SOA Internal URL | | |
| SOA External URL | | |
| JDBC URL for SOA Database | | |
| SOA Service Table Schema Name | | |
| SOA Service Table Schema Password | | |
| SOA WebLogic User Name | | |
| SOA WebLogic User Password | | |
| Specify the Path for XAI/IWS Service | XAIApp/xaiservert | |

## Menu Block 10 - SOA Configuration Plan (MDF)

The SOA configuration plan (MDF) includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| MDF Bulk Request Callback URL | | |
| MDF Headend HTTP Connection Timeout | 50000 | |
| MDF Headend HTTP Read Timeout | 500000 | |
| MDF SOA Request Queue JNDI Name | queue/BulkRequestQueue | |
| MDF SOA Notify Queue JNDI Name | queue/BulkNotifyQueue | |
| MDF SOA Command Queue JNDI Name | queue/BulkCommandQueue | |
| SGG-NMS TestHarness Partition Name | SGG-NMS_Test | |

## Menu Block 11 - Configuration for DataRaker Integration

The DataRaker Integration configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| JNDI Name of Destination Queue to publish SGG payloads for DataRaker Integration Tool | DataRakerQueue | |
| Number of records (SGG Payloads) to accumulate | 100 | |
| Max file size for the accumulated (SGG Payloads) file in Kilobytes | 524288 | |
| Specify a time which, when exceeded, causes a new outgoing file to be created in seconds | 600 | |
| Polling frequency of Staging directory for new files in seconds | 60 | |
| Mount point/directory for the accumulated SGG payload file | /spl/sploutput/staging | |
| Mount Point/directory for the converted XML file to place for DataRaker | /spl/sploutput/int | |

## Menu Block 16 - SOA Configuration Plan (LG)

The SOA configuration plan (LG) includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| LG SOA Partition Name | LG | |
| LG SOA TestHarness Partition Name | LG_Test | |
| AMI Event Subscriber Output Path | /spl/sploutput/osb/lg-cim-event | |
| MR_Server endpoint URI | | |
| CD_Server endpoint URI | | |
| CIM_Server endpoint URI | | |
| MeteringServer endpoint URI | | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Security policy attached to outbound web service calls to a CIM interface | sgg/d3_cfs_cim_header_client_policy | |
| Security policy attached to inbound web service calls from a CIM interface | sgg/d3_cim_token_service_policy | |
| The name of the OWSM policy to use when SOA calls a head end system | oracle/ http_basic_auth_over_ssl_client_policy | |
| The name of the OWSM policy to use when SOA is called by a head end system | oracle/ http_basic_auth_over_ssl_service_policy | |

## Menu Block 17 - SOA Configuration Plan (NES)

The SOA configuration plan (NES) includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| NES endpoint URI | | |
| SOA partition to which the application is installed | Echelon | |
| Path to the NES EventManager web service on the head end system | CoreServices/EventManager.asmx | |
| Path to the NES GatewayManager web service | CoreServices/GatewayManager.asmx | |
| Path to the NES DeviceManager web service on the head end system | CoreServices/DeviceManager.asmx | |
| Path to the NES SettingManager web service on the head end system | CoreServices/SettingManager.asmx | |
| Path to the NES UserManager web service on the head end system | CoreServices/UserManager.asmx | |
| Name of the OWSM policy to use when SOA calls a head end system | oracle/ http_basic_auth_over_ssl_client_policy | |
| Name of the OWSM policy to use when SOA is called by a head end system | oracle/ http_basic_auth_over_ssl_service_policy | |

## Menu Block 18 - SOA Configuration Plan (Sensus)

The SOA configuration plan (Sensus) includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Sensus SOA TestHarness Partition Name | Sensus_Test | |
| Sensus SOA Partition Name | Sensus | |
| MR Server Endpoint URI | | |
| CD Server Endpoint URI | | |
| OD Server Endpoint URI | | |
| Headend Http Read Timeout | 500000 | |
| Headend Http Connection Timeout | 50000 | |
| The name of the OWSM policy to use when SOA calls a head end system | oracle/ http_basic_auth_over_ssl_client_policy | |
| The name of the OWSM policy to use when SOA is called by a head end system | oracle/ http_basic_auth_over_ssl_service_policy | |

## Menu Block 19 - SOA Configuration Plan (SSN)

The SOA configuration plan (Sensus) includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SSN SOA Partition Name | SSN | |
| SOA Weblogic User Name | | |
| SOA Weblogic User Password | | |
| SSN SOA Queue JNDI Name | queue/SSNODRQ | |
| SSN Headend DataAggregation Endpoint URI | | |
| The URL for the SSN 4.7 DataAggregation service (DataAggregation.asmx) | http://127.0.0.1/CoreServices/ DataAggregation.asmx | |
| The URL for the SSN 4.10 DataAggregation service | https://ssn.ssnsgs.net:3000/amm/ webservice/v2_1/DataAggregat... | |
| SSN Headend DeviceManager Endpoint URI | | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| The URL for the SSN 4.7 DeviceManager service (DeviceManager.asmx) | http://127.0.0.1/CoreServices/DeviceManager.asmx | |
| The URL for the SSN 4.10 DeviceManager service | https://ssn.ssnsgs.net:3000/amm/webservice/v2_1/DeviceManage... | |
| SSN Headend DeviceResults Endpoint URI | | |
| The URL for the SSN 4.7 DeviceResults service (DeviceResults.asmx) | http://127.0.0.1/CoreServices/DeviceResults.asmx | |
| The URL for the SSN 4.10 DeviceResults service | https://ssn.ssnsgs.net:3000/amm/webservice/v2_1/DeviceResult... | |
| SSN Headend JobManager Endpoint URI | | |
| The URL for the SSN 4.7 JobManager service (JobManager.asmx) | http://127.0.0.1/CoreServices/JobManager.asmx | |
| The URL for the SSN 4.10 JobManager service: | https://ssn.ssnsgs.net:3000/amm/webservice/v2_1/JobManagerPo... | |
| The name of the OWSM policy to use when SOA calls a head end system | oracle/http_basic_auth_over_ssl_client_policy | |
| The name of the OWSM policy to use when SOA is called by a head end system | oracle/http_basic_auth_over_ssl_service_policy | |

## Menu Block 20 - SSN JMS Source Destination Bridge Configuration

The SSN JMS Source Destination Bridge configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SSN Bridge Destination Name | SSNTestHarnessBridgeDestination | |
| SSN Bridge Destination Additional Classpath | | |
| SSN Bridge Destination Connection URL | | |
| SSN Bridge Destination Initial Context Factory | weblogic.jndi.WLInitialContextFactory | |
| SSN Bridge Connection Factory JNDI Name | jms/SSNTestHarnessConnectionFactory | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SSN Bridge Destination Queue JNDI Name | queue/SSNTestSSNODRQ | |
| SSN Destination Bridge Username | | |
| SSN Destination Bridge Password | | |

## Menu Block 21 - DG Reference Implementation SOA Configuration

The DG Reference Implementation SOA configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| DG SOA Partition Name | DG | |
| MR Server Endpoint URI | | |
| CD Server Endpoint URI | | |
| OD Server Endpoint URI | | |
| Headend Http Read Timeout | 500000 | |
| Headend Http Connection Timeout | 50000 | |
| DG SOA TestHarness Partition Name | DG_Test | |

## Menu Block 22 - SOA Configuration Plan (Itron Openway)

The SOA Configuration Plan (Itron Openway) configuration includes:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Itron SOA Partition Name | Itron | |
| Headend Http Read Timeout | 500000 | |
| Headend Http Connection Timeout | 50000 | |
| DataSubscriberService Output Path | | |
| ExceptionSubscriberService Output Path | | |
| Itron Headend DataService Endpoint URI | | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Itron Headend DiagnosticService Endpoint URI | | |
| Itron Headend UtilService Endpoint URI | | |
| Itron Headend ControlService Endpoint URI | | |
| Itron Headend ProvisioningService Endpoint URI | | |
| Itron Headend ProvisioningService370 Endpoint URI | | |
| Itron Headend ControlService370 Endpoint URI: | | |
| Itron SOA TestHarness Partition Name | Itron_Test | |
| The name of the OWSM policy to use when SOA calls a head end system | oracle/ http_basic_auth_over_ssl_client_policy | |
| The name of the OWSM policy to use when SOA is called by a head end system | oracle/ http_basic_auth_over_ssl_service_policy | |

## Advanced Menu Options

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

**Unix:**

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

**Windows**

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

### Menu Block 50 - WebLogic Advanced Environment Miscellaneous Configuration

WebLogic advanced environment miscellaneous configurations include:

| Menu Option | Name Used in Documentation | Customer Value Install |
|---|---|---|
| OUAF DBMS Scheduler User | OUAF_DBMS_SCHEDULER_USER | |

| Menu Option | Name Used in Documentation | Customer Value Install |
|---|---|---|
| Enter the location of the Application Server Profile Home | WAS_PROFILE_NAME_HOME | |
| Online JVM Batch Server Enabled | BATCHENABLED | |
| Online JVM Batch Number of Threads | BATCHTHREADS | |
| Online JVM Batch Scheduler Daemon Enabled | BATCHDAEMON | |
| Enable Batch Edit Functionality | BATCHEDIT_ ENABLED | |
| Batch Online Log Directory | BATCH_ONLINE_LOG_DIR | |
| JDBC Read Timeout | JDBC_TIMEOUT | |
| Enable JMS Global Flush for Batch | ENABLE_JMS_GLOBAL_FLUSH | |
| IWS deployment target | WLS_CLUSTER_NAME | |
| Web Admin Server Host | WEB_ADMIN_SERVER | |
| Split File Size in MB | TEMPSTORAGE_SPLITFILESIZE | |
| GIS Service Running on the same Web Server | GIS | |
| GIS Service URL | GIS_URL | |
| GIS WebLogic System User ID | GIS_WLSYSUSER | |
| GIS WebLogic System Password | GIS_WLSYSPASS | |
| Online Display Software Home | ONLINE_DISPLAY_HOME | |
| Max Queries To Hold In Cache Across All Threads | XQUERIES_TO_ CACHE | |
| Seconds Timeout Flush Cache Completely | XQUERY_CACHE_ FLUSH_TIMEOUT | |

## Menu Block 51 - WebLogic Advanced Environment Memory Configuration

WebLogic advanced environment memory configurations include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Global JVM Arguments | GLOBAL_JVMARGS | |
| Ant Min Heap Size | ANT_OPT_MIN | |
| Ant Max Heap Size | ANT_OPT_MAX | |
| Ant Additional Options | ANT_ADDITIONAL_OPT | |
| Thread Pool Worker Java Min Heap Size | BATCH_MEMORY_OPT_MIN | |
| Thread Pool Worker Java Max Heap Size | BATCH_MEMORY_OPT_MAX | |
| Thread Pool Worker Additional Options | BATCH_MEMORY_ADDITIONAL_OPT | |

## Menu Block 52 - Advanced Web Application Configuration

Advanced web application configurations include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Web Application Cache Settings | WEB_L2_CACHE_MODE | |
| Web Server Port Number | WEB_WLPORT | |
| CSRF Protection For REST Services | CSRF_PROTECTION | |
| OWSM Protection For REST Services | OWSM_PROTECTION_FOR_REST_SERVICES | |
| Domain Home Location | WLS_DOMAIN_HOME | |
| Batch Cluster URL | WEB_BATCH_CLUSTER_URL | |
| Strip HTML Comments | STRIP_HTML_COMMENTS | |
| Authentication Login Page Type | WEB_WLAUTHMETHOD | |
| Web Form Login Page | WEB_FORM_LOGIN_PAGE | |
| Web Form Login Error Page | WEB_FORM_LOGIN_ERROR_PAGE | |
| Application Viewer Form Login Page | WEB_APPVIEWER_FORM_LOGIN_PAGE | |
| Application Viewer Form Login Error Page | WEB_APPVIEWER_FORM_LOGIN_ERROR_PAGE | |

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

## Menu Block 54 - WebLogic Diagnostics

WebLogic diagnostic options include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Diagnostic Context Enabled | WLS_DIAGNOSTIC_CONTEXT_ENABLED | |

## Menu Block 55 - URI, File and URL Related Options

URI, File and URL Related Options include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Restriction URLs Enable | CLOUD_RESTRICTION_URLS_ENABLE | |
| Custom SQL Security | CUSTOM_SQL_SECURITY | |
| White List Full Path | CLOUD_WHITE_LIST_PATH | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Custom White List Full Path | CLOUD_CUSTOM_ WHITE_LIST_PATH | |
| Substitution Variable List File Location | CLOUD_SUBSTITUTION_VARI ABLE_LIST_FILE_LOCATION | |
| Directory For Variable F1_CMA_FILES | CLOUD_LOCATION_ F1_MIGR_ASSISTANT_FILES | |
| URI For Variable F1_OAUTH2_URI | CLOUD_LOCATION_F1_OAUT H2_URI | |
| URI for Variable F1_BASE_REST_URL | CLOUD_LOCATION_F1_BASE_ REST_URL | |
| Consolidated Logfile Full Path | CONSOLIDATED_LOG_FILE_P ATH | |
| Temporary File Location | TMP_FILE_LOCATION | |

## Menu Block 56 - Mobile Security Configuration

Mobile Security configurations include:

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

## Menu Block 60 - Advanced Configurations for OSB

The advanced configurations for OSB include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Enable OSB SSL Port | false | |
| OSB Trust Keystore Type | Demo | |
| OSB Trust Keystore File Type | JKS | |
| OSB Trust Keystore File | | |

## Menu Block 61 - Advanced Memory Configurations for SOA

The advanced memory configurations for SOA include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SOA Initial Heap Size | 1024 | |
| SOA Maximum Heap Size | 2048 | |
| SOA Minimum Perm Size | 512 | |
| SOA Maximum Perm Size | 1024 | |
| SOA Application Additional Options | | |
| The name of the OWSM policy to use when SOA calls another SOA service | oracle/ http_basic_auth_over_ssl_client_ policy | |
| The name of the OWSM policy to use when SOA is called by another SOA service | oracle/ http_basic_auth_over_ssl_service_ policy | |
| The name of the OWSM policy to use when SOA calls an OUAF service | oracle/ wss_http_token_over_ssl_client_ policy | |

## Menu Block 62 - Advanced Memory Configurations for OSB

The advanced memory configurations for OSB include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| OSB Initial Heap Size | 512 | |
| OSB Maximum Heap Size | 1024 | |
| OSB Minimum Perm Size | 512 | |

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| OSB Maximum Perm Size | 1024 | |
| OSB Application Additional Options | | |

## Menu Block 63 - Data Migration

The data migration configurations include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Enable Data Migration | FALSE | |
| Data Migration Database User | | |
| Data Migration Database Password | | |

## Menu Block 64 - Advanced Configurations for SOA

The advanced configurations for SOA include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| Enable SOA SSL Port | false | |
| SOA Trust Keystore Type | Demo | |
| SOA Trust Keystore File Type | JKS | |
| SOA Trust Keystore File | | |

## Menu Block 70 - SSN SOA TestHarness Configurations

The SSN SOA TestHarness configurations include:

| Menu Option | Name Used in Documentation | Customer Install Value |
|---|---|---|
| SSN TestHarness SOA Host Server | slc11cds.us.oracle.com | |
| SSN TestHarness SOA Port Number | 8920 | |
| SSN SOA TestHarness Partition Name | SSN_Test | |
| SSN SOA TestHarness Queue JNDI Name | queue/SSNTestSSNODRQ | |

# 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.

# AIX Application Server

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

## Supported Application Servers

| Operating System | Chipsets | Application Server |
|---|---|---|
| AIX 7.2 (64-bit) TL0 | POWER 64-bit | Oracle WebLogic (12.2.1.3+) 64-bit version |

## Web/Application Server Tier

### AIX 7.2 TL0 Operating System Running on Power5 and Power6 Architecture

#### UNIX Administrator Userid

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

| Description | Default Value | Customer Defined Value |
|---|---|---|
| C2M Administrator UserID | cissys | |
| C2M 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 exists 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 12.2.0.1+ Client - Runtime Option

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

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

## IBM Java Software Development Kit 8.0 (64-bit)

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

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

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

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

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

### Hibernate 4.1.0

You must install Hibernate 4.1.0 before installing Oracle Utilities Customer To Meter. For instructions to install Hibernate 4.1.0, refer to the Installing Hibernate 4.1.0 section.

### Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 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 12c Release 2 (12.2.1.3+) 64-bit.

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

# Oracle Linux 7.x and Red Hat Linux 7.x Application Server

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

## Supported Application Servers

| Operating System | Chipsets | Application Server |
|---|---|---|
| Oracle Linux 7.x (64-bit)<br>Red Hat Enterprise Linux 7.x (64-bit)) | x86_64 | Oracle WebLogic 12.2.1.3+ (64-bit) |

## Web/Application Server Tier

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

#### UNIX Administrator UserID

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

| Description | Default Value | Customer Defined Value |
|---|---|---|
| C2M Administrator UserID | cissys | |

| Description | Default Value | Customer Defined Value |
|---|---|---|
| C2M 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 the 'cisusr' user group.
2. Create the 'cissys' user. 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 exists 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 12.2.0.1+ Client - Runtime Option

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

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

### Oracle Java Development Kit 8.0 Update 131 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 To Meter. For instructions to install Hibernate 4.1.0, refer to the Installing Hibernate 4.1.0 section.

### Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 64-bit

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12.2.1.3+.

  **Note**: If you plan on using the Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to *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 12.2.1.3+ (64-bit) |

## 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 |
|---|---|---|
| C2M Administrator UserID | cissys | |
| C2M 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 exists 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. 2.0.1+ Client - Runtime Option

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

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

## Oracle Java Development Kit 8.0 Update 131 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 To Meter. For instructions to install Hibernate 4.1.0, refer to the Installing Hibernate 4.1.0 section.

### Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 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 12c Release 2 (12.2.1.3+) 64-bit.

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

# Windows 2012 Application Server

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

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

## Supported Application Servers

| Operating System | Chipsets | Application Server |
|---|---|---|
| Window Server 2012 | x86_64 | Oracle WebLogic 12.2.1.3+ (64-bit) |

## Web/Application Server Tier

### File and Directory Names Limitations

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

### Oracle Client 12.2.0.1+ - Runtime Option

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

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

### Oracle Java Development Kit 8.0 Update 131 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 To Meter. For installation instructions, refer to the Installing Hibernate 4.1.0 section.

### Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 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 12c Release 2 (12.2.1.3+) 64-bit.

  **Note**: If you plan on using the Oracle Utilities Application Framework in native mode within Oracle WebLogic (as opposed to embedded mode), refer to *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 12.2.1.3+ (64-bit) |

# Web/Application Server Tier

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

### UNIX Administrator UserID

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

| Description | Default Value | Customer Defined Value |
|---|---|---|
| C2M Administrator UserID | cissys | |
| C2M 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 exists 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 12.2.0.1+ Client - Runtime Option

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

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

## HP-Ux Java Development Kit 8.0 Update 131 or Later (64-Bit)

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

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

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

## Hibernate 4.1.0

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

## Oracle WebLogic Server 12c Release 2 (12.2.1.3+) 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 12c Release 2 (12.2.1.3+) 64-bit.

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

# Additional Prerequisite Software Information

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

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

## Setting Up and Using the Additional JAR Directory

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

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

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

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

# Special Note to Upgrade from a WebLogic 12.1.3.x Environment

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

1. Install Oracle WebLogic Server (Fusion Middleware Infrastructure) 12.2.1.x.
2. Install Oracle Java SE Development Kit 1.8.0_131+ (if not installed yet).
3. Shutdown the application server environment.
4. Take a full backup of the application:

   ```
   $SPLEBASE
   ```

5. Set the environment:

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

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

   ```
   Execute: configureEnv.sh -i
   Update: “Web Java Home Directory” and “Web Application Server Home Directory”
   Type <P> to process (no need to rerun initialSetup.sh).
   ```

7. Set the environment again: splenviron.sh -e <ENV NAME>.
8. Upgrade the Oracle Utilities Application Framework to V4.3.0.6.0 using the installSP.sh script.

# Chapter 6

# Installing the Application Server Component of Oracle Utilities Application Framework

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

# 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 To Meter 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 To Meter 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 Chapter 3: Supported Platforms and Hardware Requirements).

# Pre-Installation Tasks

## Hardware and Software Version Prerequisites

Chapter 3: Supported Platforms and Hardware Requirements contains all of the available platforms that are required with this release of the product.

## Database Installation

Verify that the database has been installed and is operational. See *Oracle Utilities Customer To Meter 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 V4.3.0.6.0 is a decoupled system architecture involving a business service application tier and a web application tier. Typically both will run on the same server, but the design does allow each tier to be installed on separate servers.

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

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

## Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.3.0.6.0 installation file is delivered in jar format for both UNIX and Windows platforms.

If you are planning to install multiple Oracle Utilities Application Framework V4.3.0.6.0 environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

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

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework V4.3.0.6.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   **Note:** This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.6.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

   ```
   cd <TEMPDIR>

   jar -xvf FW-V4.3.0.6.0-MultiPlatform.jar
   ```

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

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

A sub-directory named "FW-V4.3.0.6.0-SP6" 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-V4.3.0.6.0-SP6 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-V4.3.0.6.0-SP6 directory.
4. Set the following path:

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

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

   **Unix:** `ksh ./install.sh`

   **Windows:** `install.cmd`
6. Follow the messages and instructions that are produced by the application installation utility. Use the completed worksheets in Chapter 4: Planning the Installation to assist you.

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

## Installation Process (Detailed Description)

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

   Log on as cissys (on UNIX) or as a user with Administrator privileges (on Windows).

2. Configure application server and third-party software.

   Complete all steps outlined in Chapter 5**:** Installing Application Server Prerequisite Software. You will need to obtain specific information for the install.

3. Change directory to the <*TEMPDIR*>/FW-V4.3.0.6.0-SP6 directory and start the application installation utility by executing the appropriate script:

   **Unix:** `ksh ./install.sh`

   **Windows:** `install.cmd`

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

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

5. Select menu item 2: Keystore Options.

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

6. Select menu item 50: Environment Installation Options.

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

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

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

7. Configure the environment parameters.

   - During this step you will configure environment parameters such as web server hosts and ports, database name, and user ID.

- The application installation utility shows default values for some configuration options.
- Use the completed Environment Configuration Worksheet to assist you.

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

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

  The application installation utility automatically executes the script initialSetup.sh (on UNIX) or initialSetup.cmd (on Windows), located in $SPLEBASE/bin (%SPLEBASE%\bin on Windows) directory. This script populates different application template configuration files with the new environment variables values and completes the rest of the installation steps.

8. Set up environment variables.

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

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

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

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

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

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

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

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

Refer to Chapter 4: Planning the Installation for settings and configuration.

# Detailed Description for Configuring the OUAF Keystore

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

## OUAF Keystore

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

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

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

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

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

### Determining Keystore in Use

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

```
<SPLEBASE>/ks/.ouaf_keystore

<SPLEBASE>/ks/.ouaf_storepass
```

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

### Configuring the Keystore Options

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

```
2. Keystore options
       Import Keystore Directory:
       Store Type: JCEKS
       Alias: ouaf.system
       Alias Key Algorithm: AES
       Alias Key Size: 128
```

```
HMAC Alias: ouaf.system.hmac
Padding: PKCS5Padding
Mode: CBC
```

### Importing an Existing Keystore

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

Follow these steps:

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

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

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

   You can use the –h option to obtain help.

### Upgrading from the Legacy Keystore

This process:

- Synchronizes the keystore to the database
- Regenerates the user hashes
- Re-encrypts any passwords (from the legacy-encrypted passwords) using the current keystore.
- Is used only when upgrading from a framework prior to version 4.2.0.2.0.

Follow these steps:

1. Run the following command:

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

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

### Forcing the Environment to Use the Current Keystore

This process will:

- Prompt for and encrypt application server-stored passwords
- Synchronize the keystore to the database
- Regenerate the user hashes

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

Follow these steps:

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

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

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

### Synchronizing the Keystore

This process will:

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

Follow these steps:

1. Run the following:

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

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

### Creating a New Keystore

This process will:

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

Follow these steps:

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

5. Run the following:

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

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

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

# Installing Hibernate 4.1.0

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

1. Create a Hibernate jar external depot:

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

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

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

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

4. Extract the contents of the archive file:

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

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

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

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

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

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

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

   ```
   unzip hibernate-search-5.5.4.Final-dist.zip
   ```

9. Copy the jboss-logging-3.3.0.Final.jar file to your Hibernate jar directory ($HIBERNATE_JAR_DIR).

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

# Chapter 7

# Installing Oracle Utilities Customer To Meter

**Important**! In this release, Oracle Utilities Operational Device Management is included as part of Oracle Utilities Customer To Meter for all customers. However, the existing customers can disable the Oracle Utilities Operational Device Management functionality.

This chapter provides instructions to install Oracle Utilities Customer To Meter, as well as enable/disable Oracle Utilities Operational Device Management.

# Prerequisites

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

- Oracle Utilities Application Framework V4.3.0.6.0

  Refer to Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework for instructions.

- Oracle Utilities Customer Care and Billing V2.7.0.0.0

# Installing Customer To Meter Components

The Oracle Utilities Customer to Meter installation includes:

- Installing Oracle Utilities Meter Data Management V2.2.0.3.0
- Installing Oracle Utilities Operational Device Management V2.2.0.2.0
- Installing Oracle Utilities Application Framework V4.3.0.6.0 Prerequisite Single Fixes
- Installing Oracle Utilities Customer To Meter V2.7.0.0.0

## Installing Oracle Utilities Meter Data Management V2.2.0.3.0

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

- Copying and Decompressing the Install Media
- Installing the Oracle Utilities Meter Data Management Application Component

To proceed with the Oracle Utilities Meter Data Management installation you need to be connected to the target Oracle Utilities Application Framework environment.

You must initialize the Oracle Utilities Application Framework environment. For detailed instructions, refer to the Preparing for the Installation section.

### Copying and Decompressing the Install Media

The Oracle Utilities Meter Data Management installation file is delivered in jar format for UNIX .

To copy and decompress the install media:

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

   The Oracle Utilities Meter Data Management is delivered as a separate installation package that is downloaded as part of Oracle Utilities Customer to Meter V2.7.0.0.0.

2. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Customer To Meter application

environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.

3. Copy the MDM-V2.2.0.3.0-MultiPlatform.jar file in the delivered package to a <TEMPDIR> on your host server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>
jar -xvf MDM-V2.2.0.3.0-MultiPlatform.jar
```

For UNIX and Windows platforms, a sub-directory named MDM.V2.2.0.3.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

## Installing the Oracle Utilities Meter Data Management Application Component

To install the Oracle Utilities Meter Data Management application component:

1. Log in to the application server host as Oracle Utilities Application Framework Administrator (default cissys).
2. Change directory:

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

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

3. Initialize the environment by running the appropriate command:

**UNIX**

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

**Windows**

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

4. Navigate to <TEMPDIR>/MDM.V2.2.0.3.0 directory.
5. Execute the install script:

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

**UNIX**

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

**Windows**

```
install.cmd
```

6. Choose option P to proceed with the installation.

**Note:** The rest of the menu items can be ignored if you are installing only MDM.

The Oracle Utilities Meter Data Management installation is complete if no errors occurred during the installation.

# Installing Oracle Utilities Operational Device Management V2.2.0.2.0

**Important**! Please note that the Oracle Utilities Operational Device Management installation is not different from that of Oracle Utilities Work and Asset Management installation. Installing Oracle Utilities Work and Asset Management will install Oracle Utilities Operational Device Management also.

In this release, Oracle Utilities Operational Device Management is included as part of Oracle Utilities Customer To Meter for all customers. However, the existing customers can disable the Oracle Utilities Operational Device Management functionality. Follow the manual post-installation steps to disable Oracle Utilities Operational Device Management inside the Oracle Utilities Customer To Meter stack. For instructions refer to Disabling or Enabling Oracle Utilities Operational Device Management inside Oracle Utilities Customer To Meter.

This section describes how to install the Oracle Utilities Work and Asset Management application component, including:

- Copying and Decompressing the Oracle Utilities Work and Asset Management Install Media
- Installing the Oracle Utilities Work and Asset Management Application Component

## Copying and Decompressing the Oracle Utilities Work and Asset Management Install Media

The Oracle Utilities Work and Asset Management installation file is delivered in jar format for both UNIX and Windows platforms.

To copy and decompress the install media:

1. Log in to the application server host as the administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Download the Oracle Utilities Work and Asset Management V2.2.0.2.0 Multiplatform zip file from Oracle Software Delivery Cloud.
3. Create a <TEMPDIR> directory on the host server, which is independent of any current or other working Oracle Utilities Work and Asset Management application environment.

   This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
4. Copy the WAM-V2.2.0.2.0-Multiplatform.jar file in the delivered package to a <TEMPDIR> on your host server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file.

   ```
   cd <TEMPDIR>
   jar -xvf WAM-V2.2.0.2.0-Multiplatform.jar
   ```

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

A sub-directory W1.V2.2.0.2.0 is created for both UNIX and Windows platforms. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application product.

## Installing the Oracle Utilities Work and Asset Management Application Component

Follow these steps to install the Oracle Utilities Work and Asset Management application component:

1. Log in to the application server host as the administrator user ID (default cissys).
2. Change the directory.

   ```
   cd <install_dir>
   ```

   where <install_dir> is the location where the Oracle Utilities Application Framework V4.3.0.6.0 base application component is installed.
3. Initialize the environment.

   **UNIX**

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

   **Windows**

   ```
   splenviron.cmd -e <ENV NAME>
   ```
4. Change to the <TEMPDIR>/W1.V2.2.0.2.0 directory where <install_dir> is the Oracle Utilities Work and Asset Management application component installation directory.

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

   **UNIX**

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

   **Windows**

   ```
   install.cmd
   ```
5. Initialize the environment.

   **UNIX**

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

   **Windows**

   ```
   splenviron.cmd -e <ENV NAME>
   ```
6. Generate the appviewer.

   **Note**: Before generating the appviewer, make sure that Oracle Utilities Operational Device Management is enabled or set to ON. This ensures that Data Dictionary and Javadocs are generated without errors.

   a. Change the directory.

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

where <install_dir> is Oracle Utilities Work and Asset Management application component installation directory.

b. Generate the appviewer.

**UNIX**

```
ksh ./genappvieweritems.sh
```

**Windows**

```
genappvieweritems.cmd
```

## Installing Oracle Utilities Application Framework V4.3.0.6.0 Prerequisite Single Fixes

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer To Meter.

The patches are available as a convenience roll-up inside the C2M-V2.7.0.0.0-FWPREREQ-MultiPlatform.zip file which is part of the downloaded media pack.

For a list of the patches included in this roll-up, refer to Appendix A: Application Framework Prerequisite Patches.

To install the application and database patches on top of Oracle Utilities Application Framework V4.3.0.6.0:

1. Copy the C2M-V27000-FW-PREREQ-MultiPlatform.jar file in the delivered package to a <TEMPDIR>.
2. Unjar the file.

   ```
   jar -xvf C2M-V26010-FW-PREREQ-MultiPlatform.jar
   ```

3. Initialize the Oracle Utilities Application Framework environment that you want to install the patch roll-up into:

   **UNIX**

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

   **Windows**

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

4. Install application patches.
   a. Navigate to the <temp location>/FW-V4.3.0.6.0-Rollup/Application folder.
   b. Execute the group installation script.

   **UNIX/Linux**

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

   **Windows**

   ```
   installSFgroup.cmd
   ```

# Installing Oracle Utilities Customer To Meter V2.7.0.0.0

This section describes how to install Oracle Utilities Customer to Meter, including:

- Copying and Decompressing the Install Media
- Installing the Oracle Utilities Customer To Meter Application Component

## Copying and Decompressing the Install Media

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

The Customer To Meter is delivered as a separate installation package that can be downloaded along with Oracle Utilities Customer To Meter V2.7.0.0.0.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Create a <TEMPDIR> directory on the application server, which is independent of any current or other working Oracle Utilities Customer To Meter application environment. This can be the same <TEMPDIR> used during the installation of the Oracle Utilities Application Framework.
3. Copy the C2M.V2.7.0.0.0-MultiPlatform.jar file in the delivered package to a <TEMPDIR> on your application server. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
4. Decompress the file:

   ```
   cd <TEMPDIR>
   jar -xvf C2M-V2.7.0.0.0-MultiPlatform.jar
   ```

   For UNIX platform, a sub-directory named C2M.V2.7.0.0.0 is created. The contents of the installation directory are identical for both platforms. The directory contains the install software for the application.

## Installing the Oracle Utilities Customer To Meter Application Component

This section outlines the steps to install Oracle Utilities Customer to Meter.

#### Preparing for the Installation

1. Log in as an Oracle Utilities Customer to Meter administrator (default cissys).
2. Initialize the Oracle Utilities Application Framework environment where the product should be installed.

   **UNIX**

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

   **Windows**

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

3. Stop the environment if running.

#### Installing the Application

1. Change to the <TEMPDIR>/C2M.V2.7.0.0.0 directory.
2. Execute the script:

   **UNIX**
   ```
   ksh ./install.sh
   ```

   **Windows**
   ```
   install.cmd
   ```

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

   The Configuration menu for the Oracle Utilities Customer to Meter application appears.
3. Choose option **P** to proceed with the installation (you need not modify anything).
4. Start up the environment.

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

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

   > **Note**: while starting the first time, log into the WebLogic console and provide system access to the 'cisusers' role. The WebLogic console application can be accessed through the following URL: http://<hostname>:<portname>/console.

# Disabling or Enabling Oracle Utilities Operational Device Management inside Oracle Utilities Customer To Meter

By default, Oracle Utilities Operational Device Management is enabled. It can be disabled or enabled manually.

**Important!** Before enabling or disabling Oracle Utilities Operational Device Management, make sure the Oracle Utilities Operational Device Management database is enabled or disabled. For instructions, refer to the *Oracle Utilities Customer To Meter Database Administrator's Guide*.

To disable Oracle Utilities Operational Device Management:

1. Execute a flush to clear the cache.
2. Clear the browser cache.
3. Restart the application.

To enable Oracle Utilities Operational Device Management:

1. Execute a flush to clear the cache.
2. Clear the browser cache.
3. Restart the application.

# Chapter 8

# Additional Tasks

This chapter describes tasks that should be completed after installing Oracle Utilities Customer To Meter, including:

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Integrating Existing Customer Modifications
- Generating the Application Viewer
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Deploying Inbound WebServices (IWS)
- Domain Templates
- Database Patching

# Importing Self-Signed Certificates

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

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

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

1. Start WebLogic.
2. Initialize a command shell and setup the environment.

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

   For example:

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

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

   For example:

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

3. Generate all information.

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

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

# Customizing Configuration Files

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

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

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

   **Unix**:
   ```
   $SPLEBASE/bin/initialSetup.sh
   ```

   **Windows**:
   ```
   %SPLEBASE%\bin\initialSetup.cmd
   ```

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

# Centralized Properties Customization

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

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

### cm_properties.ini examples

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

<PROPERTIES_FILE>:<PROPERTY_NAME>=<VALUE>

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

<PROPERTY_NAME>=<VALUE>

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

<PROPERTIES_FILE>:<PROPERTY_NAME>=[DELETE]

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

<PROPERTY_NAME>=[DELETE]

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

Template example: hibernate.service.properties.template

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

### ENVIRON.INI example

```
DBUSER=cisadm
```

### cm_properties.ini example

```
hibernate.service.properties.template:hibernate.user=clouduser
hibernate.password=cloudpwd
hibernate.iws.properties.template:hibernate.user=clouduser
```

```
hibernate.service.properties.template:hibernate.ucp.validate_conne
ction=[DELETE]
hibernate.service.properties.template:new.property=test
```

### hibernate.service.properties generated properties file result

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

### hibernate.iws.properties generated properties file result

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

# Integrating Existing Customer Modifications

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

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

# Generating the Application Viewer

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

> **Note**: Before generating the appviewer, make sure that Oracle Utilities Operational Device Management is enabled or set to ON. This ensures that Data Dictionary and Javadocs are generated without errors.

To generate the additional items in the application viewer:

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

**UNIX**

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

For example:

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

**Windows**

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

For example:

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

3. Execute the following script to generate all information.

**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.

To rebuild the Javadoc indexes:

**Windows**

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

**UNIX**

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

# Configuring the Environment for Batch Processing

Refer to the *Server Administration Guide* for information about configuring the environment for batch processing.

# Customizing the Logo

To replace the Oracle Utilities logo on the main menu with another image, put the new image <customer_logo_file>.png file into the directory $SPLEBASE/etc/conf/root/cm and create a new "External" Navigation Key called CM_logoImage.

To do that, run the Oracle Utilities application from the browser with the parameters: http://<hostname>:<port>/cis.jsp?utilities=true&tools=true. From the Admin menu,

select Navigation Key. Add the above Navigation Key with its corresponding URL Override path. The syntax for the URL path is:

**Windows**

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

**UNIX**

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

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

# 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 about migrating from XAI to IWS, 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.

To deploy IWS:

**UNIX**

1. Enable the Web Services Functionality.

   ```
   cd $SPLEBASE/bin
   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.

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

4. Run the following command:

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

   Select **y**.

5. Execute the below step in $SPLEBASE/bin. Make sure that the application server is up and running.

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

**Windows**

1. Enable the Web Services Functionality.

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

2. Execute configureEnv.cmd –a.

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

3. Execute initialSetup.cmd.

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

4. Set the classpath.

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

5. Execute the following command:

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

6. Execute the following command in %SPLEBASE%\bin. Make sure the application server is up and running.

   ```
   iwsdeploy.cmd
   ```

# Domain Templates

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

## Update Domain Home Location

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

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

==========

4. 02. Configuration Option: Domain Home Location

   Current Value <ENTER>:

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

Enter Value: <Enter your domain home location>

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

# Database Patching

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

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

To generate the jar file:

1. Initialize a command shell:

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

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

   In the following example, replace the variables:

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

   To initialize the environment enter:

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

   For example:

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

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

   In the below example you should replace the following variables:

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

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

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

For example:

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

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

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

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

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

3. Transfer the generated jar (db_patch_standalone.jar) to the Windows/Unix machine where you want to run the database patching utility.

4. Extract the contents of the archive file:

   ```
   jar xvf db_patch_standalone.jar
   ```

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

## Overview of Database Patching Application

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

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

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

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

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

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

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

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

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

**Unix Example**
The TOOLSBIN location would be set to /ouaf/dbpatch/bin

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

Unix Sample - Database Patch Application (ouafDatabasePatch.sh)

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

- Sample Execution – Passing a Password

```
./ouafDatabasePatch.sh -x ouafadm -p "-t O -d
CISADM_Z1_12C_43020_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution – Prompting for a Password

```
./ouafDatabasePatch.sh  -p "-t O -d
CISADM_Z1_12C_43020_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution - passing in the tools bin location

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

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

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

Windows Sample - Database Patch Application (ouafDatabasePatch.cmd)

- Sample Execution – Passing a Password

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

- Sample Execution – Prompting for a Password

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

- Sample Execution - passing 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:
```

# Chapter 9

# Upgrading Oracle Utilities Customer To Meter

This chapter provides the instructions to upgrade Oracle Utilities Customer To Meter, including:

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

# Upgrade Paths

The following upgrade paths are applicable to this release:

- From V2.6.0.0.0 to V2.7.0.0.0
- From V2.6.0.1.0 to V2.7.0.0.0

  **Note**: Before you can upgrade you must have a prior version installed. If not, follow the procedures described in Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework and Chapter 7: Installing Oracle Utilities Customer To Meter in this guide.

# Before You Upgrade

Review the list of operating system, application server, and database server combinations supported for this version of Oracle Utilities Customer To Meter in the Supported Platforms section in Chapter 3: Supported Platforms and Hardware Requirements.

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

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

# Upgrade Procedure

The upgrade installation procedure consists of:

- Upgrading the Database Component
- Upgrading the Application Component

## Upgrading the Database Component

Upgrading the Oracle Utilities Customer To Meter database component must be complete before you can upgrade the application component.

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

## Upgrading the Application Component

A successful upgrade consists of the following steps:

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

## Upgrading the Oracle Utilities Application Framework Application Component

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

- Copying and Decompressing Install Media for the Oracle Utilities Application Framework Application Component
- Setting Permissions for the cistab file in UNIX for the Oracle Utilities Application Framework Application Component
- Upgrading the Oracle Utilities Application Framework Application Component

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

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

Refer to the Copying and Decompressing Install Media section in Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework for instructions on copying and decompressing install media.

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

Refer to the Set Permissions for the cistab File in UNIX section in Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework for instructions.

### Upgrading the Oracle Utilities Application Framework Application Component

To upgrade the Oracle Utilities Application Framework application component:

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

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

   where <install_dir> is the location where the Oracle Utilities Application Framework V4.3.0.6.0 base application component is installed.
3. Initialize the environment by running the appropriate command:

   **UNIX**

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

   **Windows**

   ```
   splenviron.cmd -e <ENV NAME>
   ```
4. Change directory to the <TEMP_DIR>/FWV4.3.0.6.0-SP6 directory.

   **NOTE**: While installing Application Framework V4.3.0.6.0 from the previous environment to Oracle Utilities Customer To Meter V2.7.0.0.0 the install utility removes the existing environment and re-creates the environment. Take a backup before you proceed with installing Application Framework V4.3.0.6.0 to retain any configurations for future reference.

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

   **UNIX**
   ```
   ksh ./installSP.sh
   ```

   **Windows Server**
   ```
   installSP.cmd
   ```

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

### Upgrading the Oracle Utilities Customer Care and Billing Application Component

This section describes how to install the application component of Oracle Utilities Customer To Meter, including:

- Copying and Decompressing Install Media
- Upgrading the  Application Component
- Creating WebLogic Domain

#### Copying and Decompressing  Install Media

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

Refer to the Copying and Decompressing Install Media section in Chapter 6: Installing the Application Server Component of Oracle Utilities Application Framework for instructions on copying and decompressing install media.

#### Upgrading the  Application Component

Refer to the Installing the Application section in Chapter 7: Installing the Application Server Component of Oracle Utilities Customer Care and Billing for steps to upgrade the Oracle Utilities Customer Care and Billing application component.

#### Creating WebLogic Domain

With Oracle Utilities Application Framework V4.3.0.6.0 a WebLogic native installation is required. Refer to *Oracle WebLogic 12.2.1.x Configuration Guide for Oracle Utilities Application Framework (Doc ID 2413918.1)* on My Oracle Support for more information.

# Post-Upgrade Verifications

After you complete the upgrade, verify the following:

1. Verify installation logs created under decompressed installer location for any errors.
2. Confirm that the installation logs do not contain any errors.
3. Confirm that all the configurations are correct.

   Refer to the Installation and Configuration Worksheets section in Chapter 4: Planning the Installation for details.

4. Confirm that the database is ready.
5. Generate the Application Viewer.
6. Start the application server.

At this point, the installation is complete.

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

# Installing Service Packs and Patches

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

Between services packs, Oracle Utilities releases patches to fix individual bugs. For information about installing patches, refer to **Document ID 974985.1** on My Oracle Support.

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

# Appendix A

# Application Framework Prerequisite Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Customer To Meter. The patches listed below are available as a convenience roll-up, C2M-V2.7.0.0.0-FW-PREREQ-MultiPlatform.zip, which is included in the downloaded Media Pack.

Refer to the instructions included in the roll-up directory for steps to install the patches. The roll-up contains the following patches:

| Bug Fix | Description |
|---|---|
| 28455763 | NEED TO INCREASE MAX_ROWS IN BO STATUS BATCH CONTROL CODE DESCRIPTION QUERY |

# Appendix B

## Oracle Utilities Customer To Meter Fixes

The following table lists the product fixes included in this release:

| Bug Number | Description |
|---|---|
| **Oracle Utilities Customer Care and Billing** | |
| 26140742 | START/STOP OVERRIDE PERSON CONTACT GRID SHOULD BEHAVE AS PERSON'S PERSON CONTACT |
| 27420230 | COPY OF 27214121 - C1-PERSONREAD BASE SERVICE HAS THE WRONG ACTION |
| 27432620 | COPY OF 27200008 - PREPAY BILL SEGMENTS SERVICE TASK GRAPH SQ'S ARE DOUBLED |
| 27440979 | COPY OF 27212414 - GL ONLY CALCULATED ADJUSTMENT TYPE CALCULATED ADJUSTMENT AMT |
| 27441008 | COPY OF 26365982 - NEW RATE ENGINE INCLUDES THE SA/SP HOW TO USE FLAG (SP) EVEN |
| 27445614 | COPY OF 27118220 - RENUMBER SERVICE ROUTE SEQUENCES TRANSACTION ISSUES |
| 27467818 | COPY OF 26370604 - DERIVATION RUNNING SLOW - SQL MODIFICATION POSSIBLITY |
| 27474458 | COPY OF 27441028 - ENCOUNTERED SYSTEM ERROR WHILE CREATING THE BILL SEGMENTS |
| 27479056 | COPY OF 27335495 - CONTROL CENTRAL - SP LINK NOT WORKING IN PREMISE TREE |
| 27496393 | COPY OF 27111141 - WX-NOTIF PERFORMANCE: FOR EACH RECORD HERE, 1,2,3 INFO STATEM |
| 27503207 | COPY OF 27396876 - 2.6 - SERVICE POINT IS NOT DIRECTLY ACCESSED BY CONTEXT MENU |
| 27503309 | COPY OF 26885276 - DYNAMIC OPTION EVENT SYNC IS FAILING AFTER ENCOUNTERING DATE- |
| 27504091 | RETRIEVE DEFAULT BUDGET/DEPOSIT AMOUNT FROM SA TYPE CHARACTERISTICS |

| Bug Number | Description |
|---|---|
| 27504363 | INCORRECT COLUMN HEADERS ON NOTIF TYPE MAINT FOR INDIVIDUAL PUSH NOTIF TYPES |
| 27511675 | COPY OF BUG 27018883 - NO COBOL WRAPPER CLASS FOR ALGORITHM SPOT 'COCN' COLLECTI |
| 27518019 | COPY OF 26586625 - PAYMENT PORTAL FAILED INVOKING STEP : INVOKEBS 'C1-CALCULATEL |
| 27520525 | COPY OF 27354383 - SERVICES WITH ITEMS AND NO USAGE ERRORS |
| 27535420 | COPY OF 27064265 - CCB ALL_SERVICES_READ USER GROUP PROVIDES ABILITY OF APPLY TO |
| 27535436 | COPY OF 27210586 - INCORRECT CHAR VALUE USED WHILE BILLING |
| 27581029 | COPY OF 26648878 - PAY PLAN NOT SHOWING DECIMALS WITHOUT SCROLLING |
| 27581055 | COPY OF 27462591 - CONTROL CENTRAL SEARCH NOT SHOWING CORRECT RESULTS |
| 27582248 | COPY OF BUG 27483484 - MATHOVERFLOWEXCEPTION-NUMERIC OVERFLOW IN PROGRAM CIPMERC |
| 27582258 | COPY OF BUG 27410091 - WHEN PAYMENT MADE AFTER SA END DT BUT PRIOR TO WRITEOFF, |
| 27583184 | COPY OF 27565895 - UNABLE TO BILL CUSTOMER- USAGE DATE BREAK ISSUE |
| 27587846 | COPY OF 27592939 - ERROR IN JOB STREAM |
| 27587864 | COPY OF 27479111 - VAT/CCL - DE-MINIMIS - ISSUES |
| 27587868 | COPY OF 26371022 - C1-GETUSGSP ZONE GETS INCORRECT RESULTS |
| 27587891 | COPY OF 27098816 - BILL/PAYMENT TREE COLLAPSED, COULD NOT BE EXPANDED WHEN ACCOU |
| 27598252 | COPY OF 26997452 - ONCE A BILL IS RE-OPENED THE ARREARS DATE NO LONGER MATCHES T |
| 27605067 | COPY OF 27026291 - START OPTION IS APPLIED ON SA THOUGH ITS INACTIVE, WHEN THAT |
| 27609943 | COPY OF 27491423 - EDIROUT BILL EXTRACT IS NOT GENERATING ELEMENTS AS PER THE SE |
| 27616603 | COPY OF 26333558 - ERROR WHILE CALCULATING BUDGET FOR AN ACCOUNT |
| 27624468 | COPY OF 27077875 - STRING IS TOO LONG FOR MULTIPLE FIELDS |
| 27676048 | COPY OF 27132344 - CC&B BILL EXCEPTION MESSAGE IS BEING TRUNCATED |

| Bug Number | Description |
|---|---|
| 27682739 | COPY OF BUG 27380742 - CCB-2919 CHANGE FOR C1-BSYEX DID NOT INCLUDE BATCH PARAME |
| 27690053 | COPY OF 26976546 - C1-INPUS DOES NOT POPULATE PERSON CONTACT FOR SPECIFICALLY PH |
| 27705301 | COPY OF 27083091 - CCB HISTBILL EQ CONSUMPTION FOR FIRSTBILL |
| 27723371 | COPY OF 27108854 - TDCR-CHAR (CIPQTDUX) IS POPULATING THE CHARACTERISTICS FROM C |
| 27723878 | COPY OF 27302574 - LPC BASE ALGORITHM ISSUE BUG |
| 27746450 | COPY OF 26113269 - MISALIGNMENT ISSUE ON PREMISE INFORMATION |
| 27753571 | COPY OF 27410537 - UNABLE TO COMPLETE ORDER, ERROR 3, 76009 “CONTACT DETAIL CANN |
| 27754609 | COPY OF 27564121 - UPLOADED ADJUSTMENTS ARE NOT FROZEN WHEN THE OPTION IS FREEZE |
| 27811981 | COPY OF 27558832 - UPGRADE 2.6 - SAACT LAZYINITIALIZATIONEXCEPTION |
| 27819578 | COPY OF 27462744 - THE ZERO VALUE BILL SEGMENT CALCULATION LINE ENTRY IS MISSING |
| 27822168 | COPY OF 27247558 - {INFO}UNNECESSARY FIELDS MARKED REQUIRED IN C1CASEPHYSICAL BO |
| 27834595 | COPY OF 27675076 - IWS ISSUE: DECIMALS NOT ALLOWED FOR PAYMENT AMOUNT USING BS-C |
| 27841673 | COPY OF 27472151 - PAYMENT, MANUAL DISTRUBUTION: BILLED AND DELINQUENT AMOUNTS N |
| 27861061 | COPY OF 27716055 - EXECUTION OPTION OF “ONCE” NOT BEHAVING AS EXPECTED WHEN RATE |
| 27872794 | ITEM EQUIPMENT SEARCH BY BADGE NUMBER OR EQUIPMENT TYPE IS NOT WORKING |
| 27878454 | SUBSTITUTION VARIABLE %M (ITEM TYPE) IS NOT WORKING |
| 27892504 | COPY OF 27569058 - UTA - BASE OBJECTS FOR TOU BILL FACTOR VALUE |
| 27895723 | COPY OF 27586638 - WHEN USAGE BILLED IN BATCH, ACCOUNT'S BILL AFTER DATE NOT CHE |
| 27953734 | ACCESS VIOLATION ERROR - ACTION UPDATE/DELETE FOR ITEM TYPE SQ ESTIMATE VIA IWS |
| 28001835 | COPY OF 27959364 - ROUNDED OFF HAPPENS IN THE VALUE OF THE 6TH DECIMAL PLACE,WHI |
| 28012194 | COPY OF 27892042 - MATHOVERFLOWEXCEPTION ENCOUNTERED ON THE STATEMENT CONSTRUCT |

| Bug Number | Description |
|---|---|
| 28012207 | COPY OF 27844820 - MATHOVERFLOWEXCEPTION-NUMERIC OVERFLOW IN PROGRAM CIPMBIRN CA |
| 28034941 | COPY OF 26002627 - CCB ERROR ON BO C1-PREMISESOMACTIVITYOUTMSG - LIST HAS 2 REFE |
| 28050231 | COPY OF 27946501 - TOU MAPPING FUNCTION "MAXIMUM" IN MATH CALC RULE CAUSING SYST |
| 28078037 | COPY OF 27662764 - REQUEST FOR PATCH TO UPDATE CIPDMDCX TO SET APPLY EXCESS CRED |
| 28079000 | COPY OF 28034777 - BILL FACTOR NOT BEING RECOGNIZED BY MATH BUSINESS OBJECT |
| 28086591 | COPY OF 25944047 - 11800 - NEW CHARGE AND PAYMENT REQUEST ISSUE FOR MISSING SMS |
| 28088301 | COPY OF 27589928 - SERVER ERROR ENCOUNTERED WHEN DOING A NAME AND ADDRESS FUZZY |
| 28097141 | COPY OF 27664933 - TD-NCDEX JOB IS NOT CREATING NEW TO DO IF A COMPLETED TO DO E |
| 28102492 | COPY OF 28012662 - CALCULATE CCL CALC RULE ISSUE WHEN VALUE SOURCE IS BF WITH MU |
| 28109455 | COPY OF 26944925 - "NO KEY WAS GENERATED" FOR CM BATCH |
| 28124649 | COPY OF 27561056 - START SERVICE FOR A PERSON WITH TWO IDENTIFIERS |
| 28131113 | RECOMMENDED DEPOSIT ON AVERAGE BILL AMOUNT - INSUFFICIENT BILL HISTORY ISSUE |
| 28136042 | COPY OF 27594464 - MDM NEXT SCHEDULED READ DATE SA CHARACTERISTIC PREVENTE STOPP |
| 28145437 | ADJUSTMENT SEARCH BY ACCOUNT ID BS FOR SENTINEL |
| 28186801 | COPY OF 26083050 - FREEZING OF BILL SEGMENT <BILL SEGMENT ID> IS ALLOWED O |
| 28194936 | COPY OF 28034892 - BASE QUERY ERROR BECAUSE THE MAX OPEN CURSORS WERE REACHED: C |
| 28194941 | COPY OF 27813275 - START DATE AND END DATE IN SA RATE INFO EDITABLE EVEN IF SA |
| 28210556 | ISSUES ENCOUNTERED DURING NBB SA STOP |
| 28225221 | SERVER ERROR ENCOUNTERED WHEN NAVIGATING FROM CANCELLATION REQUEST TASK |
| 28250570 | COPY OF 26429209 - START AND END DATE FIELDS ARE NOT DISABLE EVEN AFTER USING FE |
| 28294076 | CIS DIVISION - EXISTING DISPLAY AND MAINTENANCE MAP ISSUES |

| Bug Number | Description |
|---|---|
| 28300491 | COPY OF 27891867 - A VALUE FOR OPTION TYPE PRE-PROCESSING SERVICE SCRIPT MUST BE |
| 28331180 | COPY OF 28275057 - AUTOMATIC PAYMENT FILE EXTRACT (C1-TAPEX) ISSUE |
| 28344951 | COPY OF 27866449 - BILL SQ DETAILS 6 DIGIT LIMITATION |
| 28345122 | COPY OF 28043116 - CCB_RATES PRE & POST PROCESSING RULES STILL BROKEN AFTER APPL |
| 28367519 | COPY OF 28022740 - NO COBOL WRAPPER CLASS FOR ALGORITHM SPOT 'PSEG' FTCREATIONAL |
| 28367532 | COPY OF 27881885 - NO COBOL WRAPPER CLASS FOR ALGORITHM SPOT 'ADJT' FTCREATIONAL |
| 28367563 | COPY OF 27845474 - NO COBOL WRAPPER CLASS FOR ALGORITHM SPOT 'BSBF' FTCREATIONAL |
| 28412252 | COPY OF 28411937 - THIRD PARTY AUTO PAY SETUP ISSUE (UPDATE AND CANCEL ACTION) |
| 28427641 | COPY OF 27673610 - CCB: MENU ITEMS STILL SHOWING EVEN IF APP SERVICES IS NOT INC |
| 28433491 | COPY OF 25561792 - SQ RULES ARE NOT CARRIED OVER TO THE NEXT BILL SEGMENT IN CC& |
| 28447688 | COPY OF 27854496 - CC&B 2.6.0.1 GENERATING BAD SQL FOR SERVICE AGREEMENT BY PREM |
| 28453161 | COPY OF 28224932 - CUS CONTACT NOT AUTO POPULATING ACCT AND PREM INFO ON CREATIO |
| 28461578 | COPY OF 28310975 - ERROR “QUERY ITERATORS HAVE NOT BEEN CLOSED” IN OPENING BILLA |
| 28481189 | COPY OF 28130687 - FACT BATCH SQL 999999993 ERROR |
| 28481399 | COPY OF 28424238 - AT LEAST ONE PERSON CONTACT MUST BE SET AS PRIMARY (3, 76012) |
| 28495857 | COPY OF 28276443 - INPUT VALUE IS INVALID FOR GEO TYPE ZONE |
| **Oracle Utilities Meter Data Foundation** | |
| 28599577 | C2MO- BO CM-DUPLICATEIMDCHECK WITH OWNER FLAG OF D1 EXISTS |
| 28412406 | COPY OF BUG 28412341 - INFO: FIELD TASKS CREATED IN SOM SHOWS THE REMOVED DEVICE |
| 28378413 | COPY OF BUG 27777381 - INFO:PRORATED STOP START READ NOT CREATED WHEN STOP/START |
| 28366671 | MANUAL IMD CREATED FROM 360 VIEW ON PERFORM VEE GENERATES NPE |

| Bug Number | Description |
|---|---|
| 28285989 | COPY OF 27252447 - PEAK QUANTITY BILLED WRONG FOR MULTIPLE BI |
| 28285950 | COPY OF 28285947 - MDM - RETURNING DOUBLED SQS WHEN USING D2- |
| 28285935 | COPY OF 28285930 - BUSINESS SERVICE D1-SCALARCONSUMPTIONRETRI |
| 28285870 | COPY OF 28285863 - METER MULTIPLIER ISSUE |
| 28265317 | COPY OF 28265306 - DELETING IMD DOES NOT DELETE ASSOCIATED TO DO'S |
| 28048738 | COPY OF 2804873 - FA SYNC FAILS WITH ERROR END DATE MUST BE GREATER THAN OR EQU |
| 27935734 | COPY OF BUG 27651791 - INTERVAL SPIKE CHECK VEE RULE DOES NOT RAISE EXCEPTION |
| 27758434 | BUG 27758434 - COPY OF 27758412 - MDM SP SYNC OVERWRITES |
| 27701925 | COPY OF 27433623 - MDM: MENU ITEMS STILL SHOWING EVEN IF APP SERVICES IS NOT INC |
| 27614830 | PERFORMANCE: DROP IMD INDEX - D1T304S3 |
| 27607443 | COPY OF 27607424 - MDM UNABLE TO LOAD READS WHEN SUB-USAGE TRANSACTION IS IN ERR |
| 27602474 | COPY OF 27602468 - IMD SEEDER ERROR BEFORE DC EFFECTIVE DATE |
| 27602449 | COPY OF 27602442 - SUBSEQUENT CORRECTIONS ARE NOT GENERATED |
| 27602423 | COPY OF 27602415 - D1-SC-CNSUMP ALGORITHM DOES NOT ROUND DECIMALS BASED ON THE N |
| 27602400 | COPY OF 27593092 - PATCH 27195688 DOES NOT RESOLVE BUG 27195688 |
| 27599107 | COPY OF 27598275 - CAN'T SEARCH FOR COMMUNICATIONS |
| 27206065 | COPY OF 26269259 - SOM ORCH ACTIVITIES GO TO "VALIDATION ERROR" WHEN ROUTES ARE |
| **Oracle Utilities Meter Data Management** | |
| 28369976 | COPY OF BUG 27642777 - SCALAR ESTIMATION CAN EXCEED NUMBER OF DIALS CONFIGURED |
| 28348277 | COPY OF 27561593 - COPY OF 27376933 - MDM - RETURNING DOUBLED SQS WHEN USING D2- |
| 28314798 | COPY OF 26396721 - UT SUMMARYUSAGEPERIODS SECTION INCORRECT V |
| 28285997 | COPY OF 27252416 - PEAK QUANTITY BILLED WRONG FOR MULTIPLE B |

| Bug Number | Description |
|---|---|
| 28285979 | COPY OF 28285972 - IMD SAVE AS INCONSISTENT BEHAVIOR ON MULTI |
| 28285923 | COPY OF 27580583 - MISSING READS IF ESTIMATION IS TRIGGERED D |
| 28285912 | COPY OF 28285910 - SCHEMA VIOLATION DOWNSTREAM WITH SP EXTERN |
| 28285903 | COPY OF 28285897 - DST HOUR FROM 2-3 NOT CONVERTED TO LOCAL T |
| 28285886 | COPY OF 28285883 - THE <SPSLIST> DOES NOT CONTAIN NEW METER D |
| 28285854 | COPY OF 28285839 - METER MULTIPLIER ISSUE |
| 28285824 | COPY OF 28265290 - D2-MATH USAGE RULE CALCS FOR FIRST METER O |
| 27960223 | COPY OF BUG 27597788 - EXCEPTIONS ARE NOT SHOWN IN THE LOG FOR PRIOR ESTIMATION |
| 27889190 | COPY OF 27889166 - ON SETTING CONDITION FOR A MEASUREMENT TIME IS GETTING SHIFTE |
| 27765828 | COPY OF 27765817 -PERFORMANCE: UT HANDLE EXCEPTION ALGORITHM |
| **Oracle Utilities Work and Asset Management** | |
| 27169257 | ERROR WITH SERVICE HISTORY EDIT |
| 27335854 | COPY OF BUG 27161622 - ERROR WHEN ADDING A STOCK ITEM |
| 27403098 | PLEASE PROVIDE THE DOCUMENTATION FOR THE MOBILE INTEGRATION |
| 27424211 | UNABLE TO SEARCH WORK ACTIVITIES USING WORK CLASS AND CATEGORY |
| 27548531 | TITLE OF WINDOW IS INCORRECT |
| 27570247 | CUSTOM DISPLAY PROFILE WRONG DATE FORMAT |
| 27651812 | COPY OF BUG 27455756 - APPROVAL PROFILE - TO DO TYPE IS MISSING ERROR |
| 27722049 | ABLE TO UPDATE THE START DATE TO FUTURE DATE FOR A STARTED PROJECT |
| 27726916 | COPY: DUPLICATE WORK LIST ITEMS/QUERY RESULTS WHEN APPLICATION SERVICE EXISTS IN |
| 27843000 | COPY: MORE PROBLEMS WITH IMPORTING BUNDLES |
| 27864652 | COPY: UNABLE TO EXPAND THE EMPLOYEE SHIFTS ZONE AND ACTUALLY VIEW THE GREEN BOXE |

| Bug Number | Description |
|---|---|
| 27951325 | ERROR: SUM OF ALL GROUP WEIGHTS MUST BE EQUAL TO ONE (1) |
| 27965200 | ACCESS GROUP COMMON_GRP NOT ENTERED, BUT AT LEAST SEVERAL OBJECTS ARE ASSIGNED T |
| 27965973 | COPY: STOCK RETURN ROUNDING ERROR |
| 28032870 | COPY OF BUG 27788154 - USER ACCESS ISSUE |
| 28083000 | COPY: COST CENTER LOOKUP THROUGH WORK ACTIVITY TAKING LONG TIME |
| 28112423 | COPY: IMPORTING BUNDLE FOR QUESTION BUSINESS OBJECTS |
| 28124886 | COPY BUG OF 27560355 - PR INTEGRATION MESSAGE - INCORRECT BO |
| 28124945 | COPY BUG 27573082 - WAM-ERP REQUISITION: BLANKET EXTERNAL ID IS MISSING FROM OUT |
| 28125023 | COPY OF BUG 27744001 - WAM-ERP CONNECTOR: STOCK ITEM SYNC BO CUSTOM ELEMENT |
| 28125044 | COPY OF 27694291 - ERROR MESSAGE: W1-ERPINTRG NOT FOUND |
| 28280412 | COPY: DATA IS NOT SHOWING UP IN THE WAM APPLICATION WHEN USING INTEGRATION BO |
| 28280450 | COPY: INITIAL A PR FROM A BC SCREEN DOES NOT VALIDATE THE PR AMOUNT |
| 28280466 | COPY: PR LINE BO IS REQUIRED ERROR WHEN RUNNING BATCH REORDER REVIEW |
| 28331087 | COPY RECEIPT RETURNS - SYSTEM ALLOWS FOR ENTRY OF "NEGATIVE" QUANTITY |
| 28404654 | COPY SEARCH QUERY DOES NOT DISPLAY THE INACTIVE COST CENTERS |
| 28420951 | COPY: READ-ONLY USER ALLOWED TO EDIT AND DELETE EXISTING RESOURCE REQUIREMENTS |
| 28427419 | COPY: STOCK ISSUE: EXPENSE CODE ARE REVERSED |
| 28448448 | COPY: UNABLE TO ADD MORE THAN 1 COST CENTERS ON PURCHASE REQUISITION LINE |
| 28462302 | COPY: SPECIFIC RECORD ACTIONS ISSUES FOR READ-ONLY USER INTERACTIONS |
| **Oracle Utilities Customer To Meter** | |
| 27387607 | DEVICE TYPE DROP DOWN SHOULD SHOW DEVICE TYPES THAT BELONG TO THE SERVICE TYPE |
| 27475145 | COPY OF 27345879 - C2M - CONTROL CENTRAL - SP LINK NOT WORKING IN PREMISE TREE |

| Bug Number | Description |
|---|---|
| 27766267 | COPY OF 27540552 - ISSUE WHILE SENDING OUTBOUND MESSAGE TO MWM VIA SOM |
| 28037366 | D2-OWNED BO STATUS OPTION IN D2-USAGETRANSACTION SHOULD BE X1-OWNED |
| 28212782 | COPY OF 28177903 - SP SYNC REQUEST MOVING TO STATUS SYNCHRONIZED WITH ERROR |
| 28572884 | C2MO CONTRACT OPTION EVENT SYNC-EXTERNAL SYSTEM OR OUTBOUND MESSAGE TYPE MISSING |
| 28574039 | C2MO TOU MAP RELATIONSHIP TYPE IS STILL CLASSIC |
| 28586437 | COPY OF BUG 28134566 - C2M - CANNOT COMPLETE ACTIVITY |