Oracle Utilities Work and Asset Management

Installation Guide

Release 2.2.0

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Oracle Utilities Work and Asset Management Installation Guide for Release 2.2.0

Contents

Preface ..... **i**
Related Documents i
Updates to Documentation ii
Conventions ii
Acronyms ii
Additional Resources ii

Chapter 1

Installation Overview **1-1**
Product Overview 1-1
Installation Overview 1-3
Installation Types 1-4
Initial Installation 1-5
Upgrade Installation 1-5
Demo Installation 1-5
Package Contents 1-6
Documentation 1-6
Installation Packages 1-7
Readiness Checklist 1-7

Chapter 2

Supported Platforms and Hardware Requirements **2-1**
Operating Systems and Application Servers 2-1
Hardware Requirements 2-3
Application Server Memory Requirements 2-3
ESRI Integration Supported Versions 2-4
ArcGIS Server Version Compatibility 2-4
ArcGIS Desktop Version Compatibility 2-4
Support for Software Patches and Upgrades 2-5

Chapter 3

Planning the Installation **3-1**
Installation Considerations 3-1
Prerequisite Oracle Utilities Application Framework Patches 3-1
Embedded vs Native/Clustered Installation 3-2
Application Server Clustering 3-2
Native Mode in WebLogic 3-2
Directory Names 3-2

Prerequisite Software List ... 3-2
Prerequisite Software for Database Server ... 3-3
Prerequisite Software for Application Server ... 3-3
Web Browser Requirements ... 3-3
Installing Prerequisite Software ... 3-4
AIX 7.1 TL01 or AIX 7.2 TL0 Application Server ... 3-4
Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server ... 3-8
Oracle **Solaris 11 Application Server ... 3-12**

Chapter 4

Installing Oracle Utilities Work and Asset Management - Initial Installation ... 4-1
Initial Installation Procedure ... 4-1
Database Component Installation ... 4-1
Application Components Installation ... 4-2
Post Installation Verifications ... 4-12

Chapter 5

Installing Oracle Utilities Work and Asset Management - Demo Installation ... 5-1
Demo Installation Procedure ... 5-1
Database Component Installation ... 5-1
Application Component Installation ... 5-2
Post Installation Verifications ... 5-12

Chapter 6

Upgrading Oracle Utilities Work and Asset Management ... 6-1
Upgrade Paths ... 6-1
Before You Upgrade ... 6-1
Upgrade Procedure ... 6-2
Database Component Upgrade ... 6-2
Application Component Upgrade ... 6-2
Post Upgrade Verifications ... 6-12
Installing Service Packs and Patches ... 6-13

Chapter 7

Additional Tasks ... 7-1
Importing Self-Signed Certificates ... 7-1
Customizing Configuration Files ... 7-2
Customizing Centralized Properties ... 7-2
Integrating Existing Customer Modifications ... 7-4
Generating the Application Viewer ... 7-4
Building Javadocs Indexes ... 7-5
Configuring the Environment for Batch Processing ... 7-5
Customizing the Logo ... 7-5
Configuring Secure Sockets Layer (SSL) ... 7-6
Setting Up an Application Keystore ... 7-7
Deploying Inbound WebServices (IWS) ... 7-8
Domain Templates (Linux Weblogic 12.1.3.0+ and Unix 12.2.1only) ... 7-9
Database Patching ... 7-12

Chapter 8

Installing Optional Products 8-1
Oracle BI Publisher 8-1
Supported BI Publisher Versions 8-1
About Oracle BI Publisher Enterprise 8-1
Configuring the System to Enable Reports 8-2
Sample Reports Supplied with the Product 8-3
Esri ArcGIS Server 8-7
Supported Esri ArcGIS Server Versions 8-8
Installing the Esri ArcGIS Server 8-8
Verifying Prerequisites 8-8
Importing Feature Classes to Database 8-8
Deploying Map Packages 8-9

Appendix A

Installation Menu Functionality A-1
Installation Menu Functionality Details A-2
Encryption Methods A-2

Appendix B

Installation and Configuration Worksheets B-1
Menu Block 1: Environment ID, Roles, Third Party Software Configuration B-1
Menu Block 2: Keystore Options B-2
Menu Block 50: Environment Installation Options B-2
Menu Block 1: Environment Description B-3
Menu Block 2: [WebLogic] Business Application Server Configuration B-3
Menu Block 3: [WebLogic] Web Application Server Configuration B-4
Menu Block 4 - Database Configuration B-5
Menu Block 5 - General Configuration Options B-5
Menu Block 6 - SSL Certificate Keystore (Weblogic Only) B-6
Menu Block 7 - OUAF TrustStore Options B-7
Advanced Menu Options B-7
Menu Block 54 - WebLogic Diagnostics B-11
Menu Block 53 - OIM Configuration Settings B-11
Menu Block 55 - URI, File and URL Related Options B-12

Appendix C

Common Maintenance Activities C-1

Preface

This guide describes how to install Oracle Utilities Work and Asset Management v2.2.0 and is intended for anyone interested in the process of installing Oracle Utilities Work and Asset Management.

To complete installation you should have:

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

Related Documents

For more information on this release, refer to the following documents:

Installation Guides

- Oracle Utilities Work and Asset Management Release Notes
- Oracle Utilities Work and Asset Management Quick Install Guide
- Oracle Utilities Work and Asset Management Installation Guide
- Oracle Utilities Work and Asset Management Database Administrator (DBA) Guide
- Oracle Utilities Work and Asset Management Licensing Information User Manual

User Guides

- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Business User's Guide
- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Administrative User Guide

Supplemental Documents

- Oracle Utilities Work and Asset Management Server Administration Guide
- Oracle Utilities Work and Asset Management Security Guide

Updates to Documentation

Additional and updated information about 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. Documentation updates are also posted on the Oracle Technology Network documentation page as they become available (http://docs.oracle.com/cd/E72219_01/documentation.html).

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 on the screen, or text that you enter.

Acronyms

The following acronyms are used in this document:

- **ODM** – Oracle Utilities Operational Device Management
- **WAM** – Oracle Utilities Work and Asset Management
- **OUAF** – Oracle Utilities Application Framework

Additional Resources

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

Chapter 1

Installation Overview

This section provides an overview of the Oracle Utilities Work and Asset Management (WAM) product and installation process.

This section includes the following:

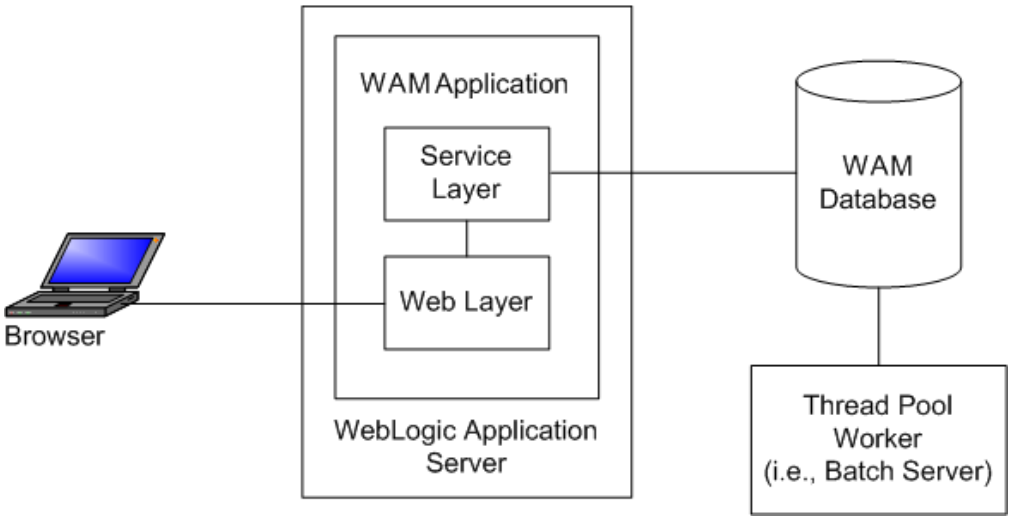
- Product Overview
- Installation Overview
- Installation Types
- Package Contents
- Readiness Checklist

Product Overview

Oracle Utilities Work and Asset Management is housed in the Oracle WebLogic J2EE Web Application Server. The system is comprised of two layers: web and service. The application is accessed by using a browser to connect to the web layer.

Oracle Utilities Work and Asset Management data is stored in the Oracle Database. For processing large amounts of data, the system provides a thread pool worker (batch server) which interacts with the same database.

The following figure provides an overview of the Oracle Utilities Work and Asset Management product:

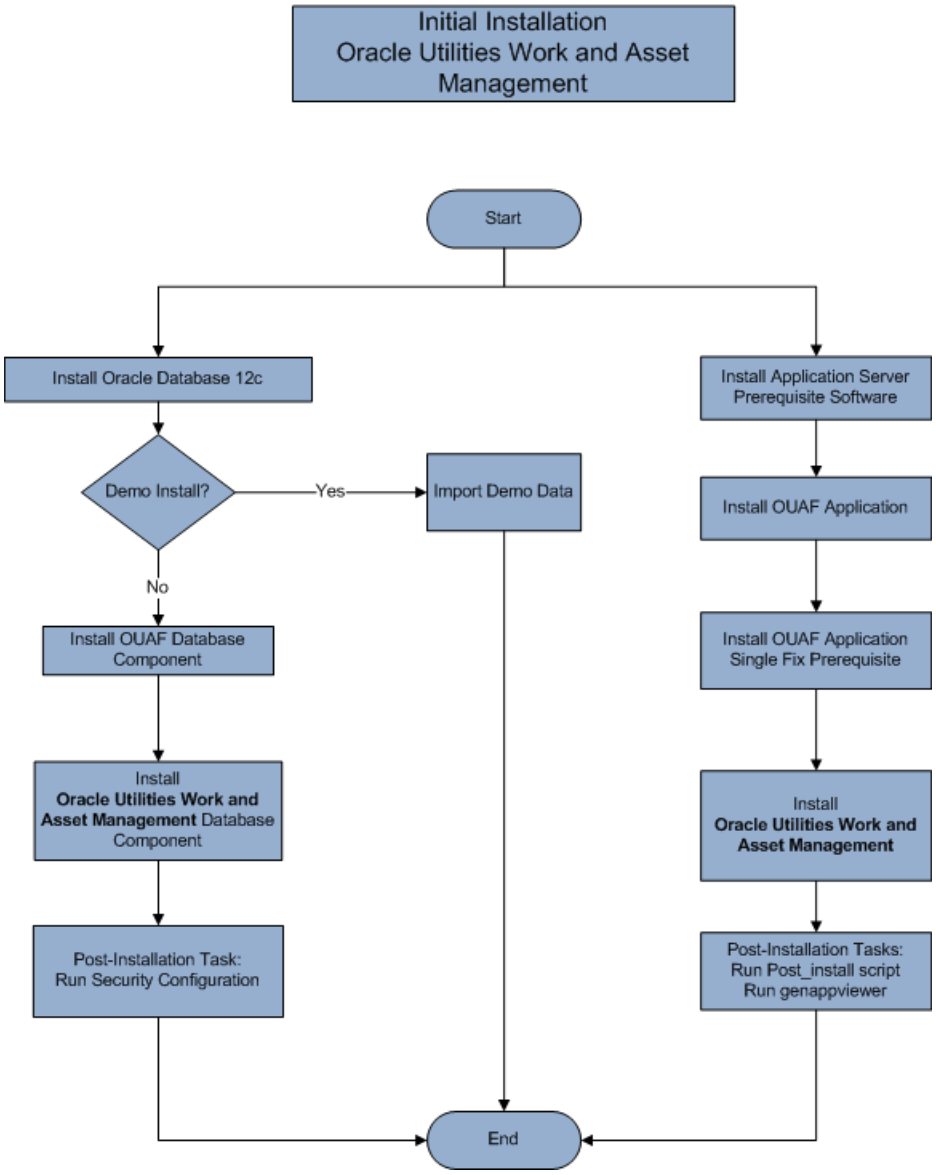


Refer to the *Business User's Guide* for information about the features and functionality in this release.

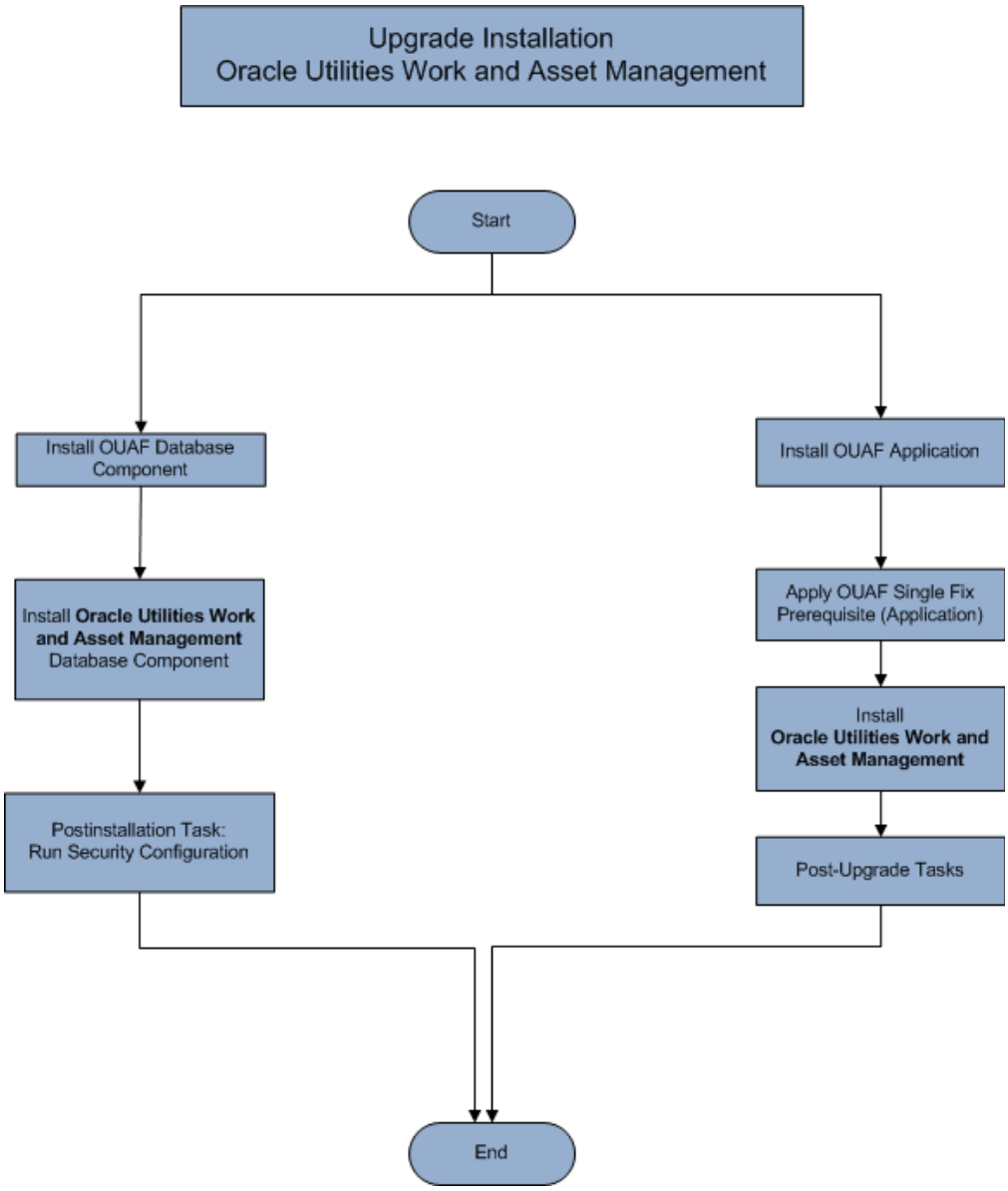
Installation Overview

Oracle Utilities Work and Asset Management consists of several components, all of which need to be installed for a successful installation. Certain prerequisite software may need to be installed before installing each of these components.

The following figure details the workflow for the initial and demo installation process.



The following figure details the workflow for the upgrade installation process.



Refer to the Prerequisite Software List for the list of prerequisite software.

Installation Types

The first step in the installation procedure is to determine the installation type that meets your business requirements. The following are the possible installation types:

- Initial Installation - Installing Oracle Utilities Work and Asset Management as a clean/new install - a base installation, typically used for a production environment
- Upgrade Installation - an upgrade installation from v2.1.1 to v2.2.0 or from v2.1.1.1 to v2.2.0.

- Demo Installation - a base installation with pre-populated demo data, typically used for demonstration or training purposes

The following sections describe these installation types in detail.

Initial Installation

This installation type is applicable when installing Oracle Utilities Work and Asset Management for the first time. Each of the following components should be installed during an initial installation:

- Database components:

  Refer to the "Initial Install" section of the *Oracle Utilities Work and Asset Management Database Administrator Guide* for more information.

- Application components:
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework single fix prerequisite rollup
  - Oracle Utilities Work and Asset Management application

For detailed steps on installing each of the above components, refer to the Installing Oracle Utilities Work and Asset Management - Initial Installation section.

Upgrade Installation

This installation type is applicable when upgrading Oracle Utilities Work and Asset Management from v2.1.1 to v2.2.0 or from v2.1.1.1 to v2.2.0. Each of the following components should be installed during an upgrade installation:

- Database components:

  Refer to the "Upgrade Install" section of the *Oracle Utilities Work and Asset Management Database Administrator Guide* for more information.

- Application components:
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework single fix prerequisite rollup
  - Oracle Utilities Work and Asset Management application

For detailed steps on installing each of the above components, refer to the Upgrading Oracle Utilities Work and Asset Management section.

Demo Installation

This installation type is applicable when installing a demo application of Oracle Utilities Work and Asset Management for demonstration or training purposes. For a demo install, you must install all of the following components:

- Demo Database components:

  Refer to the "Demo Install" section of the *Oracle Utilities Work and Asset Management Database Administrator Guide* for more information.

- Application components:
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework single fix prerequisite rollup
  - Oracle Utilities Work and Asset Management application

Refer to the Installing Oracle Utilities Work and Asset Management - Demo Installation section for the steps involved in installing each of the above components.

Package Contents

The following documentation and installation packages are part of the product package.

This section includes information about:

- Documentation
- Installation Packages

Documentation

Installation Guides

- Oracle Utilities Work and Asset Management Release Notes
- Oracle Utilities Work and Asset Management Quick Install Guide
- Oracle Utilities Work and Asset Management Installation Guide
- Oracle Utilities Work and Asset Management Database Administrator (DBA) Guide
- Oracle Utilities Work and Asset Management Licensing Information User Manual

User Guides

- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Business User's Guide
- Oracle Utilities Work and Asset Management and Oracle Utilities Operational Device Management Administrative User Guide

Supplemental Documents

- Oracle Utilities Work and Asset Management Server Administration Guide
- Oracle Utilities Work and Asset Management Security Guide

Installation Packages

- Oracle Utilities Work and Asset Management v2.2.0.0.0 Release Notes.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 Install Documentation.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 Quick Install Guide.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 Multiplatform.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 Oracle Database Multiplatform.zip
- Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform.zip
- Oracle Utilities Application Framework v4.3.0.4.0 Single Fix Prerequisite Rollup for Oracle Utilities Work and Asset Management v2.2.0.0.0.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 Reports.zip
- Oracle Utilities Work and Asset Management v2.2.0.0.0 ESRI Integration.zip

Readiness Checklist

The following checklist provides steps to complete to install Oracle Utilities Work and Asset Management. The details for each step are presented in subsequent sections.

1. Confirm that the recommended hardware is ready. Refer to Supported Platforms and Hardware Requirements for more details.
2. Install prerequisite software. Refer to the Planning the Installation section for more details.
3. Download the Oracle Utilities Work and Asset Management v2.2.0 components from Oracle Software Delivery Cloud.
4. Go through the Installation and Configuration Worksheets to understand the configuration menu.
5. Determine the type of installation then follow the instructions:
    - **Initial Installation** - For initial installation, follow the instructions in Installing Oracle Utilities Work and Asset Management - Initial Installation.

- **Upgrade Installation** - For upgrade installation, follow the instructions in Upgrading Oracle Utilities Work and Asset Management
- **Demo Installation** - For demo installation, follow the instructions in Installing Oracle Utilities Work and Asset Management - Demo Installation

6. Perform post-installation tasks.
7. Install optional products as described in the Installing Optional Products section.

Chapter 2

Supported Platforms and Hardware Requirements

This installation is certified to operate on many operating system, application server and database server combinations. The following sections provide information on the supported platforms and requirements, including:

- Operating Systems and Application Servers
- Hardware Requirements
- Application Server Memory Requirements
- ESRI Integration Supported Versions
- Support for Software Patches and Upgrades

Operating Systems and Application Servers

The table below details the MINIMUM operating system and application server combinations on which this version of Oracle Utilities Work and Asset Management is supported.

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

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

Please note the following:

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

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

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

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

Windows Server

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

Weblogic Server

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

Oracle VM Support

This version of Oracle Utilities Work and Asset Management 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.

Hardware Requirements

The following section outlines client side hardware requirements for Oracle Utilities Work and Asset Management.

Client Side Hardware Requirements

Configuration	Processor	Memory (RAM)	Monitor (Display)
Minimum	1 GHz or faster 64-bit (x64) processor	2 GB	1280x1024
Recommended*	3 GHz or faster 64-bit (x64) processor	4 GB	1280X1024

* The Recommended configuration supports better performance of the client.

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 Location	10 GB5 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.
Log Location	2 GB5 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 GB1.5 GB minimum	This location is used by various web server vendors to expand the application. It should be considered when installing these products. Refer to the individual web server documentation to determine the location of the temporary files.
Installation Temporary Area	4 GB	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.

ESRI Integration Supported Versions

This section provides information on ArcGIS Server and ArcGIS Desktop compatibility with Oracle Utilities Work and Asset Management.

ArcGIS Server Version Compatibility

Oracle Utilities Work and Asset Management can potentially send outbound messages to the ArcGIS Server in either SOAP or REST formats. Please refer to the table below for certified message formats at each supported ArcGIS Server version.

ArcGIS Server Version	REST (Work Location and Asset)	SOAP (Work Location)	SOAP (Asset)
10.2.1	Yes	Yes	Yes
10.4.1	Yes	Yes/No (if specific .NET framework patches are available in OS)	Yes
10.5	Yes	Yes (With TimeReference tag)	Yes

ArcGIS Desktop Version Compatibility

The following versions of ArcGIS Desktop are supported with Oracle Utilities Work and Asset Management.

- 10.2.1
- 10.4.1

Support for Software Patches and Upgrades

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

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

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

Chapter 3

Planning the Installation

This section provides information for planning an Oracle Utilities Work and Asset Management installation, including:

- Installation Considerations
- Prerequisite Software List
- Installing Prerequisite Software

Before Installation

Refer to My Oracle Support for up-to-date additional information about installing Oracle Utilities Work and Asset Management.

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Work and Asset Management. This step is included as part of the installation instructions.

Installation Considerations

Please review the following prior to installation:

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Work and Asset Management. Refer to the *Oracle Utilities Work and Asset Management Release Notes* for more information.

Embedded vs Native/Clustered Installation

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

If you want to take advantage of more advanced WebLogic features such as high performance (multiple managed servers) and high availability (clustering) configuration, do not use the embedded install. Rather, use the native/clustered installation which allows you to deploy the Oracle Utilities Application Framework J2EE components within Oracle WebLogic, as you would with other J2EE applications.

Application Server Clustering

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

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

Native Mode in WebLogic

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

Directory Names

Directory cannot contain whitespace characters.

Prerequisite Software List

Before you install Oracle Utilities Work and Asset Management, you must install prerequisite software. Refer to the respective installation documentation of the software for instructions on downloading and installing.

This section includes information on the following:

- Prerequisite Software for Database Server
- Prerequisite Software for Application Server

- Web Browser Requirements

Prerequisite Software for Database Server

The prerequisite software for the database component of Oracle Utilities Work and Asset Management includes:

- Oracle Database Server 12.1.0.1+ Standard or Enterprise Edition
  This is required for installing the database component of the Oracle Utilities Work and Asset Management product.

Prerequisite Software for Application Server

The prerequisite software for the application component of Oracle Utilities Work and Asset Management is as follows:

- Oracle 12.1.0.1 Client
- Oracle Client 12c — Runtime Option
- IBM Java Software Development Kit
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit) or Oracle WebLogic 12c (12.2.1.1+) 64-bit, as required.

Web Browser Requirements

The web browsers listed here are supported when used on each of the operating systems indicated:

Browsers	Windows OS
Internet Explorer 11 Firefox ESR 45	Windows OS 7, 8.1, 10 (64-bit)

Installing Prerequisite Software

This section describes the software that needs to be installed for each of the supported operating system and application server combinations including:

This section describes the software that needs to be installed for each of the supported operating system and application server combinations, including:

- AIX 7.1 TL01 or AIX 7.2 TL0 Application Server
- Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server
- Oracle Solaris 11 Application Server

AIX 7.1 TL01 or AIX 7.2 TL0 Application Server

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

- Supported Application Servers
- AIX Operating System Running on Power5 and Power6 Architecture
- IBM Java Software Development Kit
- Oracle 12.1.0.1 Client
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit)
- Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 7.x Application Server

Supported Application Servers

Operating System	Chipset	Application Server
AIX 7.1 TL1 or 7.2 TLO (64-bit)	POWER 64-bit	Oracle WebLogic 12.1.3.0+ (64-bit) version

AIX Operating System Running on Power5 and Power6 Architecture

This section describes requirements for AIX running on Power5 and Power6 architecture.

UNIX Administrator User ID

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

Description	Default Value	Customer Defined Value
Oracle Utilities Work and Asset Management Administrator User ID	cissys	
Oracle Utilities Work and Asset Management 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 or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID 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.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

   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 022 to ensure files created during normal operation have the correct permissions.

Replace these users and groups for your installation defaults:

User	Group	Description
cissys	cisusr	This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application.
cisadm	cisusr	Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

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.

IBM Java Software Development Kit

Version 8.0 SR15 64-bit, IBM SDK, Java Technology Edition, Version 8.0.

Installation of Java is a prerequisite for using Oracle WebLogic as an 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.

Oracle 12.1.0.1 Client

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

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

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

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

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

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

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

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

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```

6. 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 using the following command

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

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

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

Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

Oracle WebLogic 12c (12.2.1.1+) 64-bit

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Oracle Linux 6.5+ or 7.x or Red Hat Linux 6.5+ or 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
- Oracle Linux or Red Hat Enterprise Linux Operating System Running on x86_64 64-bit Architecture
- Oracle Java Development Kit Version 8 Update 92+, 64-bit
- Oracle Client 12.1.0.1+
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit)
- Oracle WebLogic 12c (12.2.1.1+) 64-bit

Supported Application Servers

Operating System	Chipset	Application Server
Oracle Linux 6.5+ or 7.x (64-bit) Red Hat Enterprise Linux 6.x or 7.x (64-bit)	x86_64	Oracle WebLogic 12.1.3.0+ (64-bit) version

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

This section describes details for Oracle Linux or Red Hat Enterprise Linux running on x86_64 64-bit architecture.

UNIX Administrator User ID

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

Description	Default Value	Customer Defined Value
Oracle Utilities Work and Asset Management Administrator User ID	cissys	
Oracle Utilities Work and Asset Management 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 or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID 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.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

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 022 to ensure files created during normal operation have the correct permissions.

Replace these users and groups for your installation defaults:

User	Group	Description
cissys	cisusr	This user will be used to install the application and to apply patches. This user will own all the application files. The same care should be taken with this user ID as if it is 'root'. This user will be able to add, delete and modify and files within the application.
cisadm	cisusr	Administrative and Operation functions will be available to this user. This user will be able to stop and start the application and batch processes, but will not have access to modify any file other than generated log files
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

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.

Oracle Java Development Kit Version 8 Update 92+, 64-bit

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

https://support.oracle.com

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

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

Oracle Client 12.1.0.1+

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.

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

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

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

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

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

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

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-GA.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-3.1.0.CR2.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```

6. 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 using the following command

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

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

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

Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

Oracle WebLogic 12c (12.2.1.1+) 64-bit

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Oracle Solaris 11 Application Server

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

- Supported Application Server
- Oracle Solaris 11 Operating System Running on SPARC-based 64-bit Architecture
- Oracle Java Development Kit Version 8 Update 92+, 64-bit
- Oracle Client 12.1.0.1+
- Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist
- Oracle WebLogic Server 12.1.3.0+ (64-bit)
- Oracle WebLogic 12c (12.2.1.1+) 64-bit

Supported Application Server

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

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

This section describes details for Oracle Solaris 11 when running on SPARC-based 64-bit architecture.

UNIX Administrator User ID

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

Description	Default Value	Customer Defined Value
Oracle Utilities Work and Asset Management Administrator User ID	cissys	
Oracle Utilities Work and Asset Management 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 or upgrade, the software should always be managed using that user ID.

By default, the cissys user ID 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.
3. Set the desired hard/soft limit of the file handler to 4096 or higher.

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 022 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
cisoper	-------	Low level operator. This user will only be able to read logs files and collect information for debugging and investigative purposes. Care should be taken in production to disable debugging as debugging information could contain potential sensitive data which this user should not have privy to.

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.

Oracle Java Development Kit Version 8 Update 92+, 64-bit

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

https://support.oracle.com

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

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

Oracle Client 12.1.0.1+

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.

Hibernate 4.1.0 FINAL and hibernate-search-5.5.4.Final-dist

You must install Hibernate before installing the product. Follow these steps to install Hibernate:

1. Create a Hibernate jar external depot:

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

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

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

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

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

   ```
   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/ehcache-
   core-2.4.3.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/optional/ehcache/
   hibernate-ehcache-4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-
   commons-annotations-4.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-core-
   4.1.0.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/hibernate-jpa-
   2.0-api-1.0.1.Final.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/javassist-3.15.0-
   GA.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-logging-
   3.1.0.CR2.jar $HIBERNATE_JAR_DIR

   cp hibernate-release-4.1.0.Final/lib/required/jboss-
   transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```

6. 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 using the following command

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

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

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

Oracle WebLogic Server 12.1.3.0+ (64-bit)

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

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

Oracle WebLogic 12c (12.2.1.1+) 64-bit

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

- Download and install 64-bit Java (as documented above) before installing WebLogic.
- Download and install WebLogic Server 12c Infrastructure Installer (12.2.1.1+).

Chapter 4

Installing Oracle Utilities Work and Asset Management - Initial Installation

This section provides instructions for installing Oracle Utilities Work and Asset Management v2.2.0 as a new/clean installation including the following:

- Initial Installation Procedure
- Post Installation Verifications

> **Note**: The software components that are required for an initial installation are available for download from the Oracle Software Delivery Cloud.

Before You Install

Refer to My Oracle Support for up-to-date additional information on Oracle Utilities Work and Asset Management.

Initial Installation Procedure

The initial installation procedure consists of:

- Database Component Installation
- Application Components Installation

Database Component Installation

Installation of the database component of Oracle Utilities Work and Asset Management must be complete before you can proceed with the following sections. Refer to the "Initial Install" section in the *Oracle Utilities Work and Asset Management Database Administrator Guide*, which provides instructions on installing the database component.

Application Components Installation

A successful installation consists of the following steps:

- Installing the Oracle Utilities Application Framework Application Component v4.3.0.4.0
- Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup
- Installing the Oracle Utilities Work and Asset Management Application Component

Installing the Oracle Utilities Application Framework Application Component v4.3.0.4.0

This section describes how to install the application component of Oracle Utilities Application Framework, 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
- Installing 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. If you are planning to install multiple Oracle Utilities Application Framework environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

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

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.4.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
```

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

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

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

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

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

If you are reinstalling an existing environment, only the validation of /etc/cistab entry is done by the install utility, no new registration occurs. The install utility interactively instructs you about every step that needs to occur in each specific case.

If you are planning to upgrade an existing environment you should take a backup first. The installation utility does not create an automatic backup of the existing environment.

Installing the Oracle Utilities Application Framework Application Component

This section outlines the steps for installing the application component of Oracle Utilities Application Framework.

1. Login to the Application Server host as administrator user ID (the default is cissys on UNIX) or as a user with administrator privileges (on Windows).
2. Change directory to the <TEMPDIR>/FW.V4.3.0.4.0-SP4 directory.
3. Set the ORACLE_CLIENT_HOME and PATH variables as Oracle Client Perl is required to run the installer.

   UNIX

   ```
   export ORACLE_CLIENT_HOME=<ORACLE CLIENT INSTALL LOCATION>
   ```

```
export PERL_HOME=${ORACLE_CLIENT_HOME}/perl
export PATH=${PERL_HOME}/bin:$PATH
export PERL5LIB=${PERL_HOME}/lib:${PERL_HOME}/lib/site_perl:<OUAF
                        Installer Decompressed location/bin/perlib>
export PERLLIB=${PERL_HOME}/lib:${PERL_HOME}/lib/site_perl:<OUAF
                        Installer Decompressed location/bin/perlib>
export LD_LIBRARY_PATH=${ORACLE_CLIENT_HOME}/lib:$LD_LIBRARY_PATH
```

Windows Server

```
set ORACLE_CLIENT_HOME=<ORACLE CLIENT INSTALL LOCATION>
set PERL_HOME=%ORACLE_CLIENT_HOME%\perl
set PATH=%PERL_HOME%\bin;%PATH%
```

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

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```

5. The Oracle Utilities Application Framework specific menu displays.
6. Follow the messages and instructions that are produced by the application installation utility.
7. Select each menu item to configure the values. For detailed description of the values, refer to the Installation and Configuration Worksheets section.

   The table below lists the mandatory configurable items. Where you see <Mandatory>, enter values suitable to your environment.
   You can assign default values to the rest of the menu items.
   Note: The application includes a feature which creates a separate domain for threadpool worker. In the physical machine or virtual machine of the application, you can create a threadpool domain and through the admin console of that domain, you can deploy "Threadpoolworker.ear" to have independent control upon the threadpool worker.

   Another option is to include the threadpool worker in the application domain so whenever the application is started, its corresponding threadpool worker is also started.

   For ThreadPool Worker deployment through the Admin console, configure "Web JDBC DataSource Name" as "TPWDatasource" through Admin Console and update the same in the Menu 4 options; also provide the credentials of "JDBC Database UserName/Password" to be the same as Application Server Database UserName/Password. Refer to Menu 4 for more information.

   Note: TPWDataSource (Web JDBC DataSource Name) is Mandatory for console based TPW but for Standalone TPW it is optional.

```
************************************
* Environment Installation Options *
```

```
***********************************
1. Environment ID, Roles, Third Party Software Configuration

   Environment ID

   Server Roles                                          batch, online

   Oracle Client Home Directory    <Mandatory for Initial Install>

   Web Java Home Directory         <Mandatory for Initial Install>

   Hibernate JAR Directory

   ONS JAR Directory

   Web Application Server Home     <Mandatory for Initial Install>
   Directory

   WebLogic Server Thin-Client JAR
   Directory

   ADF Home Directory

   OIM OAM Enabled Environment


2. Keystore Options

    Import Keystore Directory

    Store Type                                                JCEKS

    Alias                                                ouaf.system

    Alias Key Algorithm                                AES Alias Key

    Alias Key Size                                              128

    HMAC Alias                                     ouaf.system.hmac

    Padding                                            PKCS5Padding

    Mode                                                        CBC


50. Environment Installation Options

    Environment Mount Point                             <Mandatory>

    Log Files Mount Point                               <Mandatory>

    Environment Name                                    <Mandatory>

    Web Application Server Type

    Install Application Viewer Module                         true

    Install Demo Generation Cert Script                       true

    Install Sample CM Source Code                             true

Each item in the above list should be configured for a successful
install.

Choose option (1,2,50, <P> Process, <X> Exit):
```

8. Once you enter 'P' after entering mandatory input values in the above menu, the system populates another configuration menu.

```
**********************************************************
* Environment Configuration *
**********************************************************
 1. Environment Description

    Environment Description                          <Mandatory>


 2. Business Application Server Configuration

    Business Server Host                <Mandatory> - Hostname on
                                          which application being
                                                        installed

    WebLogic Server Name                                 myserver

    Business Server Application Name                  SPLService

    MPL Admin Port Number            <Mandatory> - Multipurpose
                                                   Listener Port

    MPL Automatic startup                                 false


 3. Web Application Server Configuration

    Web Server Host                                  <Mandatory>

    Weblogic SSL Port Number                         <Mandatory>

    Weblogic Console Port Number                     <Mandatory>

    WebLogic Additional Stop Arguments               <Mandatory>

    Web Context Root                                        ouaf

    WebLogic JNDI User ID                            <Mandatory>

    WebLogic JNDI Password                           <Mandatory>

    WebLogic Admin System User ID                    <Mandatory>

    WebLogic Admin System Password                   <Mandatory>

    WebLogic Server Name                                myserver

    Web Server Application Name                           SPLWeb

    Deploy using Archive Files                              true

    Deploy Application Viewer Module                        true

    Enable The Unsecured Health Check Service              false

    MDB RunAs User ID

    Super User IDs
```

4. Database Configuration

Application Server Database User ID	<Mandatory>
Application Server Database Password	<Mandatory>
MPL Database User ID	<Mandatory>
MPL Database Password	<Mandatory>
XAI Database User ID	<Mandatory>
XAI Database Password	<Mandatory>
Batch Database User ID	<Mandatory>
Batch Database Password	<Mandatory>
Web JDBC DataSource Name	TPWDataSource <Mandatory>
JDBC Database User ID	<Mandatory>
JDBC Database Password	<Mandatory>
Database Name	<Mandatory>
Database Server	x.x.x.x
Database Port	1521
ONS Server Configuration	
Database Override Connection String	
Character Based Database	false
Oracle Client Character Set NLS_LANG	AMERICAN_AMERICA.AL32UTF8

Note: Web JDBC Datasource Name and Credentials are mandatory for Console base TPW deployment only, for Stanalone TPW it is optional.

5. General Configuration Options

Batch RMI Port	<mandatory>
RMI Port number for JMX Business	<optional>
RMI Port number for JMX Web	<optional>
JMX Enablement System User ID	<optional>
JMX Enablement System Password	<optional>
Coherence Cluster Name	<optional>
Coherence Cluster Address	<optional>
Coherence Cluster Mode	prod<Mandatory>
Coherence Cluster Port	<Mandatory>

```
 6. SSL Certificate Keystore
     Certificate Keystore Type                                    DEMO
     Identify Keystore File
     Identify Keystore File Type                                   jks
     Identify Keystore Password
     Identity Private Key Alias                        ouaf_demo_cert
     Trust Keystore File
     Trust Keystore File Type                                      jks
     Trust Keystore Password
     Trust Private Key Alias                           ouaf_demo_cert

 7. OUAF TrustStore Options
     Import TrustStore Directory:
     Store Type                                                  JCEKS
     Alias                                                 ouaf.system
     Alias Key Algorithm                                          AES
     Alias Key Size                                               128
     HMAC Alias                                       ouaf.system.hmac
     Padding                                              PKCS5Padding
     Mode                                                         CBC


Each item in the above list should be configured for a successful
install.

Choose option (1,2,3,4,5,6,7 <P> Process, <X> Exit):
```

10. When you are done with the parameter setup, proceed with the option P. The utility writes the configured parameters and their values into the configuration file.

11. 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.

Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Work and Asset Management. The patches are available as a convenience rollup inside the zip file 'Oracle Utilities Application Framework v4.3.0.4.0-SP4 Single Fix Prerequisite Rollup for Oracle Utilities Work and Asset Management v2.2.0.0.0.zip which is part of the downloaded Media Pack.

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

1. Copy the file, WAM-V22000-FW-PREREQ-MultiPlatform.jar, in the delivered package to a <TEMPDIR>.
2. Unjar using the command:

```
jar -xvf WAM-V22000-FW-PREREQ-MultiPlatform.jar
```

3. Initialize the Framework environment where you are installing the Oracle Utilities Application Framework patch rollup:

UNIX

```
$SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
```

Windows Server

```
%SPLEBASE%\bin\splenviron.cmd -e <YOUR_ENVIRONMENT_NAME>
```

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

UNIX

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

Windows Server

```
installSFgroup.cmd
```

Installing the Oracle Utilities Work and Asset Management Application Component

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

- Copying and Decompressing Oracle Utilities Work and Asset Management Install Media
- Installing the Oracle Utilities Work and Asset Management Application Component
- Performing Oracle Utilities Work and Asset Management Post-Installation Tasks

Copying and Decompressing 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, follow these steps:

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 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 file, WAM-V2.2.0.0.0-MultiPlatform.jar, 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-V2.2.0.0.0-MultiPlatform.jar
   ```

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

   A sub-directory named W1.V2.2.0.0.0 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 directory:

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

   where <install_dir> is the location where the Oracle Utilities Asset Management 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. If the environment is running, stop it by running the appropriate command:

   UNIX

   ```
   ./spl.sh -a stop
   ```

Windows

```
spl.cmd -a stop
```

5. Change to the <TEMPDIR>/W1.V2.2.0.0.0 Directory.
6. Execute the install script:

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

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```

7. Install patch 26020446 to ensure that the application can launch.
   a. Download the patch from ARU and install http://aru.us.oracle.com:8080/ARU/ViewPatchRequest/process_form?aru=21267236
   b. Execute the following commands:

      UNIX

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

      Windows

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

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

   UNIX

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

   Windows

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

Performing Oracle Utilities Work and Asset Management Post-Installation Tasks

Generate the appviewer by following these steps:

1. Change the directory.

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

   where <install_dir> is Oracle Utilities Work and Asset Management Application Component installation directory.
2. Run the script to generate the appviewer.

UNIX

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

Windows

```
genappvieweritems.cmd
```

3. Create a default Oracle Utilities Work and Asset Management user by completing the following steps:

   a. For HTTP (Non-SSL) Connections:

   ```
   ant -f $SPLEBASE/splapp/userAdmin.xml -
   Dadmin.server.url=t3:<weblogic-host>:<weblogic-port> -
   Dadmin.user=<weblogic-admin-username> -
   Dadmin.password=<weblogic-admin-password> -Duser.name=WAMUSER -
   Duser.password=<password>
   ```

   b. For HTTPS (SSL) Connections:

   ```
   ant -f $SPLEBASE/splapp/userAdmin.xml -
   Dadmin.server.url=t3s:<weblogic-host>:<weblogic-port> -
   Dadmin.user=<weblogic-admin-username> -
   Dadmin.password=<weblogic-admin-password> -Duser.name=WAMUSER -
   Duser.password=<password>
   ```

Post Installation Verifications

After you complete the installation, verify the following:

1. Verify installation logs created under decompressed installer location for any errors.
2. Confirm installation logs do not contain any errors.
3. Confirm all the configurations are correct.
   Refer to the Installation and Configuration Worksheets section for details.
4. Confirm that the database is ready.
5. Generate appviewer.
6. Start the application server.
   For instructions, refer to the Common Maintenance Activities section.

At this point your installation is complete. Read the *Oracle Utilities Work and Asset Management Server Administration Guide* for more information on further configuring and operating the system.

Chapter 5

Installing Oracle Utilities Work and Asset Management - Demo Installation

This section provides instructions for setting up a demo application of Oracle Utilities Work and Asset Management useful for demonstration or training purposes, including:

- Demo Installation Procedure
- Post Installation Verifications

Before You Install

Oracle recommends that you do not clone the demonstration environment as a basis for a new production environment. The demonstration environment typically includes transactional data that will be irrelevant to your production environment and can cause unexpected issues if it is not purged correctly. The recommended process is to start a new production environment from a new installation and migrate "clean" system data (such as business objects and algorithms) and administrative data (such as sample activity types or other administrative entities) from the demonstration and/or test or development environments as applicable.

Please refer to the *Oracle Utilities Work and Asset Management Administrative User's Guide* for more information or contact Oracle Support.

Demo Installation Procedure

The demo installation procedure consists of:

- Database Component Installation
- Application Component Installation

Database Component Installation

Installation of the database component of Oracle Utilities Work and Asset Management must be complete before you can proceed with the following sections. Refer to the *Oracle Utilities Work and Asset Management Database Administrator Guide*, which provides instructions on installing the database component with pre-populated demo data.

Application Component Installation

A successful installation consists of the following steps:

- Installing the Oracle Utilities Application Framework Application Component v4.3.0.4.0
- Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup
- Installing the Oracle Utilities Work and Asset Management Application Component

Installing the Oracle Utilities Application Framework Application Component v4.3.0.4.0

This section describes how to install the application component of Oracle Utilities Application Framework, 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
- Installing 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. If you are planning to install multiple Oracle Utilities Application Framework environments operated by different Oracle Utilities administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

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

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.4.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
```

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

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

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

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

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

If you are reinstalling an existing environment, only the validation of /etc/cistab entry is done by the install utility, no new registration occurs. The install utility interactively instructs you about every step that needs to occur in each specific case.

If you are planning to upgrade an existing environment you should take a backup first. The installation utility does not create an automatic backup of the existing environment.

Installing the Oracle Utilities Application Framework Application Component

This section outlines the steps for installing the application component of Oracle Utilities Application Framework.

1. Login to the Application Server host as administrator user ID (the default is cissys on UNIX) or as a user with administrator privileges (on Windows).
2. Change directory to the <TEMPDIR>/FW.V4.3.0.4.0-SP4 directory.
3. Set the ORACLE_CLIENT_HOME and PATH variables as Oracle Client Perl is required to run the installer.

   UNIX

   ```
   export ORACLE_CLIENT_HOME=<ORACLE CLIENT INSTALL LOCATION>
   ```

```
export PERL_HOME=${ORACLE_CLIENT_HOME}/perl
export PATH=${PERL_HOME}/bin:$PATH
export PERL5LIB=${PERL_HOME}/lib:${PERL_HOME}/lib/site_perl:<OUAF
                        Installer Decompressed location/bin/perlib>
export PERLLIB=${PERL_HOME}/lib:${PERL_HOME}/lib/site_perl:<OUAF
                        Installer Decompressed location/bin/perlib>
export LD_LIBRARY_PATH=${ORACLE_CLIENT_HOME}/lib:$LD_LIBRARY_PATH
```

Windows Server

```
set ORACLE_CLIENT_HOME=<ORACLE CLIENT INSTALL LOCATION>
set PERL_HOME=%ORACLE_CLIENT_HOME%\perl
set PATH=%PERL_HOME%\bin;%PATH%
```

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

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```

5. The Oracle Utilities Application Framework specific menu displays.
6. Follow the messages and instructions that are produced by the application installation utility.
7. Select each menu item to configure the values. For detailed description of the values, refer to the Installation and Configuration Worksheets section.

   The table below lists the mandatory configurable items. Where you see <Mandatory>, enter values suitable to your environment.
   You can assign default values to the rest of the menu items.
   Note: The application includes a feature which creates a separate domain for threadpool worker. In the physical machine or virtual machine of the application, you can create a threadpool domain and through the admin console of that domain, you can deploy "Threadpoolworker.ear" to have independent control upon the threadpool worker.

   Another option is to include the threadpool worker in the application domain so whenever the application is started, its corresponding threadpool worker is also started.

   For ThreadPool Worker deployment through the Admin console, configure "Web JDBC DataSource Name" as "TPWDatasource" through Admin Console and update the same in the Menu 4 options; also provide the credentials of "JDBC Database UserName/Password" to be the same as Application Server Database UserName/Password. Refer to Menu 4 for more information.

   Note: TPWDataSource (Web JDBC DataSource Name) is Mandatory for console based TPW but for Standalone TPW it is optional.

```
************************************
* Environment Installation Options *
```

```
***********************************
1. Environment ID, Roles, Third Party Software Configuration

   Environment ID

   Server Roles                                          batch, online

   Oracle Client Home Directory    <Mandatory for Initial Install>

   Web Java Home Directory         <Mandatory for Initial Install>

   Hibernate JAR Directory

   ONS JAR Directory

   Web Application Server Home     <Mandatory for Initial Install>
   Directory

   WebLogic Server Thin-Client JAR
   Directory

   ADF Home Directory

   OIM OAM Enabled Environment


2. Keystore Options

    Import Keystore Directory

    Store Type                                                JCEKS

    Alias                                                ouaf.system

    Alias Key Algorithm                                AES Alias Key

    Alias Key Size                                              128

    HMAC Alias                                     ouaf.system.hmac

    Padding                                            PKCS5Padding

    Mode                                                        CBC


50. Environment Installation Options

    Environment Mount Point                             <Mandatory>

    Log Files Mount Point                               <Mandatory>

    Environment Name                                    <Mandatory>

    Web Application Server Type

    Install Application Viewer Module                         true

    Install Demo Generation Cert Script                       true

    Install Sample CM Source Code                             true

Each item in the above list should be configured for a successful
install.

Choose option (1,2,50, <P> Process, <X> Exit):
```

8. Once you enter 'P' after entering mandatory input values in the above menu, the system populates another configuration menu.

```
**********************************************************
* Environment Configuration *
**********************************************************
 1. Environment Description

    Environment Description                          <Mandatory>


 2. Business Application Server Configuration

    Business Server Host                <Mandatory> - Hostname on
                                          which application being
                                                        installed

    WebLogic Server Name                                 myserver

    Business Server Application Name                  SPLService

    MPL Admin Port Number             <Mandatory> - Multipurpose
                                                   Listener Port

    MPL Automatic startup                                 false


 3. Web Application Server Configuration

    Web Server Host                                  <Mandatory>

    Weblogic SSL Port Number                         <Mandatory>

    Weblogic Console Port Number                     <Mandatory>

    WebLogic Additional Stop Arguments               <Mandatory>

    Web Context Root                                        ouaf

    WebLogic JNDI User ID                            <Mandatory>

    WebLogic JNDI Password                           <Mandatory>

    WebLogic Admin System User ID                    <Mandatory>

    WebLogic Admin System Password                   <Mandatory>

    WebLogic Server Name                                myserver

    Web Server Application Name                          SPLWeb

    Deploy using Archive Files                             true

    Deploy Application Viewer Module                       true

    Enable The Unsecured Health Check Service             false

    MDB RunAs User ID

    Super User IDs
```

4. Database Configuration

Application Server Database User ID	<Mandatory>
Application Server Database Password	<Mandatory>
MPL Database User ID	<Mandatory>
MPL Database Password	<Mandatory>
XAI Database User ID	<Mandatory>
XAI Database Password	<Mandatory>
Batch Database User ID	<Mandatory>
Batch Database Password	<Mandatory>
Web JDBC DataSource Name	TPWDataSource <Mandatory>
JDBC Database User ID	<Mandatory>
JDBC Database Password	<Mandatory>
Database Name	<Mandatory>
Database Server	x.x.x.x
Database Port	1521
ONS Server Configuration	
Database Override Connection String	
Character Based Database	false
Oracle Client Character Set NLS_LANG	AMERICAN_AMERICA.AL32UTF8

Note: Web JDBC Datasource Name and Credentials are mandatory for Console base TPW deployment only, for Stanalone TPW it is optional.

5. General Configuration Options

Batch RMI Port	<mandatory>
RMI Port number for JMX Business	<optional>
RMI Port number for JMX Web	<optional>
JMX Enablement System User ID	<optional>
JMX Enablement System Password	<optional>
Coherence Cluster Name	<optional>
Coherence Cluster Address	<optional>
Coherence Cluster Mode	prod<Mandatory>
Coherence Cluster Port	<Mandatory>

```
 6. SSL Certificate Keystore
     Certificate Keystore Type                                    DEMO
     Identify Keystore File
     Identify Keystore File Type                                   jks
     Identify Keystore Password
     Identity Private Key Alias                        ouaf_demo_cert
     Trust Keystore File
     Trust Keystore File Type                                      jks
     Trust Keystore Password
     Trust Private Key Alias                           ouaf_demo_cert

 7. OUAF TrustStore Options
     Import TrustStore Directory:
     Store Type                                                 JCEKS
     Alias                                                ouaf.system
     Alias Key Algorithm                                         AES
     Alias Key Size                                              128
     HMAC Alias                                      ouaf.system.hmac
     Padding                                             PKCS5Padding
     Mode                                                        CBC


Each item in the above list should be configured for a successful
install.

Choose option (1,2,3,4,5,6,7 <P> Process, <X> Exit):
```

10. When you are done with the parameter setup, proceed with the option P. The utility writes the configured parameters and their values into the configuration file.

11. 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.

Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Work and Asset Management. The patches are available as a convenience rollup inside the zip file 'Oracle Utilities Application Framework v4.3.0.4.0-SP4 Single Fix Prerequisite Rollup for Oracle Utilities Work and Asset Management v2.2.0.0.0.zip which is part of the downloaded Media Pack.

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

1. Copy the file, WAM-V22000-FW-PREREQ-MultiPlatform.jar, in the delivered package to a <TEMPDIR>.
2. Unjar using the command:

```
jar -xvf WAM-V22000-FW-PREREQ-MultiPlatform.jar
```

3. Initialize the Framework environment where you are installing the Oracle Utilities Application Framework patch rollup:

UNIX

```
$SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
```

Windows Server

```
%SPLEBASE%\bin\splenviron.cmd -e <YOUR_ENVIRONMENT_NAME>
```

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

UNIX

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

Windows Server

```
installSFgroup.cmd
```

Installing the Oracle Utilities Work and Asset Management Application Component

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

- Copying and Decompressing Oracle Utilities Work and Asset Management Install Media
- Installing the Oracle Utilities Work and Asset Management Application Component
- Performing Oracle Utilities Work and Asset Management Post-Installation Tasks

Copying and Decompressing 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, follow these steps:

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 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 file, WAM-V2.2.0.0.0-MultiPlatform.jar, 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-V2.2.0.0.0-MultiPlatform.jar
   ```

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

   A sub-directory named W1.V2.2.0.0.0 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 directory:

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

   where <install_dir> is the location where the Oracle Utilities Asset Management 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. If the environment is running, stop it by running the appropriate command:

   UNIX

   ```
   ./spl.sh -a stop
   ```

Windows

```
spl.cmd -a stop
```

5. Change to the <TEMPDIR>/W1.V2.2.0.0.0 Directory.
6. Execute the install script:

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

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```

7. Install patch 26020446 to ensure that the application can launch.
   a. Download the patch from ARU and install http://aru.us.oracle.com:8080/ARU/ViewPatchRequest/process_form?aru=21267236
   b. Execute the following commands:

      UNIX

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

      Windows

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

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

   UNIX

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

   Windows

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

Performing Oracle Utilities Work and Asset Management Post-Installation Tasks

Generate the appviewer by following these steps:

1. Change the directory.

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

   where <install_dir> is Oracle Utilities Work and Asset Management Application Component installation directory.
2. Run the script to generate the appviewer.

UNIX

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

Windows

```
genappvieweritems.cmd
```

3. Create a default Oracle Utilities Work and Asset Management user by completing the following steps:

   a. For HTTP (Non-SSL) Connections:

   ```
   ant -f $SPLEBASE/splapp/userAdmin.xml -
   Dadmin.server.url=t3:<weblogic-host>:<weblogic-port> -
   Dadmin.user=<weblogic-admin-username> -
   Dadmin.password=<weblogic-admin-password> -Duser.name=WAMUSER -
   Duser.password=<password>
   ```

   b. For HTTPS (SSL) Connections:

   ```
   ant -f $SPLEBASE/splapp/userAdmin.xml -
   Dadmin.server.url=t3s:<weblogic-host>:<weblogic-port> -
   Dadmin.user=<weblogic-admin-username> -
   Dadmin.password=<weblogic-admin-password> -Duser.name=WAMUSER -
   Duser.password=<password>
   ```

Post Installation Verifications

After you complete the installation, verify the following:

1. Verify installation logs created under decompressed installer location for any errors.
2. Confirm installation logs do not contain any errors.
3. Confirm all the configurations are correct.
   Refer to the Installation and Configuration Worksheets section for details.
4. Confirm that the database is ready.
5. Generate appviewer.
6. Start the application server.
   For instructions, refer to the Common Maintenance Activities section.

At this point your installation is complete. Read the *Oracle Utilities Work and Asset Management Server Administration Guide* for more information on further configuring and operating the system.

Chapter 6

Upgrading Oracle Utilities Work and Asset Management

This section provides instructions for upgrading Oracle Utilities Work and Asset Management, including:

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

Upgrade Paths

- from v2.1.1.1 to v2.2.0
- from v2.1.1 to v2.2.0

  Note: Before you can upgrade you must have a prior version installed. Otherwise, you should follow the procedures described in the Initial Installation Procedure section of the *Oracle Utilities Work and Asset Management Installation Guide*.

Before You Upgrade

Review the list of operating system, application server and database server combinations that this version of Oracle Utilities Work and Asset Management is certified to operate on, in the Supported Platforms and Hardware Requirements section.

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

Note: If you are upgrading a previously installed application server, it is recommended that you make a backup before you start the upgrade procedure. The upgrade installation will remove your existing environment including your configurations.

Upgrade Procedure

The upgrade installation procedure consists of:

- Database Component Upgrade
- Application Component Upgrade

Database Component Upgrade

Upgrade of the database component of Oracle Utilities Work and Asset Management must be complete before you can proceed with the following sections. Refer to the "Upgrade Install" section in the *Oracle Utilities Work and Asset Management Database Administrator Guide*, which provides instructions on upgrading the database component.

Application Component Upgrade

A successful upgrade consists of the following steps:

- Upgrading the Oracle Utilities Application Framework Application Component
- Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup
- Upgrading the Oracle Utilities Work and Asset Management Application Component

Upgrading the Oracle Utilities Application Framework Application Component

This section describes how to upgrade the application component of Oracle Utilities Application Framework, 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. If you are planning to install multiple Oracle Utilities Application Framework environments operated by different Oracle Utilities

administrator user IDs, you must complete each of the following installation steps for each administrator user ID.

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

1. Log in to the application server host with the Oracle Utilities Application Framework administrator user ID.
2. Download the Oracle Utilities Application Framework v4.3.0.4.0 Multiplatform from Oracle Software Delivery Cloud.
3. Create a temporary directory such as c:\ouaf\temp or /ouaf/temp. (Referred to below as <TEMPDIR>.)

   Note: This directory must be located outside any current or other working Oracle Utilities application environment. All files that are placed in this directory as a part of the installation can be deleted after completing a successful installation.
4. Copy the file FW-V4.3.0.4.0-MultiPlatform.jar from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

   ```
   cd <TEMPDIR>
   jar -xvf FW-V4.3.0.4.0-MultiPlatform.jar
   ```

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

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

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

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

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

If you are reinstalling an existing environment, only the validation of /etc/cistab entry is done by the install utility, no new registration occurs. The install utility interactively instructs you about every step that needs to occur in each specific case.

If you are planning to upgrade an existing environment you should take a backup first. The installation utility does not create an automatic backup of the existing environment.

Upgrading the Oracle Utilities Application Framework Application Component

This section outlines the steps for upgrading the application component of Oracle Utilities Application Framework.

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 Asset Management 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>/FWV4.3.0.4.0-SP4 directory.

   NOTE: While installing the FW v4.3.0.4.0 from the previous environment to Oracle Utilities Work and Asset Management v2.2.0.0.0 the install utility removes the existing environment and re-creates the environment. Make a backup before you proceed with installing FW v4.3.0.0 to retain any configurations for future reference.
5. Start the application installation utility by executing the appropriate script:

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```
6. The Oracle Utilities Application Framework specific menu displays.
7. Follow the messages and instructions that are produced by the application installation utility.

8. Select each menu item to configure the values. For detailed description of the values, refer to the Installation and Configuration Worksheets section.

   The table below lists the mandatory configurable items. Where you see <Mandatory>, enter values suitable to your environment.
   You can assign default values to the rest of the menu items.
   Note: The application includes a feature which creates a separate domain for threadpool worker. In the physical machine or virtual machine of the application, you can create a threadpool domain and through the admin console of that domain, you can deploy "Threadpoolworker.ear" to have independent control upon the threadpool worker.

   Another option is to include the threadpool worker in the application domain so whenever the application is started, its corresponding threadpool worker is also started.

   For ThreadPool Worker deployment through the Admin console, configure "Web JDBC DataSource Name" as "TPWDatasource" through Admin Console and update the same in the Menu 4 options; also provide the credentials of "JDBC Database UserName/Password" to be the same as Application Server Database UserName/Password. Refer to Menu 4 for more information.

   Note: TPWDataSource (Web JDBC DataSource Name) is Mandatory for console based TPW but for Standalone TPW it is optional.

```
***********************************
* Environment Installation Options *
***********************************
1. Environment ID, Roles, Third Party Software Configuration

    Environment ID

    Server Roles                                        batch, online

    Oracle Client Home Directory    <Mandatory for Initial Install>

    Web Java Home Directory         <Mandatory for Initial Install>

    Hibernate JAR Directory

    ONS JAR Directory

    Web Application Server Home     <Mandatory for Initial Install>
    Directory

    WebLogic Server Thin-Client JAR
    Directory

    ADF Home Directory

    OIM OAM Enabled Environment


2. Keystore Options

     Import Keystore Directory

     Store Type                                                JCEKS
```

```
    Alias                                                ouaf.system
    Alias Key Algorithm                                AES Alias Key
    Alias Key Size                                               128
    HMAC Alias                                      ouaf.system.hmac
    Padding                                            PKCS5Padding
    Mode                                                         CBC


50. Environment Installation Options
    Environment Mount Point                             <Mandatory>
    Log Files Mount Point                               <Mandatory>
    Environment Name                                    <Mandatory>
    Web Application Server Type
    Install Application Viewer Module                          true
    Install Demo Generation Cert Script                        true
    Install Sample CM Source Code                              true

Each item in the above list should be configured for a successful
install.

Choose option (1,2,50, <P> Process, <X> Exit):
```

9. Once you enter 'P' after entering mandatory input values in the above menu, the system populates another configuration menu.

```
************************************************************
* Environment Configuration *
************************************************************
 1. Environment Description
    Environment Description                             <Mandatory>


 2. Business Application Server Configuration
    Business Server Host                <Mandatory> - Hostname on
                                                      which application being
                                                                  installed
    WebLogic Server Name                                     myserver
    Business Server Application Name                      SPLService
    MPL Admin Port Number               <Mandatory> - Multipurpose
                                                        Listener Port
    MPL Automatic startup                                       false
```

```
3. Web Application Server Configuration
    Web Server Host                                  <Mandatory>
    Weblogic SSL Port Number                         <Mandatory>
    Weblogic Console Port Number                     <Mandatory>
    WebLogic Additional Stop Arguments               <Mandatory>
    Web Context Root                                        ouaf
    WebLogic JNDI User ID                            <Mandatory>
    WebLogic JNDI Password                           <Mandatory>
    WebLogic Admin System User ID                    <Mandatory>
    WebLogic Admin System Password                   <Mandatory>
    WebLogic Server Name                                myserver
    Web Server Application Name                           SPLWeb
    Deploy using Archive Files                              true
    Deploy Application Viewer Module                        true
    Enable The Unsecured Health Check Service              false
    MDB RunAs User ID
    Super User IDs


4. Database Configuration
    Application Server Database User ID              <Mandatory>
    Application Server Database Password             <Mandatory>
    MPL Database User ID                             <Mandatory>
    MPL Database Password                            <Mandatory>
    XAI Database User ID                             <Mandatory>
    XAI Database Password                            <Mandatory>
    Batch Database User ID                           <Mandatory>
    Batch Database Password                          <Mandatory>
    Web JDBC DataSource Name                      TPWDataSource
                                                     <Mandatory>

    JDBC Database User ID                            <Mandatory>
    JDBC Database Password                           <Mandatory>
    Database Name                                    <Mandatory>
    Database Server                                      x.x.x.x
    Database Port                                           1521
    ONS Server Configuration
```

```
    Database Override Connection String

    Character Based Database                                  false

    Oracle Client Character                  AMERICAN_AMERICA.AL32
    Set NLS_LANG                                              UTF8
```

Note: Web JDBC Datasource Name and Credentials are mandatory for Console base TPW deployment only, for Stanalone TPW it is optional.

```
5. General Configuration Options

    Batch RMI Port                                       <mandatory>

    RMI Port number for JMX Business                      <optional>

    RMI Port number for JMX Web                           <optional>

    JMX Enablement System User ID                         <optional>

    JMX Enablement System Password                        <optional>

    Coherence Cluster Name                                <optional>

    Coherence Cluster Address                             <optional>

    Coherence Cluster Mode                          prod<Mandatory>

    Coherence Cluster Port                               <Mandatory>

 6. SSL Certificate Keystore

    Certificate Keystore Type                                 DEMO

    Identify Keystore File

    Identify Keystore File Type                                jks

    Identify Keystore Password

    Identity Private Key Alias                      ouaf_demo_cert

    Trust Keystore File

    Trust Keystore File Type                                   jks

    Trust Keystore Password

    Trust Private Key Alias                         ouaf_demo_cert

7. OUAF TrustStore Options

    Import TrustStore Directory:

    Store Type                                                JCEKS

    Alias                                                ouaf.system

    Alias Key Algorithm                                        AES

    Alias Key Size                                             128

    HMAC Alias                                    ouaf.system.hmac
```

```
Padding                                                    PKCS5Padding

Mode                                                              CBC


Each item in the above list should be configured for a successful
install.

Choose option (1,2,3,4,5,6,7 <P> Process, <X> Exit):
```

10. When you are done with the parameter setup, proceed with the option P. The utility writes the configured parameters and their values into the configuration file.

11. 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.

Installing Oracle Utilities Application Framework v4.3.0.4.0 Single Fix PreRequisite Rollup

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Work and Asset Management. The patches are available as a convenience rollup inside the zip file 'Oracle Utilities Application Framework v4.3.0.4.0-SP4 Single Fix Prerequisite Rollup for Oracle Utilities Work and Asset Management v2.2.0.0.0.zip which is part of the downloaded Media Pack.

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

1. Copy the file, WAM-V22000-FW-PREREQ-MultiPlatform.jar, in the delivered package to a <TEMPDIR>.
2. Unjar using the command:

   ```
   jar -xvf WAM-V22000-FW-PREREQ-MultiPlatform.jar
   ```

3. Initialize the Framework environment where you are installing the Oracle Utilities Application Framework patch rollup:

   UNIX

   ```
   $SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
   ```

   Windows Server

   ```
   %SPLEBASE%\bin\splenviron.cmd -e <YOUR_ENVIRONMENT_NAME>
   ```

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

   UNIX

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

```
./installSFgroup.sh
```

Windows Server

```
installSFgroup.cmd
```

Upgrading the Oracle Utilities Work and Asset Management Application Component

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

- Copying and Decompressing Oracle Utilities Work and Asset Management Install Media
- Upgrading the Oracle Utilities Work and Asset Management Application Component
- Performing Post-Upgrade Tasks

Copying and Decompressing 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, follow these steps:

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 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 file, WAM-V2.2.0.0.0-MultiPlatform.jar, 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-V2.2.0.0.0-MultiPlatform.jar
   ```

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

   A sub-directory named W1.V2.2.0.0.0 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.

Upgrading the Oracle Utilities Work and Asset Management Application Component

Follow these steps to upgrade 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 directory:

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

   where <install_dir> is the location where the Oracle Utilities Asset Management 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. If the environment is running, stop it by running the appropriate command:

   UNIX

   ```
   ./spl.sh -a stop
   ```

   Windows

   ```
   spl.cmd -a stop
   ```
5. Change to the <TEMPDIR>/W1.V2.2.0.0.0 Directory.
6. Execute the install script:

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

   UNIX

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

   Windows Server

   ```
   install.cmd
   ```
7. Install patch 26020446 to ensure that the application can launch.
   a. Download the patch from ARU and install http://aru.us.oracle.com:8080/ARU/ViewPatchRequest/process_form?aru=21267236
   b. Execute the following commands:

      UNIX

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

      Windows

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

Performing Post-Upgrade Tasks

Generate the appviewer by following these steps:

1. Change the directory.

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

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

2. Run the script to generate the appviewer.

   UNIX

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

   Windows

   ```
   genappvieweritems.cmd
   ```

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 installation logs do not contain any errors.
3. Confirm all the configurations are correct.
   Refer to the Installation and Configuration Worksheets section for details.
4. Confirm that the database is ready.
5. Generate appviewer.
6. Start the application server.
   For instructions, refer to the Common Maintenance Activities section.

At this point your installation is complete. Read the *Oracle Utilities Work and Asset Management 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 on installing patches, refer to knowledge base article ID 974985.1 on My Oracle Support.

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

Chapter 7

Additional Tasks

This section describes tasks that should be completed after installing Oracle Utilities Work and Asset Management, including:

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Customizing Centralized Properties
- Integrating Existing Customer Modifications
- Generating the Application Viewer
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Configuring Secure Sockets Layer (SSL)
- Setting Up an Application Keystore
- Domain Templates (Linux Weblogic 12.1.3.0+ and Unix 12.2.1only)
- 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 Oracle Utilities Application Framework truststore file.

Perform the following commands:

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

   UNIX

   ```
   $SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
   ```

   For example:

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

Windows

```
%SPLEBASE%\bin\splenviron.cmd -e <YOUR_ENVIRONMENT_NAME>
```

For example:

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

3. Execute the following script to generate all information:

UNIX

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

Windows

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

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

Customizing Configuration Files

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

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

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

UNIX

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

Windows

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

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

Customizing Centralized Properties

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.

Example cm_properties.ini

The following denote the 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
```

Sample ENVIRON.INI

The following is an example ENVIRON>INI:

DBUSER=cisadm

Sample cm_properties.ini

The following is the content of an example cm_properties.ini:

```
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
```

Result of hibernate.service.properties generated properties file

The following is a sample result of hibernate.service.properties generated properties file:

```
      ### 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
```

Result of hibernate.iws.properties generated properties file

The following is a sample result of hibernate.iws.properties generated properties file:

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

Integrating Existing Customer Modifications

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

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

Generating the Application Viewer

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

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

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

   UNIX

   ```
   $SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
   ```

   For example:

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

   Windows

   ```
   %SPLEBASE%\bin\splenviron.cmd -e  <YOUR_ENVIRONMENT_NAME>
   ```

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

4. Restart your application.

Building Javadocs Indexes

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

Perform the following to rebuild the Javadoc indexes.

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

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

Configuring the Environment for Batch Processing

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

Customizing the Logo

To replace the Oracle Utilities logo on the main menu with another image, put the new image <customer_logo_file>.png file into the directory $SPLEBASE/etc/conf/root/cm and create a new "External" Navigation Key called CM_logoImage. To do that, run the Oracle Utilities application from the browser with the parameters: http://<hostname>:<port>/cis.jsp?utilities=true&tools=true.

From the Admin menu, select Navigation Key.

Add the above Navigation Key with its corresponding URL Override path.

The syntax for the URL path is:

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

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

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

Configuring Secure Sockets Layer (SSL)

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

Follow these steps to configure Secure Sockets Layer:

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

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

2. Store the identity and trust.

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

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

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

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

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

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

   For additional information, refer to the following topics:

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

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

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

Setting Up an Application Keystore

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

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

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

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

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

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

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

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

   For example:

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

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

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

   For WebLogic Server:

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

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

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

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

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

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

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

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

Deploying Inbound WebServices (IWS)

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

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

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

Follow these steps to deploy IWS:

UNIX

1. Enable the Web Services Functionality:
   a. cd $SPLEBASE/bin
   b. Execute configureEnv.sh –a

   Select option 50 and set the option "Enable Web Services Functionality" to true. Enter "P" to process.
2. Execute initialSetup.sh:

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

3. Set the classpath:

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

4. Execute the following command:

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

   Select y

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

```
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 command:

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

   Select y

6. Execute the command below in %SPLEBASE%\bin.
   Note that the application server should be up before running the command.

   ```
   iwsdeploy.cmd
   ```

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

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

- Install and configure application stack (Oracle Utilities Application Framework and the product application)

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

- Review domain templates (Simple /Complex)
- Execute config.sh and enter the path of the domain template file
- Configure domain
- Complete domain configuration

  Note: Configure nodemanager.properties and setDomainEnv.sh

- Update SPLEBASE (ENVIRON.INI)

Detailed Description

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

$SPLEBASE/tools/domaintemplates

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

The Simple Domain Template is for use with one machine and does not include a Weblogic cluster, this domain configuration is similar to current delivered embedded splapp domain, with the exception that there will be two Weblogic servers (utilities_server1 and a "Admin Server").

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

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

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

- Demo certificates (the demo certificates will need to be updated for production use)
- Setting of XML Registry Settings
- Setting of Default users and groups
- Machine configuration
- Default Users and Groups
  - Note for 12.1.3 and 12.2.1 versions: The Users and Groups match the delivered values delivered with the embedded domain.
  - Note for 12.2.1: Set the password for SYSUSR and ouafjndi through the Weblogic console.
- JTA Settings
- Node Manager Settings
- WebLogic Server
- JRF Restricted (Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar only)
- JMS Global Flush Queues (Oracle-Utilities-Simple-Unix-12.2.1.1.0.jar only)

Configure Node Manager Properties to allow SSL (12.1.3 Templates Only)

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

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

- CustomIdentityKeyStorePassPhrase=
- CustomIdentityPrivateKeyPassPhrase=

Set these to the value “0uaf_demo_c3rt”

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

Configure setDomainEnv.sh Script (12.1.3 Templates Only)

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

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

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

Configure setUserOverrides.sh (12.2.1 Templates Only)

Change environmental variables here, as needed by your implementation.

- Edit setUserOverrides.sh and add the values below to JAVA_OPTIONS: For AIX, the parameters below also need to be added to JAVA_OPTIONS.

```
-
Djavax.xml.transform.TransformerFactory=org.apache.xalan.processor
.TransformerFactoryImpl -
Djavax.xml.validation.SchemaFactory:http://www.w3.org/2001/
XMLSchema=org.apache.xerces.jaxp.validation.XMLSchemaFactory
```

Update Domain Home Location

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

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

```
================================================
```

4. 02. Configuration Option: Domain Home Location

   Current Value <ENTER>:

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

   Enter Value: <Enter your domain home location>

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

Update setDomainEnv.sh (12.1.3 Templates Only)

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

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

Database Patching

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

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

To generate the jar file:

1. Initialize a command shell:

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

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

   In the following example, replace the variables

   - $SPLEBASE with the Full directory name that you installed the application into
   - `<YOUR_ENVIRONMENT_NAME>` with the name you gave to the environment at installation time

   To initialize the environment enter:

   ```
   $SPLEBASE/bin/splenviron.sh -e <YOUR_ENVIRONMENT_NAME>
   ```

   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 example below you should replace the following variables:

   - %SPLEBASE%: The Full directory name that you installed the application into
   - `<YOUR_ENVIRONMENT_NAME>`: 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 <YOUR_ENVIRONMENT_NAME>
   ```

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
   ```

   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
   ```

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

Overview of Database Patching Application

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

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

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

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

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

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

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

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

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

Unix Example:
The TOOLSBIN location is set to /ouaf/dbpatch/bin

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

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_43040_BLD001,slc04lds:1522:Z143Q12C"
```

- Sample Execution – Prompting for a Password

```
./ouafDatabasePatch.sh  -p "-t O -d
CISADM_Z1_12C_43040_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
```

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"
```

- 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 8

Installing Optional Products

This section describes the optional products that can be installed. These should be completed after installing Oracle Utilities Work and Asset Management. These products include:

- Oracle BI Publisher
- Esri ArcGIS Server

Oracle BI Publisher

This section describes the steps required to configure Oracle Utilities Work and Asset Management and Oracle BI Publisher to support an Oracle BI Publisher reporting solution. This section includes:

- Supported BI Publisher Versions
- About Oracle BI Publisher Enterprise
- Configuring the System to Enable Reports
- Sample Reports Supplied with the Product
- Sample Reports Supplied with the Product

Supported BI Publisher Versions

At the time of this release BI Publisher 11g (11.1.1.7.0) is supported on both Windows and Unix/Linux.

About Oracle BI Publisher Enterprise

Oracle BI Publisher Enterprise provides the tools for:

- Making reports available over the web (establishing the required report server processes)
- Integrating reports with the Oracle Utilities Work and Asset Management system
- Scheduling reports to run on a regular basis

- Managing instances of the reports that have been created by a previous run
- Managing user access to the report instances

Installing Oracle BI Publisher Enterprise

This section assumes that you have already installed Oracle BI Publisher Enterprise such that requests can be pointed to the Oracle BI Publisher Enterprise.

> **Note:** If you are running the BI Publisher server on a Linux or Unix server that does not have an X Server installed, reports that contain images may not be properly generated.
>
> To fix this, specify the following property at the java command line:
>
> `-Djava.awt.headless=true`

Configuring the System to Enable Reports

This section describes the steps needed to configure your system to enable reports, including:

- Configuring the System to Invoke Oracle BI Publisher Enterprise Real-time
- Interfacing with Oracle BI Publisher Enterprise Batch Scheduler

Configuring the System to Invoke Oracle BI Publisher Enterprise Real-time

In order to invoke Oracle BI Publisher Enterprise from within Oracle Utilities Work and Asset Management, the system must be configured accordingly.

Specifying Reporting Tool Options

The following information should be defined on Reporting Tool Options table:

- **Reporting Server** is the web server URL where the reporting tool is installed.
- **Reporting Folder** defines the name of the directory on the Oracle BI Publisher server where reports are located. The Oracle Utilities Work and Asset Management reporting tool algorithm constructs the URL needed to open Oracle BI Publisher Enterprise based on the information provided on Reporting Options.

  The same folder name should be used as a report folder in Oracle BI Publisher Enterprise where reports are published.

Reporting Tool Algorithm

The base product provides an Installation Options system event called Reporting Tool which should contain an algorithm which invokes the reporting tool in real-time. Oracle Utilities Work and Asset Management provides an algorithm type called F1-BIPR-INV, which invokes Oracle BI Publisher Enterprise.

This algorithm relies on information defined in the Reporting Options table: the reporting server and folder names for accessing the reporting tool. The algorithm constructs several strings, for example, the URL of the BI Publisher, information about

the report being requested and user info in the format expected by Oracle BI Publisher Enterprise. The Java program returns the correct URL to the browser. The browser then opens a BI Publisher Enterprise window with the appropriate URL.

To use the F1-BIPR-INV algorithm type to invoke Oracle BI Publisher Enterprise, perform the following steps:

1. Create an algorithm for this algorithm type.
2. On the installation options, add an entry to the algorithm collection with an algorithm entity of Reporting Tool and indicate the algorithm created in the previous step.

Interfacing with Oracle BI Publisher Enterprise Batch Scheduler

Presently Oracle Utilities Work and Asset Management does not provide support for batch jobs with Oracle BI Publisher. Please use Oracle BI Publisher directly in order to schedule reports to run in batch.

Sample Reports Supplied with the Product

The system provides several sample reports that may be used by your organization as a starting point for creating a new report. The following sections provide instructions on how to set up your implementation environment to use the sample reports.

If you would like to use any of the sample reports, you need to perform some steps to be able to execute them in an implementation environment. This section walks you through the steps needed, including:

- Unzipping Oracle Utilities Work and Asset Management Report Files
- Oracle Functions and Packages
- Publishing the Sample Reports in Oracle BI Publisher Enterprise
- Preparing Oracle BI Publisher Enterprise Server For integration
- Copying a Report Definition from the Demonstration Database
- Copying a Report Definition from the Demonstration Database

Unzipping Oracle Utilities Work and Asset Management Report Files

Unzip the 'Oracle Utilities Work and Asset Management v2.2.0.0.0 Reports.zip' file from the installation media into an empty directory. This directory is referred to as the reports extract folder.

> **Note**: By default, the reports provided are read only. You will need to reset the permissions on the files before making any changes, for example, to configure the default data source.

Oracle Functions and Packages

Each report has one or more corresponding database functions and packages that store the business logic to fetch the data from the database. This data is then presented in the report.

The installation media contains the required database functions and packages. These files are in the reports extract folder under ..\WAM-V22000-Reports\BIPublisher\functions\oracle.

The prerequisite for Oracle Utilities Work and Asset Management reports to work against the target database is setting up of a RPTUSER database user. This user should have read access to all Oracle Utilities Work and Asset Management database objects and execution privilege on the stored procedures that the reports access.

The steps involved in setting up the RPTUSER are:

1. Create or refresh the Oracle functions and packages.
    - Using SQLPLUS, log in to the target database as the user CISADM.
      This user owns Oracle Utilities Work and Asset Management schema objects.
    - Execute the script CDX_rptfn.sql by entering the following command at the SQL prompt:
      SQL> @CDX_rptfn.sql
      ("SQL>" denotes the SQL prompt and doesn't need to be typed).
2. Create the RPTUSER.
    - Navigate to the Database\Oracle folder.
    - Edit the file CDX_rptuser.sql to match your requirements.
      Ensure that you review the user password and the default and temporary tablespace names for the user.
    - Log in to the target database as a DBA user using SQLPLUS.
    - Execute the script by entering following command at SQL prompt:
      SQL> @CDX_rptuser.sql
3. Compile the report function.
   SQL> @CDX_compfn.sql
4. Configure security.
   This involves generating synonyms in RPTUSER and granting it privileges to execute the stored procedures and read the Oracle Utilities Work and Asset Management tables. The utility prompts you to answer for the following questions:
    - Enter the Oracle user that owns the schema (e.g. CISADM): **CISADM**
    - Enter the password for the CISADM user: **CISADM**
    - Enter the name of the Oracle Database: *Your_db*
    - Enter a comma-separated list of Oracle users in which synonyms need to be created (e.g. cisuser,cisread): **RPTUSER**
    - Select the following options:
        - (A/a): Generate security for All objects in the Database?
        - (O/o): Generate security for specific Objects inputted in this terminal?
        - (F/f): Generate security for specific objects generated from an input File?

    <<<< select A to generate security to all objects >>>>

The utility runs and configures security for the Oracle Utilities Work and Asset Management objects.

Publishing the Sample Reports in Oracle BI Publisher Enterprise

The installation media contains sample reports provided with the system. The report files are in the reports extract folder under ..\WAM-V22000-Reports\BIPublisher\reportFiles.

Configuring Oracle BI Publisher Enterprise

This section assumes that you have already installed Oracle BI Publisher Enterprise.

> **Note:** If you install Oracle BI Publisher Enterprise in a location other than the default installation directory, adjust the path descriptions to match your actual install directories.

The first step you need to take in order to use any of the samples is to publish the report in Oracle BI Publisher Enterprise. You need to create a folder in Oracle BI Publisher Enterprise named as defined on Reporting Options table in Oracle Utilities Work and Asset Management and publish the report extracted to the reports extract folder.

Create a folder named WAM in the *BI_Repository_Path*\Reports folder. Copy all Oracle BI Publisher sample reports into the WAM folder.

> **Note:** To check for the location of your BI repository path, log in to the BI console as an Administrator and go to **Administration, Server Configuration.** If the repository type is File System, the path will be seen in Catalog region. If the repository type is not File System you cannot load the sample reports.

Refer to the *Oracle BI Publisher Enterprise* documentation for more information.

Preparing Oracle BI Publisher Enterprise Server For integration

The WAM Reporting Options Table should include the following information about Reporting Server and Folder:

- Reporting Folder: WAM
- Reporting Server: URL of reporting server. For example: http://sf-ugbu.splwg.com:9704

If you want to have a different name for your reporting folder, you can rename the WAM folder on the server and put the corresponding value on the Reporting options table.

Accessing the BI Publisher Enterprise Server

1. Access the BI Publisher Enterprise Server as Administrator.
2. On the Admin tab define a **JDBC Connection** section under **Data Sources**, and add a new data source using **Add Data Source**.

   Create a new Data Source named WAM with connection details pointing to the Oracle Utilities Work and Asset Management database using the RPTUSER credentials set up in the prior section.
3. Test Connection to make sure the Database connection is successful and save changes using **Apply**.

Configuring a new group in WebLogic

1. Configure a group within WebLogic for Authentication called “BIConsumer”.

2. Create an Application Role called "WAM Reports" to access the BI Publisher reports.
3. Associate the member "BIConsumer" with the "WAM Reports" Application Role. The role will now be visible from within the BI Publisher Enterprise. Within BI Publisher Enterprise, for the Role Name WAM **Reports** you just created, click on **Add Folders** to add the WAM sample reports to the Allowed Folders.

   Do the same for Role Name WAM **Reports**. Click on **Add Data Sources** to add the Oracle Utilities Work and Asset Management data source to the Allowed Data Sources.
4. To include appropriate Roles for Role Name WAM **Reports**, click on **Add Role**.

Uploading Reports to BI Publisher

From BI publisher server console, upload reports to BI Publisher. To do so:

1. Select **Administration**, **System Maintenance**, and then click **Server Configuration**.
2. Scroll down to the **Catalog** section and verify that the path to the repository folder is correct in the BI Publisher repository field and is pointing to the **WAM** folder to which reports were copied.
3. Click **Upload to BI Presentation Catalog** to upload the reports to BI Publisher.

Verifying the Data Model Details

From BI publisher server console, verify that the data model details are correct. To do so:

1. From the Reports folder, select the data model of the report.
2. Click **Edit** to edit the data model.
3. Select **Data Model** from the tree on the left.
4. Verify that the following are correct:
   - Default Data Source: Set the data source name created in Step 2 of section Accessing the BI Publisher Enterprise Server.
   - Oracle DB Default Package: Set this to **W1_BI_RPT.**
   - XML Output Options: Ensure that the option **Include Parameters Tag** is checked.
5. Verify that the data model is pointing to the correct report. Select a report from the Reports folder and click **Edit**. Hover on the Data Model link to check it is pointing to the correct data model.

   To modify the data model, click the magnifying glass icon and select the correct data model.

Verifying Sample BI Publisher Reports on the Server:

1. Log in to Oracle BI Publisher Server as a user belonging to BIConsumers.
2. Verify that all sample reports provided appear in the WAM folder.

Single-sign-on and more sophisticated security must be tailored to the specific implementation.

Copying a Report Definition from the Demonstration Database

In order to use one of the sample reports in your Oracle Utilities Work and Asset Management region, you must define the meta-data for the report. The demonstration database contains the report definition and all its related data for each sample report.

The data present in the demonstration application should be manually created in the database that is being used by the current Oracle Utilities Work and Asset Management application.

1. To copy the data, access the data in Oracle Utilities Work and Asset Management demonstration application using the following menu navigation:

   Admin -> R -> Report Definition

2. Click on Search. In the report code field, enter % and click search.

For each report visible in the search results, follow these steps to copy the report definitions:

1. Click on the report to see the report definition details.
2. In the current Oracle Utilities Work and Asset Management application, access the same menu navigation to manually create the records.

   Admin -> R -> Report Definition

3. Click **Add**.
4. Enter the same values for the report definition that are present in the report definition details of the Oracle Utilities Work and Asset Management demo environment.
5. Click **Save**.

Esri ArcGIS Server

The GIS Integration uses ESRI ArcGIS server to allow users to view asset layers on a map, and to create and view work requests and work orders on the map.

Refer to the GIS integration section of the *Oracle Utilities Work and Asset Management Administrative Guide* for configuration information after installing.

> **Note**: For Esri integration functionality, you must purchase Esri ArcGIS Server software or online cloud subscription from Esri.
>
> For demonstration purposes, the Oracle Utilities Work and Asset Management demo data was configured to use the Esri Water Distribution Network demo map provided by Esri (http://www.arcgis.com/home/item.html?id=b0608f7dccdf480eb8d02771ebe72d87). Instructions on how to load and acquire this demo content are available from Esri.

Perform the following for initial installation and importing the GIS metadata:

- Installing the Esri ArcGIS Server
- Verifying Prerequisites

- Importing Feature Classes to Database
- Deploying Map Packages

Notes on SSL:

- Oracle Utilities Work and Asset Management is set up with SSL (https) *enabled* as default.
- Esri ArcGIS is set up with SSL (https) *disabled* as default.

Supported Esri ArcGIS Server Versions

At the time of this release Esri ArcGIS Server 10.4.1 and ArcGIS Portal 10.4.1 are supported.

Installing the Esri ArcGIS Server

1. Install ArcGis on a server different from the Oracle Utilities Work and Asset Management server.
2. Refer to instructions available on the ArcGIS (http://resources.arcgis.com/) website for more information.

Verifying Prerequisites

Ensure that the following prerequisite conditions are met, before proceeding with importing feature classes to database and deploying map packages:

- ArcGIS for Desktop Software must be installed.
- ArcGIS for Server Software must be installed.
- ESRI ArcGIS DB must be created.
- ESRI ArcGIS DB connection must be created.
- ESRI ArcGIS DB must be registered in ArcGIS server.

Importing Feature Classes to Database

1. Download the Oracle Utilities Work and Asset Management v2.2.0.0.0 ESRI Integration component from the Oracle Utilities Work and Asset Management v2.2.0.0.0 package.
2. Copy the file to the server on which ArcGIS is installed.
3. Unzip the downloaded file to some directory <MetadataDir>.
4. For each XML file in <MetadataDir>/xmlWorkspaceDocument, follow these setps to import Feature Classes to the database:
   a. Launch the **ArcCatalog** application from the **Start Menu** -> **Arcgis**.
   b. Right click on the Database connection. Click **Connect**.
   c. Right click on the Database connection again.

d. Select **Import->XML Workspace Document**.

e. On the **Import XML Workspace Document** dialog, select **Schema Only** option.

f. Browse and select the XML file to import from <MetadataDir>/ xmlWorkspaceDocument directory.

g. Click **Next**.

h. Click **Finish**.

Deploying Map Packages

1. Launch the **ArcMap** application from **Start Menu** -> **ArcMap.**
2. In the **ArcMap** application, click **Geoprocessing** -> **Arc Toolbox**.
3. Perform the following steps to extract the 'Map Package' for each map package file(.mpk) in <MetadataDir>/mapPackage directory:
   a. From the ArcToolbox tree, expand **Data Management Tools**.
   b. Expand **Package**.
   c. Select **Extract Package**.
   d. In the **Input Package** field, provide the location of .mpk file.
   e. In the **Output Folder** field, provide the target directory to which map package file should be extracted.
   f. Click **OK**.
4. Perform the following steps once for each extracted map package file:
   a. Launch the **ArcMap** application from **Start Menu** -> **ArcMap.**
   b. In the ArcMap application, click **File** -> **Open** to open the Extracted Map Package Document. Use the file under v101 directory.
   c. Once the document is opened, under the **Layers** tree on the left, right click on the layer and **Select Layer Properties**.
   d. On the **Layer Properties** dialog, click the **Source** tab.
   e. Click **Set Data Source** to set the data source.
   f. Navigate to the database connection and select the Feature Class (Example: SDE.W1_Activity) corresponding to the currently selected layer (Example: W1_Activity) and click **Add**.
   g. Click **Apply** on the **Layer Properties** dialog.
   h. In the Arc Map application, share the Map Document as a service using **File->Share As->Service**.
   i. Click **Service**.
   j. Select **Publish a Service** and click **Next**.
   k. Select the server connection and provide the Service Name and click **Next**.
   l. Click **Create New Folder** and enter a folder name relevant to the environment.

m. Click **Continue**.

n. In the service editor, select **Capabilities** tab from the left hand side menu and select **Feature Access** check box.

o. Click **Publish** button at the top right corner of the service editor dialog. You should see a success message after the publish is successful.

Appendix A

Installation Menu Functionality

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

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

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

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

Please also note the following:

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

Installation Menu Functionality Details

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

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

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

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

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

The following prompt will appear when executing the installation utility:

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

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

Encryption Methods

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

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

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

Appendix B

Installation and Configuration Worksheets

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

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

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

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

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

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

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

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

Menu Block 2: Keystore Options

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

<SPLEBASE>/ks/.ouaf_keystore

<SPLEBASE>/ks/.ouaf_storepass

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

Please review the section on configuring the OUAF Keystore in the *Oracle Utilities Work and Asset Management Security Guide* for information on setting up the keystore properly.

Keystore options include:

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

Menu Block 50: Environment Installation Options

Environment installation options include:

Menu Option	Name Used in Documentation	Customer Install Value
Environment Mount Point	SPLDIR	
Log File Mount Point	SPLDIROUT	
Environment Name	SPLENVIRON	
Web Application Server Type	SPLWAS	

Menu Option	Name Used in Documentation	Customer Install Value
Installation Application Viewer Module	WEB_ ISAPPVIEWER	
Install Demo Generation Cert Script	CERT_INSTALL_ SCRIPT	
Install Sample CM Source Code	CM_INSTALL_ SAMPLE	

Menu Block 1: Environment Description

The environment description menu option includes:

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

Menu Block 2: [WebLogic] Business Application Server Configuration

Weblogic Business Application Server configuration options include:

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

Menu Block 3: [WebLogic] Web Application Server Configuration

Weblogic Web Application Server configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Server Host	WEB_WLHOST	
Weblogic SSL Port Number	WEB_WLSSLPORT	
Weblogic Console Port Number	WLS_ADMIN_PORT	
Weblogic Additional Stop Arguments	ADDITIONAL_STOP_WEBLOGIC	
Web Context Root	WEB_CONTEXT_ ROOT	
WebLogic JNDI User ID	WEB_WLSYSUSER	
WebLogic JNDI Password	WEB_WLSYSPASS	
WebLogic Admin System User ID	WLS_WEB_ WLSYSUSER	
WebLogic Admin System Password	WLS_WEB_ WLSYSPASS	
WebLogic Server Name	WEB_WLS_ SVRNAME	
Web Server Application Name	WEB_APP	
Deploy Using Archive Files	WEB_DEPLOY_EAR	
Deploy Application Viewer Module	WEB_DEPLOY_ APPVIEWER	
Enable The Unsecured Health Check Service	WEB_ENABLE_ HEALTHCHECK	
MDB RunAs User ID	WEB_IWS_MDB_ RUNAS_USER	
Super User Ids	WEB_IWS_SUPER_ USERS	

Menu Block 4 - Database Configuration

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

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

Menu Block 5 - General Configuration Options

The general configuration options include:

Menu Option	Name Used in Documentation	Customer Install Value
Batch RMI Port	BATCH_RMI_PORT	

Menu Option	Name Used in Documentation	Customer Install Value
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 - SSL Certificate Keystore (Weblogic Only)

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

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

Menu Block 7 - OUAF TrustStore Options

The OUAF truststore configuration is required for IWS.

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

Advanced Menu Options

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

Unix:

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

Windows

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

Menu Block 50 - WebLogic Advanced Environment Miscellaneous Configuration

Weblogic advanced environment miscellaneous configurations include:

Menu Option	Name Used in Documentation	Customer Value Install
OUAF DBMS Scheduler User	OUAF_DBMS_SCHEDULER_USER	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Server Enabled	BATCHENABLED	
Online JVM Batch Number of Threads	BATCHTHREADS	
Online JVM Batch Scheduler Daemon Enabled	BATCHDAEMON	
Enable Batch Edit Funtionality	BATCHEDIT_ ENABLED	
Batch Online Log Directory	BATCH_ONLINE_LOG_DIR	
Enable Web Services Functionality	WEBSERVICES_ ENABLED	
IWS deployment target	WLS_CLUSTER_NAME	
Web Admin Server Host	WEB_ADMIN_SERVER	
GIS Service Running on the same Web Server	GIS	
GIS Service URL	GIS_URL	
GIS WebLogic System User ID	GIS_WLSYSUSER	
GIS WebLogic System Password	GIS_WLSYSPASS	
Online Display Software Home	ONLINE_DISPLAY_HOME	
Max Queries To Hold In Cache Across All Threads	XQUERIES_TO_ CACHE	
Seconds Timeout Flush Cache Completely	XQUERY_CACHE_ FLUSH_TIMEOUT	
Cloud Restriction URLs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Cloud White List Full Path	CLOUD_WHITE_LIST_PATH	
Cloud Custom White List Full Path	CLOUD_CUSTOM_ WHITE_LIST_PATH	

Menu Block 51 - WebLogic Advanced Environment Memory Configuration

Weblogic advanced environment memory configurations include:

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

Menu Block 51 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
Web Application Cache Settings	WEB_L2_CACHE_MODE	
Web Server Port Number	WEB_WLPORT	
WebLogic Overload Protection	WLS_OVERRIDE_PROTECT	
Domain Home Location	WLS_DOMAIN_HOME	
Batch Cluster URL	WEB_BATCH_CLUSTER_URL	
Strip HTML Comments	STRIP_HTML_COMMENTS	
Authentication Login Page Type	WEB_WLAUTHMETHOD	
Web Form Login Page	WEB_FORM_LOGIN_PAGE	
Web Form Login Error Page	WEB_FORM_LOGIN_ERROR_PAGE	
Application Viewer Form Login Page	WEB_APPVIEWER_FORM_LOGIN_ PAGE	
Application Viewer Form Login Error Page	WEB_APPVIEWER_FORM_LOGIN_ ERROR_PAGE	
Help Form Login Page	WEB_HELP_FORM_LOGIN_PAGE	
Help Form Login Error Page	WEB_HELP_FORM_LOGIN_ERROR _PAGE	
Web Security Role	WEB_PRINCIPAL_NAME	
Web Principal Name	WEB_PRINCIPAL_NAME	
Application Viewer Security Role	WEB_APPVIEWER_ROLE_NAME	
Application Viewer Principal Name	WEB_APPVIEWER_PRINCIPAL_ NAME	
This is a development environment	WEB_ISDEVELOPMENT	
Preload All Pages on Startup	WEB_PRELOADALL	
Maximum Age of a Cache Entry for Text	WEB_MAXAGE	
Maximum Age of a Cache Entry for Images	WEB_MAXAGEI	
JSP Recompile Interval (s)	WEB_wlpageCheckSeconds	

Menu Block 53 - Advanced Web Application Configuration

Advanced web application configurations include:

Menu Option	Name Used in Documentation	Customer Install Value
SPML SOAP Trace Setting	OIM_SPML_SOAP_D EBUG_SETTING	
SPML IDM Schema Name	OIM_SPML_UBER_S CHEMA_NAME	
SPML OIM Name Space	OIM_SPML_NAME_S PACE	
SPML OIM Enclosing Element	OIM_SPML_SOAP_EL EMENT	

Menu Block 54 - WebLogic Diagnostics

Weblogic diagnostic options include:

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

Menu Block 53 - OIM Configuration Settings

OIM Configuration Settings include:

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

Menu Block 55 - URI, File and URL Related Options

URI, File and URL Related Options include:

Table 1:

Menu Option	Name Used in Documentation	Customer Install Value
Restriction URLs Enable	CLOUD_RESTRICTION_URLS_ENABLE	
Custom SQL Security	CUSTOM_SQL_ SECURITY	
White List Full Path	CLOUD_WHITE_LIST_PATH	
Custom White List Full Path	CLOUD_CUSTOM_ WHITE_LIST_PATH	
Substitution Variable List File Location	CLOUD_SUBSTITUTION_VARIABLE_LIST_FILE_LOCATION	
Directory For Variable F1_CMA_FILES	CLOUD_LOCATION_ F1_MIGR_ASSISTANT_FILES	
The following list identifies entries that are visible on the menu but will be deprecated in a future release so they should not be used:		
Directory For Variable F1_BI_EXTRACTS	CLOUD_LOCATION_F1_BI_EXTRACT	
Directory For Variable F1_INTERNAL_FILES	CLOUD_LOCATION_F1_PROD_INTER_ FILES	
Directory For Variable F1_CUST_APP_BASE	CLOUD_LOCATION_F1_CUST_APP_ BASE	
Directory For Variable F1_PROCESS_DIR	CLOUD_LOCATION_F1_PROCESS_DIR	
Directory For Variable F1_SVC_CATALOG_ WSDL_DIR	CLOUD_LOCATION_ F1_SVC_CATALOG_ WSDL_DIR	
Directory For Variable F1_PDB_EXTRACTS	CLOUD_LOCATION_F1_PDB_EXTRACTS	

Appendix C

Common Maintenance Activities

This section provides frequently-used commands that you use to perform common maintenance activities, such as starting and stopping the environment and thread pool worker, modifying the configuration items.

Run the following commands to perform these common tasks:

To Initialize the Environment

1. Go the directory <install_dir>/bin.
2. Run the following command:

   UNIX

   ```
   ./splenviron.sh -e <Env_Name>
   ```

   Windows Server

   ```
   splenviron.cmd -e <Env_Name>
   ```

To Start the WebLogic Server

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh start
   ```

   Windows

   ```
   spl.cmd start
   ```

To Stop the WebLogic Server

1. Initialize the environment.
2. Run the following command:

   UNIX

   ```
   ./spl.sh -a stop
   ```

Windows

```
spl.cmd -a stop
```

To Start the Thread Pool Worker

1. Initialize the environment.
2. Run the following command:

UNIX

```
$SPLEBASE/bin/threadpoolworker.sh -d Y -p DEFAULT=20 L2OFF=1 -l2
OFF
```

Windows

```
%SPLEBASE%\bin\threadpoolworker.cmd -d Y -p DEFAULT=20 L2OFF=1 -l2
OFF
```

To Stop the Thread Pool Worker

1. Initialize the environment.
2. Run the following command:

UNIX

```
./spl.sh -b stop
```

Windows

```
spl.cmd -b stop
```

To Modify the Configuration Values

1. Initialize the environment.
2. Run the following command:

UNIX

```
configureEnv.sh
```

Windows

```
configureEnv.cmd
```

The configuration utility launches menu items. Select any Menu option.

3. Change the menu values.
4. After you change the menu values, press P to write the changes to the configuration file.
5. To apply the changes to the environment, run the initial setup script:

```
initialSetup.sh,
```

To Modify the Advanced Menu Option Values

1. Initialize the environment.

   ```
   The configuration utility launches menu items.
   ```

2. Run the following command:

   UNIX

   ```
   configureEnv.sh -a
   ```

   Windows

   ```
   configureEnv.cmd -a
   ```

3. Select any menu option.
4. Change the menu values.
5. To apply the changes to the environment, run initial setup script:

   ```
   initialSetup.sh
   ```