Oracle Utilities Smart Grid Gateway

Installation Guide

Release 2.2.0 Service Pack 1

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ORACLE

Oracle Utilities Smart Grid Gateway Installation Guide

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Preface

This guide provides an overview of installing Oracle Utilities Smart Grid Gateway and is intended for anyone interested in the installation process. This section includes:

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

To complete installation you should have:

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

Related Documents

The following documentation is included with this release.

Installation Guides and Release Notes

- *Oracle Utilities Smart Grid Gateway Release Notes*
- *Oracle Utilities Smart Grid Gateway Quick Install Guide*
- *Oracle Utilities Smart Grid Gateway Installation Guide*
- *Oracle Utilities Smart Grid Gateway Database Administrator Guide*
- *Oracle Utilities Smart Grid Gateway Licensing Information User Manual*

Configuration and User Guides

- *Oracle Utilities Meter Data Management / Oracle Utilities Smart Grid Gateway V2.2.0 Service Pack 1 Business User Guide*
- *Oracle Utilities Meter Data Management / Oracle Utilities Smart Grid Gateway V2.2.0 Service Pack 1 Administrative User Guide*

Supplemental Documents

- *Oracle Utilities Smart Grid Gateway Server Administration Guide*
- *Oracle Utilities Smart Grid Gateway 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 that appears on the screen, or text that you enter.

Acronyms

The following acronyms and terms are used in this document:

Acronym	Definition
ADF	Oracle Application Development Framework
EAR	Enterprise Archive
EJB	Enterprise JavaBeans
HTML	HyperText Markup Language
JAR	Java Archive
JDBC	Java database connectivity
JMX	Java Management Extensions
JNDI	Java Naming and Directory Interface
JSP	JavaServer Pages
JVM	Java Virtual Machine.
MPL	Multi Purpose Listener
OUAF	Oracle Utilities Application Framework

Acronym	Definition
OAM	Oracle Access Manager
OIM	Oracle Identity Management
ONS	Oracle Notification Service
OSB	Oracle Service Bus
Oracle RAC FCF	Oracle Real Application Clusters Fast Connection Failover
RMI	Remote Method Invocation
SOAP	Simple Object Access Protocol
SOA	Service-oriented architecture
SPLEBASE	The location where the application will be installed.
SPLOUTPUT	This location is used for storing batch log files and output from batch jobs
WAR	Web application Archive
WLS	WebLogic
XAIApp	XML Application Integration

Additional Resources

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

Chapter 1

Introduction

This chapter provides an overview of the installation of Oracle Utilities Smart Grid Gateway. It includes the following sections:

- Installation Overview
- Application Architecture
- Installation Components
- Installation Types
- Media Pack Components

Installation Overview

Installing Oracle Utilities Smart Grid Gateway involves the following steps:

> **Note**: For installing of Oracle Utilities Service Order Management, please refer to chapter Installing Oracle Utilities Service Order Management.

1. Review the different tiers of the application architecture as described in Application Architecture.
2. Understand the hardware requirements for installing the application and the supported platforms for the application and database servers as described in Chapter 2**:** Supported Platforms and Hardware Requirements.

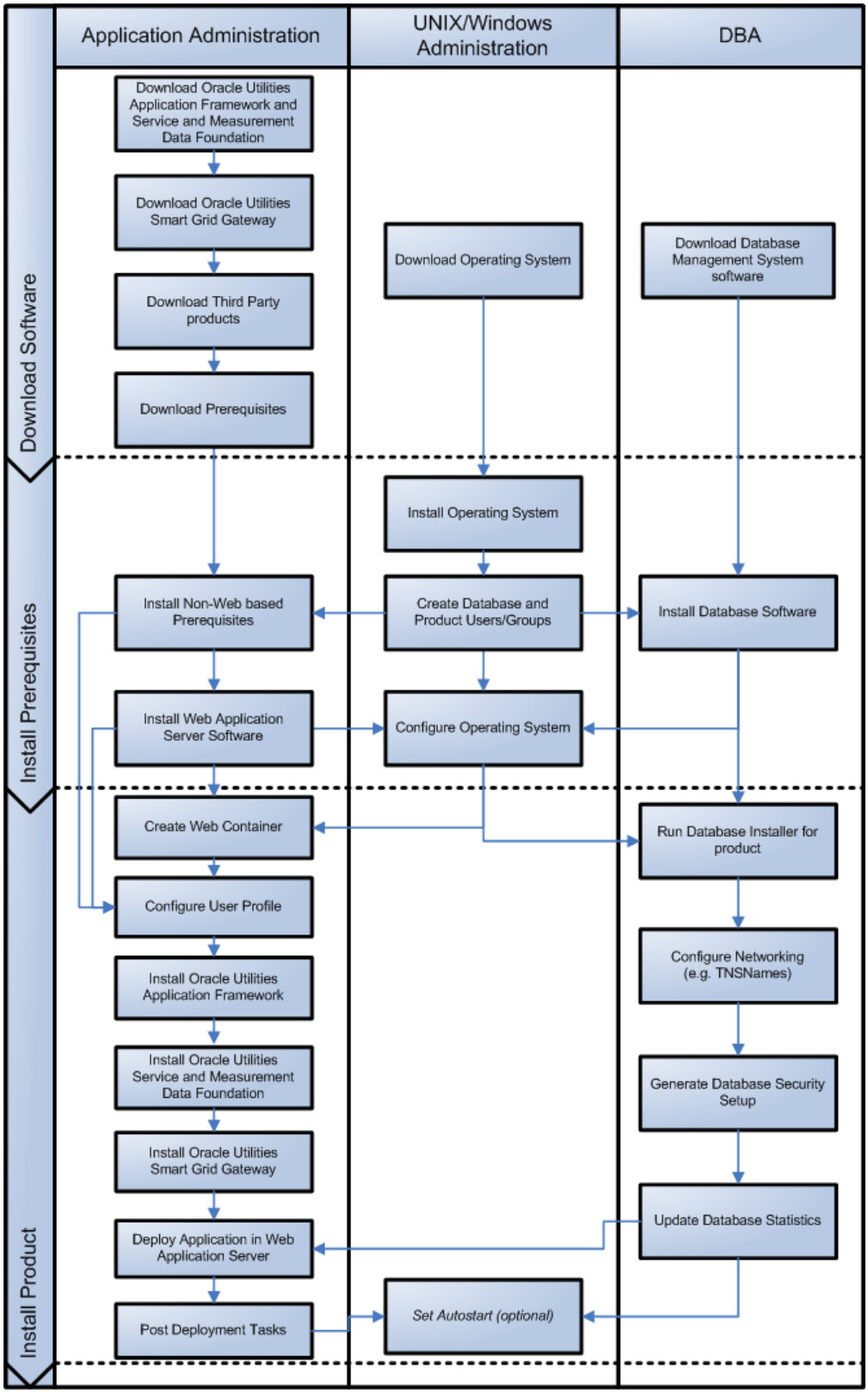
   > **Note:** The installation and administration of the database server tier is described in detail in the document *Oracle Utilities Smart Grid Gateway Database Administrator's Guide.*

3. Plan your installation as described in Chapter 3**:** Planning the Installation. This chapter includes lists of the required software for each supported combination of operating system and application server.
4. Install the database as described in the document *Oracle Utilities Smart Grid Gateway Database Administrator's Guide.*

   > **Note**: When implementing Oracle Utilities Smart Grid Gateway with Oracle Utilities Meter Data Management, both the Smart Grid Gateway and Meter Data Management database components should be installed in the same database.

5. Install all required third-party software as described in Installing Prerequisite Software. The required software is listed for each supported combination of operating system and application server.
6. Install the Oracle Utilities Application Framework.
7. Install the Oracle Utilities Service and Measurement Data Foundation for the application.
8. Install Oracle Utilities Smart Grid Gateway.
9. Complete the post-installation and configuration tasks for your Oracle Utilities Smart Grid Gateway adapter as described in Chapter 7**:** Configuring the Oracle Utilities Smart Grid Gateway Adapters.
10. Follow the installation guidelines described in Chapter 9**:** Additional Tasks.

The following diagram provides an overview of the steps to install and configure Oracle Utilities Smart Grid Gateway:



Application Architecture

The Oracle Utilities Smart Grid Gateway application is deployed on multiple tiers.

Refer to the *Oracle Utilities Smart Grid Gateway Server Administration Guide* for a more detailed description of the application architecture and individual tiers.

Tier 1: Desktop/Client, or Presentation Tier

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

Tier 2: Web Application Server, Business Application Server, Batch Server Tier

This tier is implemented in a web application server, business application server, or the batch server. The business application component can be installed as part of the web application server, or as a separate component. Except where explicitly noted, most of the Oracle Utilities Smart Grid Gateway installation documentation assumes that the web application and business application servers reside together. The batch infrastructure also runs within this tier. There can be multiple batch server instances serving the application.

Tier 3: Database, or Persistence Tier

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

Installation Components

The Oracle Utilities Smart Grid Gateway product installation consists of the following components:

- Database Components
    - Oracle Utilities Application Framework database
    - Oracle Utilities Service and Measurement Data Foundation database
    - Oracle Utilities Smart Grid Gateway database
- Application Components
    - Oracle Utilities Application Framework application
    - Oracle Utilities Service and Measurement Data Foundation application
    - Oracle Utilities Smart Grid Gateway application

For a successful installation, you must install ALL of the above components.

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 - A base installation, typically used for a production environment.
- Demo Installation - A base installation with pre-populated demo data, typically used for demonstration or training purposes.
- Upgrade Installation - An upgrade installation from version 2.1.0.3.0 and 2.2.0 to version 2.2.0.1.0.

Please see Recommendations for Creating a Production Environment for information about which installation type is appropriate for a production environment.

The following sections describe these installation types in detail.

Initial Installation

This installation type is applicable when installing Oracle Utilities Smart Grid Gateway for the first time or from scratch. For an initial install, you must install all of the following components:

- Database components

  Refer to the "Initial Install" section of the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide* for more information.

- Application components
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework Single Fix Pre-Requisite Rollup for Oracle Utilities Service and Measurement Data Foundation
  - Oracle Utilities Service and Measurement Data Foundation application
  - Oracle Utilities Smart Grid Gateway application

  See Installing Oracle Utilities Smart Grid Gateway—Initial Installation for the instructions for installing these components.

Demo Installation

This installation type is applicable when installing a demo application of Oracle Utilities Smart Grid Gateway 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 Smart Grid Gateway Database Administrator's Guide* for more information.

- Application components
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework Single Fix Pre-Requisite Rollup for Oracle Utilities Service and Measurement Data Foundation
  - Oracle Utilities Service and Measurement Data Foundation application
  - Oracle Utilities Smart Grid Gateway application

  See Installing Oracle Utilities Smart Grid Gateway—Demo Installation for the instructions for installing these components.

Upgrade Installation

This installation type is applicable when upgrading Oracle Utilities Smart Grid Gateway from version 2.1.0.3.0 and 2.2.0.0.0 to 2.2.0.1.0.0.

> **Note:** If you have a version prior to 2.1.0.3.0, you must upgrade to 2.1.0.3.0 before upgrading to 2.2.0.1.0.

For an upgrade, you must upgrade all of the following components:

- Database components

  Refer to the "Upgrade Install" section of the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide* for more information.

- Application components
  - Oracle Utilities Application Framework application
  - Oracle Utilities Application Framework Single Fix Pre-Requisite Rollup for Oracle Utilities Service and Measurement Data Foundation
  - Oracle Utilities Service and Measurement Data Foundation application
  - Oracle Utilities Smart Grid Gateway application

  See Installing Oracle Utilities Smart Grid Gateway—Upgrade Installation for the instructions for installing these components.

Recommendations for Creating a Production Environment

For a production environment, Oracle recommends that you use the Initial Installation installation type as described above.

If there is any custom configuration that needs to be migrated from a development or "gold" environment into production, the migration can be done by using the Configuration Migration Assistant (CMA). Please refer to the appendix "Configuration Migration Assistant" in the *Oracle Utilities Smart Grid Gateway Configuration Guide* for more details about CMA.

Oracle does not recommend creating a production environment by using the Demo Installation installation type, or by cloning an existing Demo installation.

Media Pack Components

The Oracle Utilities Smart Grid Gateway Media Pack consists of the following packages:

Documentation Packages

- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 Release Notes
- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 Quick Install Guide
- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 Install Documentation
- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 User Documentation
- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 Supplemental Documentation
- Oracle Utilities Service Order Management V2.2.0.1.0 User Documentation

Installation Packages

- Oracle Utilities Smart Grid Gateway V2.2.0.1.0 Multiplatform

  Download this from Oracle Software Delivery Cloud for your adapter.

Chapter 2

Supported Platforms and Hardware Requirements

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

- Software and Hardware Considerations
- Operating Systems and Application Servers
- Hardware Requirements
- Application Server Memory Requirements
- Support for Software Patches and Upgrades

Software and Hardware Considerations

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

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

- On which hardware platform and operating system will Oracle Utilities Smart Grid Gateway be deployed?
- On which web server product will Oracle Utilities Smart Grid Gateway deploy?
- On which database product will Oracle Utilities Smart Grid Gateway deploy?
- Do you plan to deploy multiple Oracle Utilities Smart Grid Gateway instances on the same physical server?
- How do you plan to deploy Oracle Utilities Smart Grid Gateway?
    - Web/application/database on the same physical server
    - Web/application on one server and database on separate server
    - Each component on its own server

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

The final hardware and software decisions must comply with the specific requirements of Oracle Utilities Smart Grid Gateway, as described in the rest of this chapter.

Operating Systems and Application Servers

This section provides information on the operation system, web browser and OSB and SOA adapter combinations that are supported. Please refer to the notes below the table for additional details regarding WebLogic support.

The table below details the MINIMUM operating system and application server combinations on which this version of Oracle Utilities Smart Grid Gateway 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) *OSB Adapters *SOA Adapters ((Not applicable for MV90 Adapter for Itron)	AIX 7.1 TL01+ AIX 7.2 TL00+	POWER	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+ WebLogic 12.2.1.0	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+ WebLogic 12.2.1.0	Oracle 12.1.0.1+
	Oracle Solaris 11	SPARC	WebLogic 12.1.3.0+ WebLogic 12.2.1.1+ WebLogic 12.2.1.0	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+ WebLogic 12.2.1.0	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.
- Although Oracle Utilities Smart Grid Gateway is supported only on the Oracle WebLogic application server, it can write to any JMS compliant queuing application by way of Oracle Service Bus. For more information about Oracle Service Bus, refer to the Oracle Fusion Middleware Developers Guide for Oracle Service Bus.
- **OSB and SOA Adapters are only supported on WebLogic version 12.2.1.0. The browser version supports versions 12.1.3.0+ and 12.2.1.1+.
- Oracle Utilities Service Order Management is only supported on WebLogic version 12.1.3.0+.
- Customers must download Oracle WebLogic Server from the Oracle Software Delivery Cloud.

Oracle Database Server

The following Oracle Database Server editions are supported:

- Oracle Database Enterprise Edition
- Oracle Database Standard Edition

  Note: Oracle Database Enterprise Edition and the Partitioning and Advanced Compression options are strongly recommended in all situations.

Oracle VM Support
This version of Oracle Utilities Smart Grid Gateway 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

This section provides information on client side hardware requirements for Oracle Utilities Smart Grid Gateway.

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

* The Recommended configuration supports better performance of the client.

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

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	5 GB minimum	This is the location where the application and framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files.
Log Location	2 GB minimum	This location is used for storing batch log files and output from batch jobs. The size of this space should be influenced by which batches are run and how often, and the amount of debugging information that is collected.

Location	Size	Usage
Location of the application web work files on the web servers	1.5 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.
Oracle Data Area	4 GB minimum	This location is where the Oracle database data files are stored. The size of this space should be based on the requirements of the production environment. For an initial or demo database install 4 GB should be sufficient.

Support for Software Patches and Upgrades

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

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

The exception to this rule 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 chapter provides information for planning an Oracle Utilities Smart Grid Gateway installation, including:

Before You Install

Refer to My Oracle Support for up-to-date additional information about installing Oracle Utilities Smart Grid Gateway.

Prerequisite Oracle Utilities Application Framework Patches

Oracle Utilities Application Framework patches must be installed prior to installing Oracle Utilities Smart Grid Gateway. Refer to the *Oracle Utilities Work and Asset Management or Oracle Utilities Operational Device 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 JEE components within Oracle WebLogic, as you would with other JEE 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 Smart Grid Gateway, you must install prerequisite software.

Refer to the respective installation documentation of the software for instructions on downloading and installing.

Prerequisite Software for Database Server

The prerequisite software for the database component of Oracle Utilities Smart Grid Gateway is as follows:

- **Oracle Database Server 12.1.0.1+** - This is required for installing the database component of the Oracle Utilities Smart Grid Gateway product. The following version of the database server is supported:
  - Oracle Database Enterprise Edition

  Note: Oracle Database Enterprise Edition and the Partitioning and Advanced Compression options are strongly recommended in all situations.

Prerequisite Software for Application Server

The prerequisite software for the application component of Oracle Utilities Smart Grid Gateway is as follows:

- Oracle Database 12c Client
- JDK 1.8.0_102+ (64-bit)
- Oracle WebLogic 12c (12.1.3.0+) or Oracle WebLogic 12c (12.2.1.1+)

  Note: For 12.2.1.1+, only WebLogic Fusion Middleware Infrastructure Installer should be used.
- Hibernate 4.1.0 Final, Hibernate 5.5.4 Final
- Oracle Service Bus 12.2.1.0

Oracle Service Bus is required for an implementation that plans to use a productized adapter or the Adapter Development Kit to process meter reading or device event data.

Note: Oracle Service Bus 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0

- Oracle SOA Suite 12.2.1.0

Oracle SOA Suite (specifically, BPEL Process Manager) is required for an implementation that plans to use a productized adapter or the Adapter Development Kit to implement two-way communications for processing meter commands.

Note: Oracle SOA Suite 12.2.1.0 requires Oracle WebLogic Server (12.2.1.0).

Oracle Utilities Service Order Management only supports Oracle Service Bus/Oracle SOA Suite 12.2.1.0

Oracle Security Fix Updates

It is recommended that you keep the Oracle prerequisite software up to date with the latest security fixes provided by Oracle.

Web Browser Requirements

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

Browsers	Windows OS
Internet Explorer 11 Firefox ESR 45	Microsoft 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. The sections for this chapter are:

- AIX 7.1 TL01+/AIX 7.2 TL00+ Application Server
- Oracle Linux 6.5+/7.x or Red Hat Linux 6.5+/7.x Operating System
- Oracle Solaris 11 Application Server
- Windows Server 2012 R2 Application Server

AIX 7.1 TL01+/AIX 7.2 TL00+ Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
AIX 7.1 TL01+ AIX 7.2 TL00+	POWER 64-bit	Oracle WebLogic 12c (12.1.3.0+) 64-bit or Oracle WebLogic 12c (12.2.1.1.+) 64-bit

AIX Operating System 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 Smart Grid Gateway Administrator User ID	cissys	

Description	Default Value	Customer Defined Value
Oracle Utilities Smart Grid Gateway User Group	cisusr	

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

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

By default, the cissys 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.

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

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

```
set +o noclobber
```

Security Configuration

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

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 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 all the 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

User	Group	Description
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 Client 12c — Runtime Option

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

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

IBM Java Software Development Kit 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 a web application server.

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

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

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

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

Hibernate 4.1.0 FINAL

You must install Hibernate 4.1.0 before installing Oracle Utilities Smart Grid Gateway.

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

1. Create a Hibernate jar external depot:

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

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

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

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

4. Extract the contents of the archive file:

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

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

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-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

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

   Download the hibernate-search-5.5.4.Final-dist.zip file from:

   https://sourceforge.net/projects/hibernate/files/hibernate-search/

7. Click the "5.5.4.Final" link to download the zip file.

8. Extract the contents of the archive file:

```
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 12c (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.

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 Fusion Middleware Infrastructure Installer.

Oracle Service Bus 12.2.1.0

Oracle Service Bus is required for an implementation that plans to use a productized adapter or the generic adapter to process meter reading or device event data.

> **Note:** Oracle Service Bus 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle Service Bus must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle Service Bus can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle SOA Suite 12.2.1.0

Oracle SOA Suite, specifically BPEL Process Manager, is required for an implementation that plans to use a productized adapter or the generic adapter to implement two-way communications for processing meter commands.

> **Note:** Oracle SOA Suite 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle SOA Suite must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle SOA Suite can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle Linux 6.5+/7.x or Red Hat Linux 6.5+/7.x Operating System

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

Supported Application Servers

Operating System	Chipsets	Application Server
Oracle Linux 6.5+,7.x (64-bit) based on Red Hat Enterprise Linux (64- bit)	x86_64	Oracle WebLogic 12c (12.1.3.0+) 64-bit or Oracle WebLogic 12c (12.2.1.1+) 64-bit

Oracle Linux or Red Hat Enterprise Linux Operating System 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 Smart Grid Gateway Administrator User ID	cissys	
Oracle Utilities Smart Grid Gateway User Group	cisusr	

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

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

By default, the cissys 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.

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

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

```
set +o noclobber
```

Security Configuration

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

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 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 all the 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 Client 12c — Runtime Option

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

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

Oracle Java Development Kit Version 8.0 Update 102+, 64-bit

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

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

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

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

Hibernate 4.1.0 FINAL

You must install Hibernate 4.1.0 before installing Oracle Utilities Smart Grid Gateway.

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

1. Create a Hibernate jar external depot:

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

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

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

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

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

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

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-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

6. Another package needs to be downloaded in order to get the jboss-logging-3.3.0.Final.jar.
   Download the hibernate-search-5.5.4.Final-dist.zip file from:

   https://sourceforge.net/projects/hibernate/files/hibernate-search/
7. Click the "5.5.4.Final" link to download the zip file.
8. Extract the contents of the archive file:

```
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 12c (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.

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 Fusion Middleware Infrastructure Installer.

Oracle Service Bus 12.2.1.0

Oracle Service Bus is required for an implementation that plans to use a productized adapter or the generic adapter to process meter reading or device event data.

> **Note:** Oracle Service Bus 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle Service Bus must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle Service Bus can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle SOA Suite 12.2.1.0

Oracle SOA Suite, specifically BPEL Process Manager, is required for an implementation that plans to use a productized adapter or the generic adapter to implement two-way communications for processing meter commands.

> **Note:** Oracle SOA Suite 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle SOA Suite must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle SOA Suite can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle Solaris 11 Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
Oracle Solaris 11 (64-bit)	SPARC	Oracle WebLogic 12c (12.1.3.0+) 64-bit or Oracle WebLogic 12c (12.2.1.1+) 64-bit

Solaris Operating System 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 Smart Grid Gateway Administrator User ID	cissys	
Oracle Utilities Smart Grid Gateway User Group	cisusr	

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

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

By default, the cissys 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.

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

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

```
set +o noclobber
```

Security Configuration

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

The following users and group categories must be defined to implement this security. For demonstration purposes the following users and groups will be used. These users must be created according to industry standards (including password policies). All users should be created with a default umask of 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 all the 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 Client 12c — Runtime Option

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

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

Oracle Java Development Kit Version 8.0 Update 102+, 64-bit

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

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

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

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

Hibernate 4.1.0 FINAL

You must install Hibernate 4.1.0 before installing Oracle Utilities Smart Grid Gateway.

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

1. Create a Hibernate jar external depot:

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

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

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

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

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

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

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-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
```

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

   Download the hibernate-search-5.5.4.Final-dist.zip file from:

   https://sourceforge.net/projects/hibernate/files/hibernate-search/

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

```
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 12c (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.

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 Fusion Middleware Infrastructure Installer.

Oracle Service Bus 12.2.1.0

Oracle Service Bus is required for an implementation that plans to use a productized adapter or the generic adapter to process meter reading or device event data.

> **Note:** Oracle Service Bus 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle Service Bus must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle Service Bus can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle SOA Suite 12.2.1.0

Oracle SOA Suite, specifically BPEL Process Manager, is required for an implementation that plans to use a productized adapter or the generic adapter to implement two-way communications for processing meter commands.

> **Note:** Oracle SOA Suite 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle SOA Suite must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle SOA Suite can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Windows Server 2012 R2 Application Server

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

Supported Application Servers

Operating System	Chipsets	Application Server
Windows Server 2012 R2 (64-bit)	x86_64	Oracle WebLogic 12c (12.1.3.0+) 64-bit or Oracle WebLogic 12c (12.2.1.1+) 64-bit

Oracle Client 12c — Runtime Option

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

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

Oracle Java Development Kit Version 8.0 Update 102+, 64-bit

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

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

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

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

Hibernate 4.1.0 FINAL

You must install Hibernate 4.1.0 before installing Oracle Utilities Smart Grid Gateway.

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

1. Create a Hibernate jar external depot:

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

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

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

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

4. Extract the contents of the archive file:

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

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

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-transaction-api_1.1_spec-1.0.0.Final.jar $HIBERNATE_JAR_DIR
   ```

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

Download the hibernate-search-5.5.4.Final-dist.zip file from:

https://sourceforge.net/projects/hibernate/files/hibernate-search/

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

```
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 12c (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.

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 Fusion Middleware Infrastructure Installer.

Oracle Service Bus 12.2.1.0

Oracle Service Bus is required for an implementation that plans to use a productized adapter or the generic adapter to process meter reading or device event data.

> **Note:** Oracle Service Bus 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle Service Bus must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle Service Bus can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Oracle SOA Suite 12.2.1.0

Oracle SOA Suite, specifically BPEL Process Manager, is required for an implementation that plans to use a productized adapter or the generic adapter to implement two-way communications for processing meter commands.

> **Note:** Oracle SOA Suite 12.2.1.0 requires Oracle WebLogic Server 12.2.1.0.

Oracle SOA Suite must be installed prior to the installation of Oracle Utilities Smart Grid Gateway. Oracle SOA Suite can be downloaded from the Oracle Fusion Middleware download web site:

http://www.oracle.com/technetwork/middleware/fusion-middleware/downloads/index.html

Readiness Checklist

The following checklist guides you through the installation process of Oracle Utilities Smart Grid Gateway. The details for each step are presented in subsequent chapters.

1. Confirm that the recommended hardware is ready. Refer to Operating Systems and Application Servers for more details.
2. Install prerequisite software. Refer to the Installing Prerequisite Software for more details.
3. Ensure that you have downloaded the Oracle Utilities Smart Grid Gateway V2.2.0.1 components.
4. Go through the Appendix B**:** Installation and Configuration Worksheets to understand the configuration menu.
5. Determine the type of the installation:
    - **Initial Installation** - For initial installation follow the instructions mentioned in the Chapter 4**:** Installing Oracle Utilities Smart Grid Gateway—Initial Installation.
    - **Demo Installation** - For demo installation follow the instructions mentioned in the chapter Chapter 5**:** Installing Oracle Utilities Smart Grid Gateway—Demo Installation.
    - **Upgrade Installation** - For upgrade installation follow the instructions mentioned in the chapter Chapter 6**:** Installing Oracle Utilities Smart Grid Gateway—Upgrade Installation.
6. Perform post-installation tasks.

Chapter 4

Installing Oracle Utilities Smart Grid Gateway—Initial Installation

This chapter provides instructions for installing Oracle Utilities Smart Grid Gateway for the first time or from scratch. This chapter includes:

Before You Install

Refer to My Oracle Support for up-to-date additional information on Oracle Utilities Smart Grid Gateway.

Initial Installation Procedure

The initial installation procedure consists of:

Database Component Installation

Installation of the database component of Oracle Utilities Smart Grid Gateway must be complete before you can proceed with the following sections. Refer to the section "**Initial Install**" of the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide*, which provides instructions on installing the database component.

> **Note**: When implementing Oracle Utilities Smart Grid Gateway with Oracle Utilities Meter Data Management, both the Smart Grid Gateway and Meter Data Management database components should be installed in the same database.

Application Components Installation

A successful installation consists of the following steps:

- Installing the Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4) Application Component
- Installing Oracle Utilities Application Framework V4.3.0.4 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0
- Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component
- Installing the Oracle Utilities Smart Grid Gateway Application Component

Installing the Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4) Application Component

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

- Copying and Decompressing Install Media
- Setting Permissions for the cistab file in UNIX
- Installing the Application Component

Copying and Decompressing Install Media

The Oracle Utilities Application Framework V4.3.0 Service Pack 4 installation file is delivered in jar format for both UNIX and Windows platforms. If you are planning to install multiple Oracle Utilities Application Framework V4.3.0 Service Pack 4 environments operated by different Oracle Utilities administrator user ids, you must complete each of the following installation steps for each administrator userid.

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 Smart Grid Gateway V2.2.0.1.0 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. Unzip Oracle Utilities Smart Grid Gateway V2.2.0.1.0 to get SGG_V2.2.0.1.0.zip. Then, copy the SGG_V2.2.0.1.0.zip file from the delivered package to <TEMPDIR>.

   If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.
5. Decompress the file:

```
cd <TEMPDIR>
unzip SGG_V2.2.0.1.0.zip
cd App
```

Setting Permissions for the cistab file in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the ../App/FW.V4.3.0.4.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities 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 it is your responsibility to take a backup prior to the installation process. The installation utility does not create a backup of existing environment.

Installing the Application Component

This section outlines the steps for installing the application component of Oracle Utilities Application Framework 4.3.0 Service Pack 4.

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 ../App/FW.V4.3.0.4.0.
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:

   ```
   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:

```
install.cmd
```

The Oracle Utilities Application Framework specific menu appears.

5. Follow the messages and instructions that are produced by the application installation utility.
6. Select each menu item to configure the values. For detailed description of the values, refer to Appendix B**:** Installation and Configuration Worksheets.
7. Below are the mandatory list of configurable items along with descriptions for a few items. Where you see <Mandatory>, enter values suitable to your environment. You can assign default values to the rest of the menu items.

```
**********************************
* Environment Installation Options *
**********************************
 1. Third Party Software Configuration
       Oracle Client Home Directory: <Mandatory>
       Web Java Home Directory:      <Mandatory>
       Child JVM Home Directory:
       COBOL Home Directory:
       Hibernate JAR Directory: <Mandatory>
       ONS JAR Directory:
       Web Application Server Home Directory: <Mandatory>
       ADF Home Directory:
       OIM OAM Enabled Environment:
2. Keystore Options
      Store Type:                                          JCEKS
      Alias:                                               ouaf.system
      Alias Key Algorithm:                                 AES
      Alias Key Size:                                      128
     HMAC Alias:                                        ouaf.system.hmac
      Padding:                                             PKCS5Padding
      Mode:                                                CBC
50. Environment Installation Options
       Environment Mount Point: <Mandatory> - Install Location
       Log Files Mount Point:<Mandatory> - ThreadPoolWorker Logs
                                           Location
       Environment Name:<Mandatory>
       Web Application Server Type:                         WLS
       Install Application Viewer Module:                   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 Number:     <Mandatory>
      WebLogic Console Port Number:  <Mandatory>
      WebLogic Additional Stop Arguments:
      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:                                   SYSUSER

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: <Mandatory>
      JDBC Database User ID: <Mandatory>
      JDBC Database Password: <Mandatory>
      Database Name:                            <Mandatory>
      Database Server:                          <Mandatory>
      Database Port:                            <Mandatory>
      ONS Server Configuration: <Mandatory>
      Database Override Connection String: <Mandatory>
      Character Based Database: <Mandatory>
      Oracle Client Character Set NLS_LANG: AMERICAN_AMERICA.AL32UTF8

5. General Configuration Options
      Batch RMI Port:                          <Mandatory> - RMI port
                                                           for batch
      RMI Port number for JMX Business:
      RMI Port number for JMX Web:
      JMX Enablement System User ID:
      JMX Enablement System Password:
      Coherence Cluster Name:                   <Mandatory> - Unique
                                                      name for batch
      Coherence Cluster Address:                <Mandatory> - Unique
                                                   Multicast address
      Coherence Cluster Port:                   <Mandatory> - Unique
                                               port for batch cluster
      Coherence Cluster Mode:                   <Mandatory> - prod
```

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

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):
```

9. 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.
10. Once the install has finished, the installation log location appears 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. You can now install Oracle Utilities Service and Measurement Data Foundation as described in the following section.

Installing Oracle Utilities Application Framework V4.3.0.4 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0

1. Navigate to ../App/FW43040_Rollup.
2. Refer to the Readme.txt for instructions on installing the Oracle Utilities Application Framework 4.3.0.4 Prerequisite Single Fixes.

These patches are also available for download separately from My Oracle Support.

See Appendix D for a list of the patches contained in the rollup.

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component

This section describes how to install the application component of Oracle Utilities Service and Measurement Data Foundation, including:

- Copying and Decompressing Install Media
- Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0
- Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

Copying and Decompressing Install Media

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

The Oracle Utilities Service and Measurement Data Foundation is delivered as a separate installation package Please refer to the Supported Platforms and Hardware Requirements chapter for installation details regarding the database and operating system versions supported for the Service and Measurement Data Foundation. Also see the section Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Navigate to ../App/SMDF.V2.2.0.1.0.

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0

This section outlines the steps for installing the Service and Measurement Data Foundation:

Preparing for the Installation

1. Log on as Oracle Utilities Service and Measurement Data Foundation Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Application

1. Execute the script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

The configuration menu for the Oracle Utilities Service and Measurement Data Foundation Application appears.

2. Select menu item 8 to configure OSB.

   Use the completed OSB configuration worksheet to assist you in this step. See the Service and Measurement Data Foundation Installation and Configuration Worksheets.

3. Select menu item 9 to configure SOA.

   Use the completed SOA configuration worksheet to assist you in this step. See the Service and Measurement Data Foundation Installation and Configuration Worksheets.

4. Select menu item 10 to configure the SOA Configuration Plan.

   Use the completed SOA Configuration Plan (MDF) worksheet to assist you in this step. See the Installation and Configuration Worksheets.

5. When you are done with the parameter setup, choose option P to proceed with the installation.

Installation of Oracle Utilities Service and Measurement Data Foundation Application Server is complete if no errors occurred during installation.

Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

This section applies to an Oracle Utilities Smart Grid Gateway configuration in which Oracle Service Bus (OSB) or Oracle SOA Suite is installed on a separate host from the Oracle Utilities Application Framework's host. In this configuration, the Oracle Utilities installation scripts must have access to the libraries in the OSB and SOA servers' directories to deploy OSB projects and SOA composites successfully.

Follow these procedures to configure access to a remote OSB server:

- Create a network share to the osb folder within the Middleware Home on the remote OSB server.
- Provide the following values for Menu Item 8 (OSB Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation:

  Note: Use the completed OSB configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

  - **OSB Home** is the location of the osb folder, accessed by way of network share.
  - **OSB Host Server** is the host name of the OSB server.
  - **OSB Port Number** is the port of the OSB admin server.
  - **OSB SSL Port Number** is the port of the OSB SSL admin server.

Follow these procedures to configure access to a remote SOA Suite server:

- Create a network share to the soa folder within the Middleware Home on the remote SOA Suite server.
- Provide the following values for Menu Item 9 (SOA Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation.

  Note: Use the completed SOA configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

  - **SOA Home** is the location of the soa folder, accessed by way of network share.

- **SOA Host Server** is the host name of the SOA managed server.
- **SOA Port Number** is the port of the SOA managed server.
- **SOA SSL Port Number** is the port of the SOA SSL managed server.

Installing the Oracle Utilities Smart Grid Gateway Application Component

This section describes how to install the application component of Oracle Utilities Smart Grid Gateway, including:

- Installing the MV90 Adapter for Itron
- Installing the Adapter Development Kit
- Installing the Adapter for Networked Energy Services
- Installing the Adapter for Itron OpenWay
- Installing the Adapter for Landis+Gyr
- Installing the Adapter for Sensus RNI
- Installing the Adapter Silver Spring Networks

Installing the MV90 Adapter for Itron

This section describes the installation of the MV90 Adapter for Itron, including:

- Preinstallation Tasks for the MV90 Adapter
- Installing the MV90 Adapter

Preinstallation Tasks for the MV90 Adapter

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway MV90 Adapter, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the MV90 Adapter

To install the Oracle Utilities Smart Grid Gateway MV90 Adapter:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

2. Choose option P to proceed with the installation.

Once the install has finished successfully, execute the postinstallation steps described in Configuration Tasks for the MV90 Adapter.

Installing the Adapter Development Kit

This section describes the installation of the Adapter Development Kit, including:

- Preinstallation Tasks for the Adapter Development Kit
- Installation Tasks for the Adapter Development Kit

Preinstallation Tasks for the Adapter Development Kit
This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to ../App/SGG.V2.2.0.1.0 folder.

Installation Tasks for the Adapter Development Kit
This section describes the installation of the Adapter Development Kit, including:

- Initializing the Service and Measurement Data Foundation
- Installing the Adapter Development Kit

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

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

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

3. Stop the environment if running.

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

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

Installing the Adapter Development Kit

To install the Oracle Utilities Smart Grid Gateway Adapter Development Kit:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The Configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 21 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Smart Grid Gateway Installation and Configuration Worksheets in Appendix B.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute post-installation steps described Configuration Tasks for the Adapter Development Kit.

Installing the Adapter for Networked Energy Services

This section describes the installation of the Adapter for Networked Energy Services, including:

- Preinstallation Tasks for the Adapter for Networked Energy Services
- Installing the Adapter for Networked Energy Services

Preinstallation Tasks for the Adapter for Networked Energy Services

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Serversfor versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Networked Energy Services

To install the Oracle Utilities Smart Grid Gateway Adapter for Networked Energy Services:

1. Execute the following install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 17 to configure the URI for the NES head-end system web services.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B: Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Networked Energy Services.

Installing the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Preinstallation Tasks for the Adapter for Itron OpenWay
- Installation Tasks for the Adapter for Itron OpenWay

Preinstallation Tasks for the Adapter for Itron OpenWay

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Installation Tasks for the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Initializing the Service and Measurement Data Foundation
- Installing the Adapter for Itron OpenWay

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

UNIX

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

Windows

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

Installing the Adapter for Itron OpenWay

To install the Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 22 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

   Once the install has finished successfully, execute post-installation steps described in Configuration Tasks for the Adapter for Itron OpenWay.

Installing the Adapter for Landis+Gyr

This section describes the installation of the Adapter for Landis+Gyr, including:

- Preinstallation Tasks for the Adapter for Landis+Gyr
- Installing the Adapter for Landis+Gyr

Preinstallation Tasks for the Adapter for Landis+Gyr

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Servers for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Landis+Gyr

To install the Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   > **Note:** On UNIX, ensure that you have the proper execute permission on install.sh. The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 16 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Landis+Gyr.

Installing the Adapter for Sensus RNI

This section describes the installation of the Adapter for Sensus RNI, including:

- Preinstallation Tasks for the Adapter for Sensus RNI
- Installing the Adapter for Sensus RNI

Preinstallation Tasks for the Adapter for Sensus RNI

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Servers for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Sensus RNI

To install the Oracle Utilities Smart Grid Gateway Adapter for Sensus RNI:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 18 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Sensus RNI.

Installing the Adapter Silver Spring Networks

This section describes the installation of the Adapter for Silver Spring Networks, including:

- Preinstallation Tasks for the Adapter for Silver Spring Networks
- Installing the Adapter for Silver Spring Networks

Preinstallation Tasks for the Adapter for Silver Spring Networks

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Silver Spring Networks

To install the Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 19 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. Select menu item 20 to configure the JMS source destination bridge.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

4. Select menu item 70 to configure the test harness.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

5. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute post-installation steps described in Configuration Tasks for the Adapter for Silver Spring Networks.

After the Installation

After completing 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 Appendix B**:** Installation and Configuration Worksheets for details.
4. Confirm that the database is ready.
5. Start the application server. For instructions, refer to Appendix B**:** Installation and Configuration Worksheets.
6. To operate the application, refer to the following section.

Chapter 5

Installing Oracle Utilities Smart Grid Gateway—Demo Installation

This chapter provides instructions for setting up a demo application of Oracle Utilities Smart Grid Gateway for demonstration or training purposes. This chapter includes:

- Before You Install
- Demo Installation Procedure
- After the Installation

Before You Install

Refer to My Oracle Support for up-to-date additional information on Oracle Utilities Smart Grid Gateway.

Demo 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 Smart Grid Gateway must be complete before you can proceed with the following sections. Refer to the section "**Demo Install**" of the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide*, which provides instructions on installing the database component.

> **Note**: When implementing Oracle Utilities Smart Grid Gateway with Oracle Utilities Meter Data Management, both the Smart Grid Gateway and Meter Data Management database components should be installed in the same database.

Application Components Installation

A successful installation consists of the following steps:

- Installing the Oracle Utilities Application Framework Application V4.3.0 Service Pack 4 (4.3.0.4.0 Component)
- Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0
- Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component
- Installing the Oracle Utilities Smart Grid Gateway Application Component

Installing the Oracle Utilities Application Framework Application V4.3.0 Service Pack 4 (4.3.0.4.0 Component)

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

- Copying and Decompressing Install Media
- Setting Permissions for the cistab file in UNIX
- Installing the Application Component

Copying and Decompressing Install Media

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 userid.

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. Unzip Oracle Utilities Smart Grid Gateway V2.2.0.1.0 to get SGG_V2.2.0.1.0.zip. Then, copy the file SGG_V2.2.0.1.0.zip 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>
unzip SGG_V2.2.0.1.0.zip
cd App
```

Setting Permissions for the cistab file in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the ../App/FW.V4.3.0.4.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities 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 it is your responsibility to take a backup prior to the installation process. The installation utility does not create a backup of existing environment.

Installing the Application Component

This section outlines the steps for installing the application component of Oracle Utilities Application Framework V4.3.0 Service Pack 4.

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 ../App/FW.V4.3.0.4.0.
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

   ```
   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

```
install.cmd
```

5. The Oracle Utilities Application Framework specific menu appears.
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 Appendix B**:** Installation and Configuration Worksheets.
8. Below are the mandatory list of configurable items along with descriptions for a few items. Where you see <Mandatory>, enter values suitable to your environment. You can assign default values to the rest of the menu items.

```
**********************************
* Environment Installation Options *
**********************************
 1. Third Party Software Configuration
       Oracle Client Home Directory: <Mandatory>
       Web Java Home Directory:      <Mandatory>
       Child JVM Home Directory:
       COBOL Home Directory:
       Hibernate JAR Directory: <Mandatory>
       ONS JAR Directory:
       Web Application Server Home Directory: <Mandatory>
       ADF Home Directory:
       OIM OAM Enabled Environment:
2. Keystore Options
      Store Type:                                          JCEKS
      Alias:                                               ouaf.system
      Alias Key Algorithm:                                 AES
      Alias Key Size:                                      128
      HMAC Alias:                                        ouaf.system.hmac
      Padding:                                             PKCS5Padding
      Mode:                                                CBC
50. Environment Installation Options
       Environment Mount Point: <Mandatory> - Install Location
       Log Files Mount Point:<Mandatory> - ThreadPoolWorker Logs
                                           Location
       Environment Name:<Mandatory>
       Web Application Server Type:                         WLS
       Install Application Viewer Module:                   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 Number:     <Mandatory>
      WebLogic Console Port Number:  <Mandatory>
      WebLogic Additional Stop Arguments:
      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:                                   SYSUSER

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: <Mandatory>
      JDBC Database User ID: <Mandatory>
      JDBC Database Password: <Mandatory>
      Database Name:                            <Mandatory>
      Database Server:                          <Mandatory>
      Database Port:                            <Mandatory>
      ONS Server Configuration: <Mandatory>
      Database Override Connection String: <Mandatory>
      Character Based Database: <Mandatory>
      Oracle Client Character Set NLS_LANG: AMERICAN_AMERICA.AL32UTF8

5. General Configuration Options
      Batch RMI Port:                          <Mandatory> - RMI port
                                                           for batch
      RMI Port number for JMX Business:
      RMI Port number for JMX Web:
      JMX Enablement System User ID:
      JMX Enablement System Password:
      Coherence Cluster Name:                   <Mandatory> - Unique
                                                      name for batch
      Coherence Cluster Address:                <Mandatory> - Unique
                                                   Multicast address
      Coherence Cluster Port:                   <Mandatory> - Unique
                                               port for batch cluster
      Coherence Cluster Mode:                   <Mandatory> - prod
```

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

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 has finished, the installation log location appears 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. You can now install Oracle Utilities Service and Measurement Data Foundation as described in the following section.

Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0

1. Create a <TEMPDIR> directory on the host server that is independent of any current or other working application environment.
2. Navigate to ../App/FW43040_Rollup.
3. Refer to the Readme.txt inside 'Application-Server-Multiplatform' file for instructions on installing the Oracle Utilities Application Framework 4.3.0 Service Pack 4 Prerequisite Single Fixes.

These patches are also available for download separately from My Oracle Support. See Appendix D for a list of the patches contained in the rollup.

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0 Application Component

This section describes how to install the application component of Oracle Utilities Service and Measurement Data Foundation, including:

- Copying and Decompressing Install Media
- Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0

- Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

Copying and Decompressing Install Media

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

The Oracle Utilities Service and Measurement Data Foundation is delivered as a separate installation package. Please refer to the chapter Supported Platforms and Hardware Requirements for installation details regarding the database and operating system versions supported for the Service and Measurement Data Foundation. Also see the section Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Navigate to the ../App/SMDF.V2.2.0.1.0 directory.

Installing Oracle Utilities Service and Measurement Data Foundation V2.2.0.1.0

This section outlines the steps for installing the Service and Measurement Data Foundation:

Preparing for the Installation

1. Log on as Oracle Utilities Service and Measurement Data Foundation Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Application

1. Execute the script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

The configuration menu for the Oracle Utilities Service and Measurement Data Foundation Application appears.

2. Select menu item 8 to configure OSB.

   Use the completed OSB configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

3. elect menu item 9 to configure SOA.

   Use the completed SOA configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

4. Select menu item 10 to configure the SOA Configuration Plan.

   Use the completed SOA Configuration Plan (MDF) worksheet to assist you in this step. See the Installation and Configuration Worksheets.

5. When you are done with the parameter setup, choose option P to proceed with the installation.

Installation of Oracle Utilities Service and Measurement Data Foundation Application Server is complete if no errors occurred during installation.

Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

This section applies to an Oracle Utilities Smart Grid Gateway configuration in which Oracle Service Bus (OSB) or Oracle SOA Suite is installed on a separate host from the Oracle Utilities Application Framework's host. In this configuration, the Oracle Utilities installation scripts must have access to the libraries in the OSB and SOA servers' directories to deploy OSB projects and SOA composites successfully.

Follow these procedures to configure access to a remote OSB server:

- Create a network share to the osb folder within the Middleware Home on the remote OSB server.
- Provide the following values for Menu Item 8 (OSB Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation:

  Note: Use the completed OSB configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

  - **OSB Home** is the location of the osb folder, accessed by way of network share.
  - **OSB Host Server** is the host name of the OSB server.
  - **OSB Port Number** is the port of the OSB admin.
  - **OSB SSL Port Number** is the port of the OSB SSL admin server.

Follow these procedures to configure access to a remote SOA Suite server:

- Create a network share to the soa folder within the Middleware Home on the remote SOA Suite server.
- Provide the following values for Menu Item 9 (SOA Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation

Note: Use the completed SOA configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

- **SOA Home** is the location of the soa folder, accessed by way of network share.
- **SOA Host Server** is the host name of the SOA server.
- **SOA Port Number** is the port of the SOA managed server.
- **SOA SSL Port Number** is the port of the SOA SSL managed server.

Installing the Oracle Utilities Smart Grid Gateway Application Component

This section describes how to install the application component of Oracle Utilities Smart Grid Gateway, including:

- Installing the MV90 Adapter for Itron
- Installing the Adapter Development Kit
- Installing the Adapter for Networked Energy Services
- Installing the Adapter for Itron OpenWay
- Installing the Adapter for Landis+Gyr
- Installing the Adapter for Sensus RNI
- Installing the Adapter Silver Spring Networks

Installing the MV90 Adapter for Itron

This section describes the installation of the MV90 Adapter for Itron, including:

- Preinstallation Tasks for the MV90 Adapter
- Installing the MV90 Adapter

Preinstallation Tasks for the MV90 Adapter

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway MV90 Adapter, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the MV90 Adapter

To install the Oracle Utilities Smart Grid Gateway MV90 Adapter:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

2. Choose option P to proceed with the installation.

Once the install has finished successfully, execute the postinstallation steps described in Configuration Tasks for the MV90 Adapter.

Installing the Adapter Development Kit

This section describes the installation of the Adapter Development Kit, including:

- Preinstallation Tasks for the Adapter Development Kit
- Installation Tasks for the Adapter Development Kit

Preinstallation Tasks for the Adapter Development Kit

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter Development Kit

This section describes the installation of the Adapter Development Kit, including:

- Initializing the Service and Measurement Data Foundation
- Installing the Adapter Development Kit

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter Development Kit

To install the Oracle Utilities Smart Grid Gateway Adapter Development Kit:

1. Execute the install script:

UNIX

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

Windows

```
install.cmd
```

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

The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 21 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Smart Grid Gateway Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described Configuration Tasks for the Adapter Development Kit.

Installing the Adapter for Networked Energy Services

This section describes the installation of the Adapter for Networked Energy Services, including:

- Preinstallation Tasks for the Adapter for Networked Energy Services
- Installing the Adapter for Networked Energy Services

Preinstallation Tasks for the Adapter for Networked Energy Services

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Serversfor versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Initializing the Service and Measurement Data Foundation

To initialize the Service and Measurement Data Foundation:

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX:

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

   Windows:

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Networked Energy Services

To install the Oracle Utilities Smart Grid Gateway Adapter for Networked Energy Services:

1. Execute the install script.

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 17 to configure the URI for the NES head-end system web services.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Networked Energy Services.

Installing the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Preinstallation Tasks for the Adapter for Itron OpenWay
- Installation Tasks for the Adapter for Itron OpenWay

Preinstallation Tasks for the Adapter for Itron OpenWay

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Initializing the Service and Measurement Data Foundation
- Installing the Adapter for Itron OpenWay

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

   ```
   %SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
   ```
3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Itron OpenWay

To install the Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 22 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B: Installation and Configuration Worksheets on page 4-46.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Itron OpenWay.

Installing the Adapter for Landis+Gyr

This section describes the installation of the Adapter for Landis+Gyr, including:

- Preinstallation Tasks for the Adapter for Landis+Gyr
- Installing the Adapter for Landis+Gyr

Preinstallation Tasks for the Adapter for Landis+Gyr

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Servers for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Landis+Gyr

To install the Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   > **Note:** On UNIX, ensure that you have the proper execute permission on install.sh. The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 16 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B: Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Landis+Gyr.

Installing the Adapter for Sensus RNI

This section describes the installation of the Adapter for Sensus RNI, including:

- Preinstallation Tasks for the Adapter for Sensus RNI
- Installing the Adapter for Sensus RNI

Preinstallation Tasks for the Adapter for Sensus RNI

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Servers for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Sensus RNI

To install the Oracle Utilities Smart Grid Gateway Adapter for Sensus RNI:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 18 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Sensus RNI.

Installing the Adapter Silver Spring Networks

This section describes the installation of the Adapter for Silver Spring Networks, including:

- Preinstallation Tasks for the Adapter for Silver Spring Networks
- Installing the Adapter for Silver Spring Networks

Preinstallation Tasks for the Adapter for Silver Spring Networks

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media
- Initializing the Service and Measurement Data Foundation

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Installing the Adapter for Silver Spring Networks

To install the Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 19 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. Select menu item 20 to configure the JMS source destination bridge.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

4. Select menu item 70 to configure the test harness.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

5. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Silver Spring Networks.

After the Installation

After completing 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 Appendix B**:** Installation and Configuration Worksheets for details.
4. Confirm that the database is ready.
5. Start the application server. For instructions, refer to Appendix B**:** Installation and Configuration Worksheets.
6. To operate the application, refer to the following section.

Chapter 6

Installing Oracle Utilities Smart Grid Gateway—Upgrade Installation

This chapter provides instructions for upgrading Oracle Utilities Smart Grid Gateway v2.1.0.3.0 and v2.2.0.0.0 to version Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

> **Note**: If you have a version prior to 2.1.0.3.0, you must upgrade to 2.2.0.0.0 before upgrading to 2.2.0.1.0.

This chapter includes:

Before You Upgrade

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

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

Upgrade of the database component of Oracle Utilities Smart Grid Gateway must be complete before you can proceed with the following sections. Refer to the section "**Upgrade Install**" of the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide*, which provides instructions on upgrading the database component.

> **Note**: When implementing Oracle Utilities Smart Grid Gateway with Oracle Utilities Meter Data Management, both the Smart Grid Gateway and Meter Data Management database components should be installed in the same database.

Application Components Upgrade

A successful upgrade consists of the following steps:

- Upgrading the Oracle Utilities Application Framework Application Component to V4.3.0 Service Pack 4
- Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0
- Upgrading the Oracle Utilities Service and Measurement Data Foundation Application Component to V2.2.0.1.0
- Upgrading the Oracle Utilities Smart Grid Gateway Application Component

Upgrading the Oracle Utilities Application Framework Application Component to V4.3.0 Service Pack 4

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

- Copying and Decompressing Install Media
- Setting Permissions for the cistab file in UNIX
- Upgrading the Application Component Over Oracle Utilities Smart Grid GatewayV2.1.0.3

Copying and Decompressing Install Media

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 userid.

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 Smart Grid Gateway V2.2.0.1.0 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. Unzip Oracle Utilities Smart Grid Gateway V2.2.0.1.0 to get SGG_V2.2.0.1.0.zip. Then copy the SGG_V2.2.0.1.0.zip file from the delivered package to <TEMPDIR>.

   If you are using FTP to transfer this file, remember to use the BINARY option for the FTP transfer.

5. Decompress the file:

```
cd <TEMPDIR>
unzip SGG_V2.2.0.1.0.zip
cd App
```

Setting Permissions for the cistab file in UNIX

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

The install utility checks permissions and if it identifies a lack of the necessary permissions, it generates a script in the ../App/FW.V4.3.0.4.0 directory named cistab_<SPLENVIRON>.sh. Run the generated script using the root account before continuing with the installation process. The script initializes the cistab file in /etc directory (if it is the first Oracle Utilities 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 it is your responsibility to take a backup prior to the installation process. The installation utility does not create a backup of existing environment.

Upgrading the Application Component Over Oracle Utilities Smart Grid GatewayV2.1.0.3

This section outlines the steps for upgrading the application component of Oracle Utilities Application Framework over Oracle Utilities Smart Grid Gateway 2.1.0.3.0.

Note: Customers who have a version prior to 2.1.0.3.0 must install 2.1.0.3.0 before upgrading to 2.2.0.1.0.

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 Service and Measurement Data Foundation 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. Stop the environment, if running:

   UNIX

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

   Windows

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

5. Change the directory to ../App/FW.V4.3.0.4.0.

   NOTE: While installing the FW V4.3.0.4.0 from the previous environment to V2.2.0.1.0, the install utility removes the existing environment and re-creates the environment. Make a backup before you proceed with installing FW V4.3.0.4.0 to retain any configurations for future reference.

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

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   The Oracle Utilities Application Framework specific menu appears.

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.

9. Below is the mandatory list of configurable items along with descriptions for a few items. Where you see <Mandatory>, enter values suitable to your environment. You can assign default values to the rest of the menu items.

```
**********************************
* Environment Installation Options *
**********************************
 1. Third Party Software Configuration
       Oracle Client Home Directory: <Mandatory>
       Web Java Home Directory:      <Mandatory>
       Child JVM Home Directory:
```

```
       COBOL Home Directory:
       Hibernate JAR Directory: <Mandatory>
       ONS JAR Directory:
       Web Application Server Home Directory: <Mandatory>
       ADF Home Directory:
       OIM OAM Enabled Environment:
2. Keystore Options
      Store Type:                                          JCEKS
      Alias:                                               ouaf.system
      Alias Key Algorithm:                                 AES
      Alias Key Size:                                      128
     HMAC Alias:                                         ouaf.system.hmac
      Padding:                                             PKCS5Padding
      Mode:                                                CBC
50. Environment Installation Options
       Environment Mount Point: <Mandatory> - Install Location
       Log Files Mount Point:<Mandatory> - ThreadPoolWorker Logs
                                           Location
       Environment Name:<Mandatory>
       Web Application Server Type:                         WLS
       Install Application Viewer Module:                   true

Each item in the above list should be configured for a successful
install.
Choose option (1,2,50, <P> Process, <X> Exit):
```

10. 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 Number:     <Mandatory>
       WebLogic Console Port Number:  <Mandatory>
       WebLogic Additional Stop Arguments:
       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:                                    SYSUSER

 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: <Mandatory>
      JDBC Database User ID: <Mandatory>
      JDBC Database Password: <Mandatory>
      Database Name:                            <Mandatory>
      Database Server:                          <Mandatory>
      Database Port:                            <Mandatory>
      ONS Server Configuration: <Mandatory>
      Database Override Connection String: <Mandatory>
      Character Based Database: <Mandatory>
      Oracle Client Character Set NLS_LANG: AMERICAN_AMERICA.AL32UTF8

 5. General Configuration Options
      Batch RMI Port:                          <Mandatory> - RMI port
                                                           for batch
      RMI Port number for JMX Business:
      RMI Port number for JMX Web:
      JMX Enablement System User ID:
      JMX Enablement System Password:
      Coherence Cluster Name:                   <Mandatory> - Unique
                                                      name for batch
      Coherence Cluster Address:                <Mandatory> - Unique
                                                   Multicast address
      Coherence Cluster Port:                   <Mandatory> - Unique
                                               port for batch cluster
      Coherence Cluster Mode:                   <Mandatory> - prod

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

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):
```

11. 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.
12. Once the upgrade install has finished, the installation log location appears on the screen. If the log does not list any error messages, the upgrade installation of the application component of Oracle Utilities Application Framework is complete. You can now upgrade Oracle Utilities Service and Measurement Data Foundation as described in the following section.

Installing Oracle Utilities Application Framework V4.3.0.4.0 Single Fix Prerequisite Rollup for SMDF V2.2.0.1.0

1. Navigate to ../App/FW43040_Rollup.
2. Refer to the Readme.txt inside 'Application-Server-Multiplatform' file for instructions on installing the Oracle Utilities Application Framework 4.3.0 Service Pack 4 Prerequisite Single Fixes.

These patches are also available for download separately from My Oracle Support.

See Appendix D for a list of the patches contained in the rollup.

Upgrading the Oracle Utilities Service and Measurement Data Foundation Application Component to V2.2.0.1.0

This section describes how to upgrade the application component of Oracle Utilities Service and Measurement Data Foundation, including:

- Copying and Decompressing Install Media
- Upgrading the Application Component
- Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

Copying and Decompressing Install Media

The Oracle Utilities Service and Measurement Data Foundation 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 userid.

1. Log in to the application server as the Oracle Utilities Application Framework administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Application Framework.
2. Navigate to ../App/SMDF.V2.2.0.1.0 directory.

Upgrading the Application Component

Follow the steps below to install the application component of Oracle Utilities Service and Measurement Data Foundation:

1. Log on as Oracle Utilities Service and Measurement Data Foundation Administrator (default cissys).
2. Initialize the Framework environment that you want to install the product into.

UNIX

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

Windows:

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

3. Stop the environment if it is running.

   UNIX

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

   Windows

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

Installing the Application

1. Execute the script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   > **Note**: On UNIX, ensure that you have the proper execute permission on install.sh. While installing Oracle Utilities Service and Measurement Data Foundation 2.2.0 the utility removes the existing environment and recreates the environment. Make a backup before you proceed ahead.

   The configuration menu for the Oracle Utilities Service and Measurement Data Foundation Application appears.

2. Select menu item 8 to configure OSB.

   Use the completed OSB configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

3. Select menu item 9 to configure SOA.

   Use the completed SOA configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

4. Select menu item 10 to configure the SOA Configuration Plan.

   Use the completed SOA Configuration Plan (MDF) worksheet to assist you in this step. See the Installation and Configuration Worksheets.

   When you are done with the parameter setup, choose option P to proceed with the installation.

Installation of Oracle Utilities Service and Measurement Data Foundation Application Server is complete if no errors occurred during installation.

Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation

This section applies to an Oracle Utilities Smart Grid Gateway configuration in which Oracle Service Bus (OSB) or Oracle SOA Suite is installed on a separate host from the Oracle Utilities Application Framework's host. In this configuration, the Oracle Utilities

installation scripts must have access to the libraries in the OSB and SOA servers' directories to deploy OSB projects and SOA composites successfully.

Follow these procedures to configure access to a remote OSB server:

- Create a network share to the osb folder within the Middleware Home on the remote OSB server.
- Provide the following values for Menu Item 8 (OSB Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation:

  Note: Use the completed OSB configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

  - **OSB Home** is the location of the osb folder, accessed by way of network share.
  - **OSB Host Server** is the host name of the OSB server.
  - **OSB Port Number** is the port of the OSB admin server.

Follow these procedures to configure access to a remote SOA Suite server:

- Create a network share to the soa folder within the Middleware Home on the remote SOA Suite server.
- Provide the following values for Menu Item 9 (SOA Configuration) during the installation for Oracle Utilities Service and Measurement Data Foundation

  Note: Use the completed SOA configuration worksheet to assist you in this step. See the Installation and Configuration Worksheets.

  - **SOA Home** is the location of the soa folder, accessed by way of network share.
  - **SOA Host Server** is the host name of the SOA server.
  - **SOA Port Number** is the port of the SOA managed server.

Upgrading the Oracle Utilities Smart Grid Gateway Application Component

This section describes how to install the application component of Oracle Utilities Smart Grid Gateway, including:

- Upgrading the MV90 Adapter for Itron
- Upgrading the Adapter Development Kit
- Upgrading the Adapter for Networked Energy Services
- Upgrading the Adapter for Itron OpenWay
- Upgrading the Adapter for Landis+Gyr
- Upgrading the Adapter for Sensus RNI
- Upgrading the Adapter for Silver Spring Networks

Upgrading the MV90 Adapter for Itron

This section describes the installation of the MV90 Adapter for Itron, including:

- Preinstallation Tasks for the MV90 Adapter
- Upgrading the MV90 Adapter

Preinstallation Tasks for the MV90 Adapter

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway MV90 Adapter, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 folder.

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Upgrading the MV90 Adapter

To upgrade the Oracle Utilities Smart Grid Gateway MV90 Adapter:

1. Execute the install script:

UNIX

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

Windows

```
install.cmd
```

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

2. Choose option **P** to proceed with the installation.

Once the install has finished successfully, execute the post-installation steps described in Configuration Tasks for the MV90 Adapter.

Upgrading the Adapter Development Kit

This section describes the installation of the Adapter Development Kit, including:

- Preinstallation Tasks for the Adapter Development Kit
- Installation Tasks for the Adapter Development Kit

Preinstallation Tasks for the Adapter Development Kit

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter Development Kit

This section describes the installation of the Adapter Development Kit, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter Development Kit

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

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

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

3. Stop the environment if running.

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

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

Upgrading the Adapter Development Kit

To upgrade the Oracle Utilities Smart Grid Gateway Adapter Development Kit:

1. Execute the install script:

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

   Windows
   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 21 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Smart Grid Gateway Installation and Configuration Worksheets in Appendix B.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute post-installation steps described Configuration Tasks for the Adapter Development Kit.

Upgrading the Adapter for Networked Energy Services

This section describes the installation of the Adapter for Networked Energy Services, including:

- Preinstallation Tasks for the Adapter for Networked Energy Services
- Installation Tasks for the Adapter for Networked Energy Services

Preinstallation Tasks for the Adapter for Networked Energy Services

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid

Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Networked Energy Services

This section describes the installation of the Adapter for Networked Energy Services, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter for Networked Energy Services

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Upgrading the Adapter for Networked Energy Services

To upgrade the Oracle Utilities Smart Grid Gateway Adapter for Networked Energy Services:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 17 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Networked Energy Services.

Upgrading the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Preinstallation Tasks for the Adapter for Itron OpenWay
- Installation Tasks for the Adapter for Itron OpenWay

Preinstallation Tasks for the Adapter for Itron OpenWay

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Itron OpenWay

This section describes the installation of the Adapter for Itron OpenWay, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter for Itron OpenWay

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Upgrading the Adapter for Itron OpenWay

To upgrade the Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 22 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option **P** to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Itron OpenWay.

Upgrading the Adapter for Landis+Gyr

This section describes the installation of the Adapter for Landis+Gyr, including:

- Preinstallation Tasks for the Adapter for Landis+Gyr
- Installation Tasks for the Adapter for Landis+Gyr

Preinstallation Tasks for the Adapter for Landis+Gyr

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Operating Systems and Application Servers for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Landis+Gyr

This section describes the installation of the Adapter for Sensus RNI, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter for Landis+Gyr

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Upgrading the Adapter for Landis+Gyr

To upgrade the Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

   Note: On UNIX, ensure that you have the proper execute permission on install.sh. The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 16 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute post-installation steps described in Configuration Tasks for the Adapter for Landis+Gyr.

Upgrading the Adapter for Sensus RNI

This section describes the installation of the Adapter for Sensus RNI, including:

- Preinstallation Tasks for the Adapter for Sensus RNI
- Installation Tasks for the Adapter for Sensus RNI

Preinstallation Tasks for the Adapter for Sensus RNI

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Sensus RNI

This section describes the installation of the Adapter for Sensus RNI, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter for Sensus RNI

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

   UNIX

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

   Windows

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

3. Stop the environment if running.

   UNIX

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

   Windows

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

Upgrading the Adapter for Sensus RNI

To upgrade the Oracle Utilities Smart Grid Gateway Adapter for Sensus RNI:

1. Execute the install script:

   UNIX

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

   Windows

   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 18 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B: Installation and Configuration Worksheets.

3. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute postinstallation steps described in Configuration Tasks for the Adapter for Sensus RNI.

Upgrading the Adapter for Silver Spring Networks

This section describes the installation of the Adapter for Silver Spring Networks, including:

- Preinstallation Tasks for the Adapter for Silver Spring Networks
- Installation Tasks for the Adapter for Silver Spring Networks

Preinstallation Tasks for the Adapter for Silver Spring Networks

This section describes the steps that should be taken before installing Oracle Utilities Smart Grid Gateway, including:

- Installation Prerequisite
- Copying and Decompressing the Installation Media

Installation Prerequisite

The Oracle Utilities Service and Measurement Data Foundation 2.2.0.1.0 application must be installed prior to installing Oracle Utilities Smart Grid Gateway 2.2.0.1.0.

Copying and Decompressing the Installation Media

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

Oracle Utilities Smart Grid Gateway is delivered as a separate installation package. Please refer to the Supported Platforms and Hardware Requirements for versions and installation details regarding the database and operating system. Also see Installing Prerequisite Software for prerequisite third-party software installation instructions.

Download the installation package and proceed as follows:

1. Log in to the host server as the Oracle Utilities Service and Measurement Data Foundation administrator user ID (default cissys). This is the same user ID that was used to install the Oracle Utilities Service and Measurement Data Foundation.
2. Navigate to the ../App/SGG.V2.2.0.1.0 directory.

Installation Tasks for the Adapter for Silver Spring Networks

This section describes the installation of the Adapter for Silver Spring Networks, including:

- Initializing the Service and Measurement Data Foundation
- Upgrading the Adapter for Silver Spring Networks

Initializing the Service and Measurement Data Foundation

1. Log on as Oracle Utilities Smart Grid Gateway Administrator (default cissys).
2. Initialize the Service and Measurement Data Foundation environment that you want to install the product into.

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

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

3. Stop the environment if running.

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

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

Upgrading the Adapter for Silver Spring Networks

To upgrade the Oracle Utilities Smart Grid Gateway Adapter for Silver Spring Networks:

1. Execute the install script:

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

   Windows
   ```
   install.cmd
   ```

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

   The configuration menu for Oracle Utilities Smart Grid Gateway appears.

2. Select menu item 19 to configure the URI of the head-end system.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

3. Select menu item 20 to configure the JMS source destination bridge.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

4. Select menu item 70 to configure the test harness.

   Use the completed SOA configuration worksheet to assist you in this step. See Appendix B**:** Installation and Configuration Worksheets.

5. When you are done setting up the parameters, choose option P to proceed with the installation.

Once the install has finished successfully, execute post-installation steps described in Configuration Tasks for the Adapter for Silver Spring Networks.

Operating the Application

At this point your installation and custom integration process is complete. Be sure to read the *Oracle Utilities Smart Grid Gateway Server Administration Guide* for more information on further configuring and operating the system.

Chapter 7

Configuring the Oracle Utilities Smart Grid Gateway Adapters

This section describes configuration tasks such as deploying OSB and SOA adapters for the Oracle Utilities Smart Grid Gateway adapters. This section includes:

Configuration Tasks for the MV90 Adapter

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway MV90 Adapter, including:

- Deploying the OSB Adapter for the MV90
- Starting the Application

Deploying the OSB Adapter for the MV90

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

```
mv90-usage
mv90-usage-arch
mv90-usage-error
```

2. Start the example OSB WebLogic instance.
   Refer to the section Creation of Example Weblogic Domains.

   UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

   Windows

```
cd %SPLEBASE%\osbapp
startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server.
   a. Create a JMS server "OSB-JMSServer" and target it to admin server.
   b. Create a JMS module "MV90-SystemModule".
   c. Under "MV90-SystemModule" create a sub-deployment "MV90-JMSFAServer" and target it to "OSB-JMSServer".
   d. Create the following JMS queues:

      Queue Name: DestinationQueue-D5

      JNDI Name: DestinationQueue-D5

      Sub-deployment: MV90-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: NotificationQueue-D5

      JNDI Name: NotificationQueue-D5

      Sub-deployment: MV90-JMSFAServer

      Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.
   For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

   UNIX

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile
deploy-osb_MV90.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile
deploy-osb_MV90.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

   Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-osb_MV90.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp

%SPLEBASE%/product/apache-ant/bin/ant -buildfile
deploy-osb_MV90.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

To deploy on a separate WebLogic instance:

1. Create the following directories under <OSB_LOG_DIR>:

```
mv90-usage
mv90-usage-arch
```

```
mv90-usage-error
```

2. Copy the following jars to the lib folder under the WebLogic domain directory:

```
spl-d1-osb-2.2.0.1.0.0.jar
spl-d5-osb-2.2.0.1.0.0.jar
```

These jars are present under the following location:

UNIX: $SPLEBASE/etc/lib

Windows: %SPLEBASE%\etc\lib

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
   - Create a JMS server "OSB-JMSServer" and target it to admin server.
   - Create a JMS module "MV90-SystemModule".
   - Under "MV90-SystemModule" create a sub-deployment "MV90-JMSFAServer" and target it to "OSB-JMSServer".
   - Create the following JMS queues:

     Queue Name: DestinationQueue-D5

     JNDI Name: DestinationQueue-D5

     Sub-deployment: MV90-JMSFAServer

     Targets: OSB-JMSServer

     Queue Name: NotificationQueue-D5

     JNDI Name: NotificationQueue-D5

     Sub-deployment: MV90-JMSFAServer

     Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
   For SSL deployment please refer to the section Deploying OSB adapter on SSL.

   UNIX

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile
 deploy-osb_MV90.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile
deploy-osb_MV90.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>   -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-osb_MV90.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile
deploy-osb_MV90.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

1. Start up the environment. Run the following command:

   UNIX

   ```
   spl.sh start
   ```

   Windows

   ```
   spl.cmd start
   ```

   Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

   You should postpone the startup process until you are done with postinstallation steps.

   Use the following utility to stop the environment:

   UNIX

   ```
   spl.sh stop
   ```

   Windows

   ```
   spl.cmd stop
   ```

Configuration Tasks for the Adapter Development Kit

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway Adapter Development Kit, including:

- Deploying the OSB Adapter for the Adapter Development Kit
- Deploying the SOA Adapter for the Adapter Development Kit
- Configuring Security for the SOA System
- Starting the Application

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for the Adapter Development Kit

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

```
dg-csv-error
dg-csv
dg-xml-error
dg-xml-arch
dg-xml
dg-csv-arch
dg-seeder-error
dg-seeder-arch
dg-seeder
```

2. Start the example OSB WebLogic instance.

   UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

   Windows

```
cd %SPLEBASE%\osbapp
startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server:
   - Create a JMS server "OSB-JMSServer" and target it to admin server.
   - Create a JMS module "DG-SystemModule"
   - Under "DG-SystemModule" create a sub-deployment "DG-JMSFAServer" and target it to "OSB-JMSServer"

- Create the following JMS queues:

  Queue Name: DestinationQueue-DG

  JNDI Name: DestinationQueue-DG

  Sub-deployment: DG-JMSFAServer

  Targets: OSB-JMSServer

  Queue Name: IMDDestinationQueue-DG

  JNDI Name: IMDDestinationQueue-DG

  Sub-deployment: DG-JMSFAServer

  Targets: OSB-JMSServer

  Queue Name: NotificationQueue-DG

  JNDI Name: NotificationQueue-DG

  Sub-deployment: DG-JMSFAServer

  Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.
   For SSL deployment please refer to the section Deploying OSB adapter on SSL.

   UNIX

   ```
   cd $SPLEBASE/osbapp
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_DG.xml -
   Dadmin.user=<ADMIN_USER>
   -Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
   -Douaf.password=<JMS_PASSWORD>
   ```

   Note: Use the following command if this is an upgrade from a previous version:

   ```
   cd $SPLEBASE/osbapp
   $SPLEBASE/product/apache-ant/bin/ant -buildfile
   deploy-osb_DG.xml update_osb -Dadmin.user=<ADMIN_USER>
   -Dadmin.password=<OSB_ADMIN_PASSWORD>
   -Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
   ```

   This will not override any OSB custom changes

   Windows

   ```
   cd %SPLEBASE%\osbapp
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_DG.xml
   -Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
   Douaf.user=<JMS_USER> - Douaf.password=<JMS_PASSWORD>
   ```

   Note: Use the following command if this is an upgrade from a previous version:

   ```
   cd %SPLEBASE%/osbapp
   %SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_DG.xml
   update_osb -Dadmin.user=<ADMIN_USER> -
   Dadmin.password=<OSB_ADMIN_PASSWORD>
   -Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
   ```

This will not override any OSB custom changes

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

To deploy on a separate WebLogic instance:

1. Create the following directories under <OSB_LOG_DIR>:

```
dg-csv-error
dg-csv
dg-xml-error
dg-xml-arch
dg-xml
dg-csv-arch
dg-seeder-error
dg-seeder-arch
dg-seeder
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
spl-d1-osb-2.2.0.1.0.jar
spl-dg-osb-2.2.0.1.0.jar
```

These jars are present under the following location:

UNIX

```
$SPLEBASE/etc/lib
```

Windows

```
%SPLEBASE%\etc\lib
```

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
   - Create a JMS server "OSB-JMSServer" and target it to admin server.
   - Create a JMS module "DG-SystemModule"
   - Under "DG-SystemModule" create a sub-deployment "DG-JMSFAServer" and target it to "OSB-JMSServer"
   - Create the following JMS queues:

Queue Name: DestinationQueue-DG

JNDI Name: DestinationQueue-DG

Sub-deployment:: DG-JMSFAServer

Targets: OSB-JMSServer

Queue Name: IMDDestinationQueue-DG

JNDI Name: IMDDestinationQueue-DG

Sub-deployment: DG-JMSFAServer

Targets: OSB-JMSServer

Queue Name: NotificationQueue-DG

JNDI Name: NotificationQueue-DG

Sub-deployment: DG-JMSFAServer

Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
For SSL deployment please refer to the section Deploying OSB adapter on SSL.

   Note:- Modify the OSB Host Server,OSB Port Number according to Standalone domain using "OSB Configuration Menu item 8".

UNIX

```
cd $SPLEBASE/osbapp


$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_DG.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_DG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_DG.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>


%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_DG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Deploying the SOA Adapter for the Adapter Development Kit

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To deploy the SOA adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Edit the startWeblogic script located at the locations below for JAVA_OPTIONS:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   startWebLogic.cmd
   ```

2. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS.
3. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp

   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

4. Deploy the SOA adapter on the example WebLogic instance.
   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_DG.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

   Windows

   ```
    %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_DG.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

5. Deploy the TestHarness SOA composites on example WebLogic instance.
   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

UNIX

```
cd $SPLEBASE/soaapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_DG.xml
deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

Windows

Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_DG.xml deployTestHarness  -Dserver.password=<SOA_USER>

-Dserver.password=<SOA_PASSWORD>
```

6. Import the Policy Templates and Policies.
   a. First, import the policy template jar using Enterprise Manager.

      Linux

      ```
      cd $SPLEBASE/soaapp
      ant –f package-soa-policy.xml –Dproduct=d1
      ```

      Windows

      ```
      cd %SPLEBASE%/soaapp
      ant –f package-soa-policy.xml –Dproduct=d1
      ```

      a. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
      b. Right-click the domain and navigate to **Web Services, WSM Policies.**
      c. Click **Web Services Assertion Templates** at the top of the page.
      d. Click **Import** and import the sgg-d1-policy.jar file.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

   b. For SOA 12c version, perform the following steps to import policies:
      a. Import the “sgg_dg_cfs_multispeak_header_client_policy” policy file ($SPLEBASE/soaapp) using Enterprise Manager.
      b. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
      c. Create a "META-INF\policies\oracle" folder structure and copy the policy under oracle folder and zip the entire folder as “sgg_dg_cfs_multispeak_header_client_policy.zip”.
      d. Right-click the domain and navigate to **Web Services, WSM Policies.**
      e. Click **Import** and import sgg_dg_cfs_multispeak_header_client_policy.zip.

This file is located in the following directory:

UNIX: $SPLEBASE/soaapp

Windows: %SPLEBASE%\soaapp

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Create WebLogic SOA Domain and select Enterprise Manager option.
2. Copy the following jar file to the lib folder under the WebLogic domain directory, spl-d1-soa- security.jar

   This jar is present under the following location:

   UNIX: $SPLEBASE/etc/lib

   Windows: %SOA_HOME%\etc\lib
3. Append following XML snippet to <MIDDLEWARE_HOME>\user_projects\domains\ <SOA Domain>\config\fmwconfig\system-jazn-data.xml :

```
<grant>
<grantee>
<codesource>
 <url>file:${domain.home}/lib/spl-d1-soa-security.jar</url>
</codesource>
</grantee>
<permissions>
<permission>
<class>oracle.security.jps.service.credstore.CredentialAccessPermi
ssion</class>
<name>context=SYSTEM,mapName=*,keyName=*</name>
<actions>*</actions>
</permission>
</permissions>
<permission-set-refs>
</permission-set-refs>
</grant>
```

4. Copy the SGGLogin.config file from below location to the config directory of Weblogic SOA domain and edit the startWeblogic script located of Weblogic SOA domain-> bin for JAVA_OPTIONS:

   a. This SGGLogin.config is present under the following location:

      UNIX: $SPLEBASE/soaapp/config

      Windows: %SOA_HOME%\soaapp\config

   b. Copy the file.

      UNIX: <Weblogic_SOA_domain>/config

      Windows: <Weblogic_SOA_domain>\config

   c. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/ SGGLogin.config -

Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS to

UNIX: <Weblogic_SOA_domain>/bin/startWeblogic.sh

Windows: <Weblogic_SOA_domain>\bin\startWeblogic.cmd

5. Start the separate WebLogic instance.
6. Before SOA composites deployment, import the Policy Templates and Policies.
   a. First, import the policy template jar using Enterprise Manager.

      Linux

      ```
      cd $SPLEBASE/soaapp
      ant -f package-soa-policy.xml -Dproduct=d1
      ```

      Windows
      cd %SPLEBASE%/soaapp

      ```
      ant -f package-soa-policy.xml -Dproduct=d1
      ```

      a. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
      b. Right-click the domain and navigate to **Web Services, WSM Policies.**
      c. Click **Web Services Assertion Templates** at the top of the page.
      d. Click **Import** and import the sgg-d1-policy.jar zip.

         This file is located in the following directory:

         UNIX: $SPLEBASE/soaapp/policies/jars

         Windows: %SPLEBASE%\soaapp\policies\jars

   b. For SOA 12c version, perform the following steps to import policies:
      a. Import the "sgg_dg_cfs_multispeak_header_client_policy" policy file ($SPLEBASE/soaapp) using Enterprise Manager.
      b. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
      c. Create a "META-INF\policies\oracle" folder structure, copy the policy under oracle folder and zip the entire folder as "sgg_dg_cfs_multispeak_header_client_policy.zip".
      d. Right-click the domain and navigate to **Web Services, WSM Policies.**
      e. Click **Import** and import the sgg_dg_cfs_multispeak_header_client_policy.zip file.

         This file is located in the following directory:

         UNIX: $SPLEBASE/soaapp

         Windows: %SPLEBASE%\soaapp
7. Deploy the SOA cartridge on the separate WebLogic instance

   Note: Modify the SOA Host Server, SOA Port Number, SOA WebLogic User Name, SOA WebLogic User Password and Endpoint

URLs menu items according to separate domain using "SOA Configuration Menu item 9".

For SSL deployment, please refer to the section Deploying SOA Composites on SSL.

UNIX

```
cd $SPLEBASE/soaapp
```

For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_DG.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

Windows

```
cd %SPLEBASE%\soaapp
```

For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
soa_MDF.xml -Dserver.user=<ADMIN_USER> -
Dserver.password=<ADMIN_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant
-buildfile deploy-soa_DG.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

8. Deploy the TestHarness SOA composites on the separate WebLogic instance.

UNIX

```
cd $SPLEBASE/soaapp
```

For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_DG.xml
deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Windows

```
cd %SPLEBASE%\soaapp
```

For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_DG.xml deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Configuring Security for the SOA System

Security is managed through policies attached to the input and output points of each composite. More information on policies and their configuration can be found in the *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*, Chapter 10: Configuring Policies.

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server.
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click the domain, and choose **Security**, **Credentials**.
2. On the **Credentials** page, click **Create Map**.
3. In the **Create Map** dialog, name the map **oracle.wsm.security**, then click **OK**.
4. Click **Create Key** and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.dg.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name
    - **Password:** A valid WebLogic password
5. Click **OK**.
6. Click **Create Key** again and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key: s**gg.dg.ouaf.credentials
    - **Type:** Password
    - **Username:** A valid OUAF user name
    - **Password:** A valid OUAF password
7. Click **OK**.

Configuring Security for the SOA System to Communicate with the Head-End System

The ADK Test Harness is a frequently-used substitute for a real head-end System. Some specific settings highlighted below will facilitate connecting to and using the Test Harness.

- Creating Security Credentials

Creating Security Credentials

Configuring security for the SOA system involves creating the security credentials in Oracle Enterprise Manager.

To create the security credential in the Credential File Store (CFS):

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the WebLogic Domain menu, navigate to **Security**, **Credentials**.
3. Click **Create Map** to set up a new credentials store.
4. In the **Create Map** dialog box, enter a unique value in the **Map Name** field.
5. Click **OK**.
6. Select the new map in the **Credentials** list and click **Create Key**.
7. In the **Create Key** dialog box, enter the appropriate values in the fields. In the **Type** field, select **Password**.
8. Click **OK**.

   By default, the sgg_dg_cfs_multispeak_header_client_policy policy imported previously uses a Credential Map named "dg.security" and a Credential Key called "dg.credentials." Use these values unless making changes to the template values.

   Test Harness Note: By default, the Test Harness expects a user name of "MultiSpeakUserID" and a password of "MultiSpeakPwd."

Creating the Web Service Policy for the Security Credentials

To create a web service policy for the security credentials:

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the WebLogic Domain menu, navigate to **Web Services, Policies**.
3. Select the policy oracle/wss_http_token_client_policy.
4. Click **Create Like.**
   - Give the policy a unique name and an appropriate description.
   - Under Assertions, remove the Log Message and the HTTP Security policies.
   - Click **Add.**
   - Enter a name for the new assertion.
   - In the Assertion Template field, select sgg/d1_csf_access_client_xpath_template.
   - Click **OK.**

5. In the Assertion Content field, edit property values in the XML according to the example below. The following table lists the property values that should be edited:

Field	Default Value	Description
csf-map		Required. The credential store map to use. This value is specified in the task **Creating Security Credentials** on page 7-16.
csf-key		Required. The key in the credential store map that will resolve to a username-password pair. This value is specified in the task **Creating Security Credentials** on page 7-16.
namespaceDefinitions		Prefix-namespace definitions used in the xpath fields below. Each should be in the form prefix=namespace. Multiple definitions should be separated by spaces. Default namespaces cannot be set.
soapElement	Header	The context node for xpath searches, either the SOAP header or the SOAP body. Legal values are "header" and "body."
userid.xpath		The xpath to the location to inject the username in the SOAP element. The statement must resolve to an attribute or element that already exists.
password.xpath		The xpath to the location to inject the password in the SOAP element. The statement must resolve to an attribute or element that already exists.
isDebuggingActive	false	Reserved for internal use.

```
<orasp:SGGCredentialStoreInsertionXPath xmlns:orawsp="http://
schemas.oracle.com/ws/2006/01/policy" orawsp:Silent="true"
orawsp:name="CSF_DG" orawsp:description="Properties to add CSF
credentials to a SOAP message" orawsp:Enforced="true"
orawsp:category="security/authentication" xmlns:orasp="http://
schemas.oracle.com/ws/2006/01/securitypolicy">
    <orawsp:bindings>
```

```
<orawsp:Implementation>com.splwg.d1.sgg.soa.common.security.policy.Cre
dentialStorageFacilityAccessAssertationExecutor</
orawsp:Implementation>
        <orawsp:Config orawsp:name="CSFKeyInsertionConfig"
orawsp:configType="declarative">
            <orawsp:PropertySet orawsp:name="CSFKeyProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-map">
                    <orawsp:Description>Which CSF map to use</
orawsp:Description>
                    <orawsp:Value>CSF_map_name</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-key">
                    <orawsp:Description>Which key in the map to use</
orawsp:Description>
                    <orawsp:Value>CSF_Key</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="XPathProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="soapElement">
                  <orawsp:Description>The segment of the soap message
to which to write.  Legal Values are "header" &amp;amp; "body"</
orawsp:Description>
                    <orawsp:Value>header</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="optional" orawsp:name="namespaceDefinitions">
                    <orawsp:Description>A space-separated list of
prefix-namespace pairs.  For example: ns1=http://myurl.com/ns1
ns2=http://oracle.com xsd=http://www.w3.org/2001/XMLSchema</
orawsp:Description>
                    <orawsp:Value>ns1=http://www.multispeak.org/
Version_4.1_Release</orawsp:Value/>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="userid.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the user id.</
orawsp:Description>
                    <orawsp:Value>./ns1:MultiSpeakMsgHeader/@UserID</
orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="password.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the password.</
orawsp:Description>
                    <orawsp:Value>./ns1:MultiSpeakMsgHeader/@Pwd</
orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="DebugProperties">
                <orawsp:Property orawsp:type="boolean"
orawsp:contentType="optional" orawsp:name="isDebuggingActive">
                    <orawsp:Description>controls debugging output</
orawsp:Description>
                    <orawsp:Value>false</orawsp:Value>
                    <orawsp:DefaultValue>false</orawsp:DefaultValue>
                </orawsp:Property>
```

```
            </orawsp:PropertySet>
          </orawsp:Config>
     </orawsp:bindings>
</orasp:SGGCredentialStoreInsertionXPath>
```

6. Save the policy.
7. Attach the policy to the MR_Server reference on the Common composite.
   a. In Oracle Enterprise Manager, navigate to the **DG/Common** composite.
   b. Navigate to the Policies tab.
   c. From the **Attach To/Detach From** menu, select **MR_Server**.
   d. In the Attached Policies window, select the oracle/wss_http_token_client_policy.
   e. Click **Detach** to remove the default security policy.
   f. In the Available Policies window, select the policy that you just created.
   g. Click **Attach** to attach the policy to the MR_Server reference.
8. Attach the policy to the CD_Server reference on the Common composite.
   a. Navigate to the **DG/Common** composite.
   b. Navigate to the **Policies** tab.
   c. In the **Attach To/Detach From** menu, select **CD_Server**.
   d. In the **Attached Policies** window, select oracle/wss_http_token_client_policy.
   e. Click **Detach** to remove the default security policy.
   f. In the **Available Policies** window, select the policy that you just created.
   g. Click **Attach** to attach the policy to the CD_Server reference.
9. Attach the policy to the OD_Server reference on the Common composite.
   a. Navigate to the **DG/Common** composite.
   b. Navigate to the **Policies** tab.
   c. From the **Attach To/Detach From** menu, select **OD_Server**.
   d. In the **Attached Policies** window, select oracle/wss_http_token_client_policy.
   e. Click **Detach** to remove the default security policy.
   f. In the **Available Policies** window, select the policy that you just created.
   g. Click **Attach** to attach the policy to the OD_Server reference.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

```
http://<hostname>:<portname>/console
```

To start up the environment, run the following command:

UNIX

```
spl.sh start
```

Windows

```
spl.cmd start
```

Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

You should postpone the startup process until you are done with post-installation steps.

Use the following utility to stop the environment:

UNIX

```
spl.sh stop
```

Windows

```
spl.cmd stop
```

Configuration Tasks for the Adapter for Networked Energy Services

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway Adapter for Networked Energy Services, including:

- Deploying the OSB Adapter for Networked Energy Services
- Deploying the SOA Adapter for Networked Energy Services
- Deploying the Test Harness
- Configuring the Networked Energy Services Head-End System to Report Events
- Configuring Security for the SOA System
- Starting the Application

  Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for Networked Energy Services

This section describes how to deploy the OSB Adapter.

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

```
d4-event
d4-event-arch
d4-event-error
d4-usage
d4-usage-arch
d4-usage-error
```

2. Start the example OSB WebLogic instance.

   UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

   Windows

```
cd %SPLEBASE%\osbapp
startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to the admin server.
   b. Create a JMS module "D4-SystemModule"
   c. Under "D4-SystemModule" create a sub-deployment "D4-JMSFAServer" and target it to "OSB-JMSServer"
   d. Create the following JMS queues:

      Queue Name: DestinationQueue-D4

      JNDI Name: DestinationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: IMDDestinationQueue-D4

      JNDI Name: IMDDestinationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: NotificationQueue-D4

      JNDI Name: NotificationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.
For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
 update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D4.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER> - Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

1. Create the following directories under <OSB_LOG_DIR>:

```
d4-event
d4-event-arch
d4-event-error
d4-usage
d4-usage-arch
d4-usage-error
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
 spl-d1-osb-2.2.0.1.0.jar
spl-d4-osb-2.2.0.1.0.jar
```

These jars are present under the following location:

UNIX: `$SPLEBASE/etc/lib`

Windows: `%SPLEBASE%\etc\lib`

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
    - Create a JMS server "OSB-JMSServer" and target it to the admin server
    - Create a JMS module "D4-SystemModule"
    - Under "D4-SystemModule" create a sub-deployment "D4-JMSFAServer" and target it to "OSB-JMSServer"
    - Create the following JMS queues:

      Queue Name: DestinationQueue-D4

      JNDI Name: DestinationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: IMDDestinationQueue-D4

      JNDI Name: IMDDestinationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: NotificationQueue-D4

      JNDI Name: NotificationQueue-D4

      Sub-deployment: D4-JMSFAServer

      Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance by running the following command from the Oracle Utilities application server:

   For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

   UNIX

```
cd $SPLEBASE/osbapp


$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
update_osb -Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D4.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D4.xml
update_osb -Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Deploying the SOA Adapter for Networked Energy Services

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To deploy the SOA adapter, use the following procedures.

To Deploy on the Example WebLogic Instance

1. Edit the startWeblogic script located at below locations for JAVA_OPTIONS:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

2. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS

3. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

4. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

```
cd $SPLEBASE/soaapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D4.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

   Windows

```
cd %SPLEBASE%\soaapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D4.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Copy the following jar file to the lib folder under the WebLogic domain directory:

   `spl-d1-soa-security.jar`

   This jar is present under the following location:

   UNIX: `$SPLEBASE/etc/lib`

   Windows: `%SPLEBASE%\etc\lib`

2. Copy the SGGLogin.config file from below location to the config directory of WebLogic SOA domain and edit the startWeblogic script located of WebLogic SOA domain-> bin for JAVA_OPTIONS:

   a. This SGGLogin.config is present under the following location:

      UNIX: `$SPLEBASE/soaapp/config`

      Windows: `%SOA_HOME%\soaapp\config`

   b. Copy the file.

      UNIX: `<Weblogic_SOA_domain>/config`

      Windows: `<Weblogic_SOA_domain>\config`

3. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS to

   UNIX: `<Weblogic_SOA_domain>/bin/startWeblogic.sh`

   Windows: `<Weblogic_SOA_domain>\bin\startWeblogic.cmd`

4. Start the separate WebLogic instance.
5. Deploy the SOA adapter on the separate WebLogic instance by running the following command from the Oracle Utilities application server:

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D4.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

   Windows

```
cd %SPLEBASE%\soaapp
```

   For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant
-buildfile deploy-soa_D4.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

Deploying the Test Harness

The test harness is a set of mock web services that can be used to test the SOA configuration setup and functionality in the absence of an actual physical head-end system. This is an optional task.

Note: The test harness is not a supported feature of the application.

Use the following procedures to deploy the test harness SOA adapter:

To Deploy on the Example WebLogic Instance

1. Deploy the test harness on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

```
cd $SPLEBASE/soaapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D4.xml
deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

   Windows

   Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_D4.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

To Deploy on a Separate WebLogic Instance

1. Deploy the SOA adapter on the separate WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D4.xml
   deployTestHarness -Dserver.user=<ADMIN_USER>
   -Dserver.password=<ADMIN_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   ```

   For WebLogic 12c:

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D4.xml
    deployTestHarness -Dserver.user=<ADMIN_USER>
   -Dserver.password=<ADMIN_PASSWORD>
   ```

Configuring the Networked Energy Services Head-End System to Report Events

This section describes how to configure the Networked Energy Services head-end system to report events to the Networked Energy Services. Configuring the head-end system requires using the NES Diagnostic Tool to specify the following system properties:

- Event Delivery Type
- Event Receiver URL
- Event Receiver Namespace
- API Key Timeout Period

Configuring the Event Delivery Type

To configure the event delivery type:

1. In the NES Diagnostic Tool navigation tree, navigate to **NES System Data, Event Configuration.**
2. In the tree, select the **Add Device Failure** event to view its properties.
3. Set the DELIVERYTYPEID property to **EventDeliveryType.SOAP.**

Repeat this task for each of the following events:

- Add Device Failure
- Add Device Success
- Connect Device Load Command Complete
- Disconnect Device Load Command Complete
- Move Device Success
- Move Device Failure
- Read Device Load Profile On-Demand Command Complete
- Read Device Full Load Profile Command Complete
- Read Device Load Status Command Complete
- Read Device Billing Data On-Demand Command Complete
- Set Device ATM Configuration Command Complete

Configuring the Event Receiver URL

To Configure the Event Receiver URL:

1. In the NES Diagnostic Tool navigation tree, navigate to **NES System Data, Settings, Solution Settings.**
2. Select **Event Receiver URL** to view its properties.
3. Set the VALUE property to the URL that is specified for the web service ReceivePanoramixEvents. For example:

   ```
   http://<NES_HOST>:<PORT_NUMBER>/soa-infra/services/Echelon_NES/
   HandleReceiveEvents/ReceivePanoramixEvents
   ```

4. Restart the application server that hosts the Networked Energy Services head-end system. (The World Wide Web and Networked Energy Services Local Task Manager services).

Configuring the Event Receiver Namespace

To Configure the Event Receiver Namespace:

1. In the NES Diagnostic Tool navigation tree, navigate to **NES System Data, Settings, Solution Settings.**
2. Select **Event Receiver Namespace.**
3. Set the VALUE property to **http://tempuri.org.** This is the namespace for the Networked Energy Services Adapter web service that will receive the events.

Configuring the API Key Timeout Period

Note: This task is optional. By default the API Key Timeout Period is set to 60 minutes.

To configure the API Key Timeout Period:

1. In the NES Diagnostic Tool navigation tree, navigate to NES System Data, Settings, Solution Settings.

2. In the tree, select the API Key Timeout Period to view its properties.
3. Change the VALUE property to set the timeout period for the API key.

Restart the application server that hosts the Networked Energy Services head-end system.

Configuring Security for the SOA System

Security is managed through policies attached to the input and output points of each composite. More information on policies and their configuration can be found in the *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*, Chapter 10: Configuring Policies.

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server.
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click on the domain, and choose **Security, Credentials**.
2. On the **Credentials** page, click **Create Map.**
3. In the **Create Map** dialog, name the map **oracle.wsm.security**, then click **OK**.
4. Click **Create Key** and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d4.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name
    - **Password:** A valid WebLogic password
5. Click **OK.**
6. Click **Create Key** again and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d4.ouaf.credentials
    - **Type:** Password

- **Username:** A valid OUAF user name
- **Password:** A valid OUAF password

7. Click **OK.**

Configuring Security for the SOA System to Communicate with the Head-End System

Configuring security for the SOA system involves creating the security credentials in Oracle Enterprise Manager, and then creating a web service policy that uses the credentials to communicate with the head-end system. These configuration tasks are described in the following sections:

- Creating the Security Credentials
- Importing the Policy Templates
- Creating the Web Service Policy for the Security Credentials

Creating the Security Credentials

To create the security credential in the Credential File Store (CFS):

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. Right-click the domain and navigate to **Security, Credentials.**
3. Click **Create Map** to set up a new credentials store.
4. In the **Create Map** dialog box, enter a unique value in the **Map Name** field.

   For example, nes.credentials.
5. Click **OK.**
6. Select the new map in the **Credentials** list and click **Create Key.**

   For example, nes-key.
7. In the **Create Key** dialog box, enter the appropriate values in the fields.
8. In the **Type** field, select **Password.**
9. Click **OK.**

Importing the Policy Templates

To import the policy assertion templates:

1. First, import the policy template jar using Enterprise Manager.
   a. For **Linux**:

   ```
   cd $SPLEBASE/soaapp
   ant -f package-soa-policy.xml -Dproduct=d1
   ```

   For **Windows**

   ```
   cd %SPLEBASE%/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

b. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

c. Right-click the domain and navigate to **Web Services, WSM Policies.**

d. Click **Web Services Assertion Templates** at the top of the page.

e. Click **Import** and import the sgg-d1-policy.jar zip.

This file is located in the following directory:

UNIX: $SPLEBASE/soaapp/policies/jars

Windows: %SPLEBASE%\soaapp\policies\jars

2. Import the policy template jar using Enterprise Manager.

a. For **Linux**:

```
cd $SPLEBASE/soaapp
ant -f package-soa-policy.xml -Dproduct=d4
```

For **Windows**
cd %SPLEBASE%/soaapp

```
ant -f package-soa-policy.xml -Dproduct=d4
```

b. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

c. Right-click the domain and navigate to **Web Services, WSM Policies.**

d. Click **Web Services Assertion Templates** at the top of the page.

e. Click **Import** and import the sgg-d4-policy.jar zip.

This file is located in the following directory:

UNIX: $SPLEBASE/soaapp/policies/jars

Windows: %SPLEBASE%\soaapp\policies\jars

Creating the Web Service Policy for the Security Credentials

To create a web service policy for the security credentials:

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. Right-click the domain and navigate to **Web Services, Policies.**
3. In the **Applies To** field, select either **All** or **Service Clients.**
4. Select the policy oracle/wss_http_token_client_policy.
5. Click **Create Like.**

a. Give the policy a unique name and an appropriate description.

b. Under **Assertions**, remove the Log Message and the HTTP Security policies.

c. Click **Add.**

d. Enter a name for the new assertion.

e. In the **Assertion Template** field, select sgg/d1_csf_access_client_xpath_template and click **Save**.

f. Click **OK.**

6. In the **Assertion Content** field, edit property values in the XML according to the example below. The following table lists the property values that should be edited:

Field	Default Value	Description
csf-map		Required. The credential store map to use. This value is specified in the task **Creating the Security Credentials** on page 7-30.
csf-key		Required. The key in the credential store map that will resolve to a username-password pair. This value is specified in the task **Creating the Security Credentials** on page 7-30.
namespaceDefinitions		Prefix-namespace definitions used in the xpath fields below. Each should be in the form prefix=namespace. Multiple definitions should be separated by spaces. Default namespaces cannot be set.
soapElement	Body	The context node for xpath searches, either the SOAP header or the SOAP body. Legal values are "header" and "body."
userid.xpath		The xpath to the location to inject the username in the SOAP element. The statement must resolve to an attribute or element that already exists.
password.xpath		The xpath to the location to inject the password in the SOAP element. The statement must resolve to an attribute or element that already exists.
isDebuggingActive	false	Reserved for internal use.

```
<orasp:SGGCredentialStoreInsertionXPath xmlns:orawsp="http://
schemas.oracle.com/ws/2006/01/policy" orawsp:Silent="true"
orawsp:name="CSF_Echelon" orawsp:description="Properties to add CSF
credentials to a SOAP message" orawsp:Enforced="true"
orawsp:category="security/authentication" xmlns:orasp="http://
schemas.oracle.com/ws/2006/01/securitypolicy">
    <orawsp:bindings>
```

```
<orawsp:Implementation>com.splwg.d1.sgg.soa.common.security.policy.Cre
dentialStorageFacilityAccessAssertationExecutor</
orawsp:Implementation>
        <orawsp:Config orawsp:name="CSFKeyInsertionConfig"
orawsp:configType="declarative">
            <orawsp:PropertySet orawsp:name="CSFKeyProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-map">
                    <orawsp:Description>Which CSF map to use</
orawsp:Description>
                    <orawsp:Value>CSF_map_name</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-key">
                    <orawsp:Description>Which key in the map to use</
orawsp:Description>
                    <orawsp:Value>CSF_Key</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="XPathProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="soapElement">
                  <orawsp:Description>The segment of the soap message
to which to write.  Legal Values are "header" &amp;amp; "body"</
orawsp:Description>
                    <orawsp:Value>body</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="optional" orawsp:name="namespaceDefinitions">
                    <orawsp:Description>A space-separated list of
prefix-namespace pairs.  For example: ns1=http://myurl.com/ns1
ns2=http://oracle.com xsd=http://www.w3.org/2001/XMLSchema</
orawsp:Description>
                    <orawsp:Value/>    <!-- NOTE: nothing entered in
this space -->
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="userid.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the user id.</
orawsp:Description>
                    <orawsp:Value>./sUserLogin</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="password.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the password.</
orawsp:Description>
                    <orawsp:Value>./sPassword</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="DebugProperties">
                <orawsp:Property orawsp:type="boolean"
orawsp:contentType="optional" orawsp:name="isDebuggingActive">
                    <orawsp:Description>controls debugging output</
orawsp:Description>
                    <orawsp:Value>false</orawsp:Value>
                    <orawsp:DefaultValue>false</orawsp:DefaultValue>
                </orawsp:Property>
            </orawsp:PropertySet>
        </orawsp:Config>
```

```
    </orawsp:bindings>
</orasp:SGGCredentialStoreInsertionXPath>
```

7. Save the policy.
8. Attach the policy to the User Manger reference.
    a. In Oracle Enterprise Manager, Navigate to the **AuthenticationMgr** composite. The full path is **SOA/soa-infra/Echelon/AuthenticationMgr.**
    b. On the **Policies** tab, from the **Attach To/Detach From** menu, select **UserManager**.
    c. In the **Available Policies** window, select the policy that you just created.
    d. Click **Attach** to attach the policy to the UserManager reference.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

1. Start up the environment. Run the following command:

    UNIX: spl.sh start

    Windows: spl.cmd start

    Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

    You should postpone the startup process until you are done with postinstallation steps.

    Use the following utility to stop the environment:

    UNIX: spl.sh stop

    Windows: spl.cmd stop

Configuration Tasks for the Adapter for Itron OpenWay

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay, including:

- Deploying the OSB Adapter for the Itron OpenWay
- Deploying the SOA Adapter for the Itron OpenWay
- Configuring Security for the SOA System

- Starting the Application

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for the Itron OpenWay

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance:

1. Create the following directories under <OSB_LOG_DIR>:

```
itronxml
itronxml-arch
itronxml-error
itronexcpetion
itronexception-arch
itronexception-error
```

2. Start the example OSB WebLogic instance.

UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

Windows

```
cd %SPLEBASE%\osbapp  startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to admin server.
   b. Create a JMS module "D8-SystemModule"
   c. Under "D8-SystemModule" create a sub-deployment "D8-JMSFAServer" and target it to "OSB-JMSServer"
4. Create the following JMS queues:

   Queue Name: DestinationQueue-D8

   JNDI Name: DestinationQueue-D8

   Sub-deployment: D8-JMSFAServer

   Targets: OSB-JMSServer

   Queue Name: IMDDestinationQueue-D8

   JNDI Name: IMDDestinationQueue-D8

   Sub-deployment: D8-JMSFAServer

Targets: OSB-JMSServer

Queue Name: NotificationQueue-D8

JNDI Name: NotificationQueue-D8

Sub-deployment: D8-JMSFAServer

Targets: OSB-JMSServer

5. Deploy the OSB adapter on the example WebLogic instance.
For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy- osb_D8.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D8.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D8.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER> - Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%\osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D8.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

To Deploy on a Separate WebLogic Instance:

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

1. Create the following directories under <OSB_LOG_DIR>:

```
itronxml
itronxml-arch
itronxml-error
itronexception
itronexception-arch
```

```
itronexception-error
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
spl-d1-osb-2.2.0.1.0.jar
spl-d8-osb-2.2.0.1.0.jar
```

   These jars are present under the following location:

   UNIX: $SPLEBASE/etc/lib

   Windows: %SPLEBASE%\etc\lib

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to admin server. Create a JMS module "D8-SystemModule".
   b. Under "D8-SystemModule" create a sub-deployment "D8-JMSFAServer" and target it to "OSB-JMSServer"
   c. Create the following JMS queues:

      Queue Name: DestinationQueue-D8

      JNDI Name: DestinationQueue-D8

      Sub-deployment: D8-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: IMDDestinationQueue-D8

      JNDI Name: IMDDestinationQueue-D8

      Sub-deployment: D8-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: NotificationQueue-D8

      JNDI Name: NotificationQueue-D8

      Sub-deployment: D8-JMSFAServer

      Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
   For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

   Note: Modify the OSB Host Server,OSB Port Number according to Stnadalone domain using "OSB Configuration Menu item 8".

   UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D8.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D8.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D8.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D8.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Deploying the SOA Adapter for the Itron OpenWay

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To Deploy on the Example WebLogic Instance:

1. Edit the startWeblogic script located at below locations for JAVA_OPTIONS:

   UNIX

   cd $SPLEBASE/soaapp

   ./startWebLogic.sh

   Windows

   cd %SPLEBASE%\soaapp startWebLogic.cmd

2. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS

3. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

4. Deploy the SOA adapter on the example WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D8.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

   Windows

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D8.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

5. Deploy the TestHarness SOA composites on example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D8.xml
   deployTestHarness  -Dserver.password=<SOA_USER>
    -Dserver.password=<SOA_PASSWORD>
   ```

   Windows

   Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

   ```
   cd %SPLEBASE%/soaapp

   %SPLEBASE%\product\apache-ant\bin\ant -buildfile
   deploy-soa_D8.xml deployTestHarness  -Dserver.password=<SOA_USER>
    -Dserver.password=<SOA_PASSWORD>
   ```

To Deploy on a Separate SOA on a WebLogic Instance:

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Create WebLogic SOA Domain and select Enterprise Manager option also.
2. Copy the following jar file to the lib folder under the WebLogic domain directory, spl-d1-soa- security.jar

   This jar is present under the following location:

   UNIX

   ```
   $SPLEBASE/etc/lib
   ```

   Windows:

   ```
   %SPLEBASE%\etc\lib
   ```

3. Append following XML snippet to <MIDDLEWARE_HOME>\user_projects\domains\ <SOA Domain>\config\fmwconfig\system-jazn-data.xml:

   ```
   <grant>
   <grantee>
   <codesource>
   <url>file:${domain.home}/lib/spl-d1-soa-security.jar</url>
   </codesource>
   </grantee>
   <permissions>
   <permission>
   <class>oracle.security.jps.service.credstore.CredentialAccessPermi
   ssion</class>
   <name>context=SYSTEM,mapName=*,keyName=*</name>
   <actions>*</actions>
   </permission>
   </permissions>
   <permission-set-refs>
   </permission-set-refs>
   </grant>
   ```

4. Copy the SGGLogin.config file from below location to the config directory of WebLogic SOA domain and edit the startWeblogic script located of WebLogic SOA domain-> bin for JAVA_OPTIONS:

   This SGGLogin.config is present under the following location:

   UNIX: $SPLEBASE/soaapp/config

   Windows: %SOA_HOME%\soaapp\config

   a. Copy the file

      Unix :<Weblogic_SOA_domain>/config

      Windows :<Weblogic_SOA_domain>\config

   b. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/ SGGLogin.config - Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS to

      Unix :<Weblogic_SOA_domain>/bin/startWeblogic.sh

Windows :<Weblogic_SOA_domain>\bin\startWeblogic.cmd

5. Start the separate SOA WebLogic instance.
6. Deploy the SOA cartridge on the separate WebLogic instance

   Note: Modify the SOA Host Server, SOA Port Number, SOA WebLogic User Name, SOA WebLogic User Password and Endpoint URLs menu items according to separate domain using "SOA Configuration Menu item 9".

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>


   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D8.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   ```

   For WebLogic 12c:

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

   %SPLEBASE%\product\apache-ant\bin\ant
   -buildfile deploy-soa_D8.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
   ```

7. Deploy the TestHarness SOA composites on the separate WebLogic instance.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D8.xml
   deployTestHarness -Dserver.user=<ADMIN_USER>
   -Dserver.password=<ADMIN_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   ```

   For WebLogic 12c:

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D8.xml
   deployTestHarness -Dserver.user=<ADMIN_USER>
   -Dserver.password=<ADMIN_PASSWORD>
   ```

Configuring Security for the SOA System

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click the domain, and choose **Security**, **Credentials**.
2. On the **Credentials** page, click **Create Map**.
3. In the **Create Map** dialog, name the map **oracle.wsm.security**, then click **OK**.
4. Click **Create Key** and enter the following values:
    - **Select Map**: oracle.wsm.security
    - **Key**: sgg.d8.credentials
    - **Type**: Password
    - **Username**: A valid WebLogic user name
    - **Password**: A valid WebLogic password
5. Click **OK**.
6. Click **Create Key** again and enter the following values:
    - **Select Map**: oracle.wsm.security
    - **Key**: sgg.d8.ouaf.credentials
    - **Type:** Password
    - **Username**: A valid OUAF user name
    - **Password**: A valid OUAF password
7. Click **OK**.

Configuring Security for the SOA System to Communicate with the Head-End System

According to the Itron OpenWay Web Service Reference Guide, the head end system can accommodate many different types of security schemes including Basic HTTP,

HTTPS, and X.509. Oracle SOA Server supports these, as well. By default, Basic HTTP is enabled, but as always users should evaluate the most appropriate type of security for their environment. Please refer to the Oracle SOA Server product documentation for detailed instructions on securing web services.

Importing the Policy Templates and Policies.

Follow the procedure below to import the policy templates and policies:

1. First, import the policy template jar using Enterprise Manager.
   a. For **Linux**:

```
cd $SPLEBASE/soaapp
ant –f package-soa-policy.xml –Dproduct=d1
```

   For **Windows**

```
cd %SPLEBASE%/soaapp
ant –f package-soa-policy.xml –Dproduct=d1
```

   b. In Oracle Enterprise Manager, navigate to WebLogic Domain and select the required SOA domain.
   c. Right-click the domain and navigate to **Web Services**, **WSM Policies**.
   d. Click **Web Services Assertion Templates** at the top of the page.
   e. Click **Import** and import the sgg-d1-policy.jar zip.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

2. Import the policy template jar using Enterprise Manager.
   a. For **Linux**:

```
cd $SPLEBASE/soaapp
ant –f package-soa-policy.xml –Dproduct=d8
```

   For **Windows**

```
cd %SPLEBASE%/soaapp
ant –f package-soa-policy.xml –Dproduct=d8
```

   b. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
   c. Right-click the domain and navigate to **Web Services**, **WSM Policies**.
   d. Click **Import** and import the sgg-d8-policy.jar zip.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

To start up the environment, run the following command:

UNIX: spl.sh start

Windows: spl.cmd start

Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

You should postpone the startup process until you are done with post installation steps. Use the following utility to stop the environment:

UNIX: spl.sh stop

Windows: spl.cmd stop

Configuration Tasks for the Adapter for Landis+Gyr

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway Adapter for Landis+Gyr, including:

- Deploying the OSB Adapter for Landis+Gyr
- Deploying the SOA Adapter for Landis+Gyr
- Configuring Security for the SOA System
- Starting the Application

  Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for Landis+Gyr

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

   ```
   lg-cim-event
   ```

```
lg-cim-event-arch
lg-cim-event-error
lg-event
lg-event-arch
lg-event-error
lg-usage
lg-usage-arch
lg-usage-error
```

2. Start the example OSB WebLogic instance.

   UNIX

   ```
   cd $SPLEBASE/osbapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\osbapp
   startWebLogic.cmd
   ```

3. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to admin server.
   b. Create a JMS module "D3-SystemModule".
   c. Under "D3-SystemModule" create a sub-deployment "D3-JMSFAServer" and target it to "OSB-JMSServer".
   d. Create the following JMS queues:

      Queue Name: DestinationQueue-D3

      JNDI Name: DestinationQueue-D3

      Sub-deployment: D3-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: IMDDestinationQueue-D3

      JNDI Name: IMDDestinationQueue-D3

      Sub-deployment: D3-JMSFAServer

      Targets: OSB-JMSServer

      Queue Name: NotificationQueue-D3

      JNDI Name: NotificationQueue-D3

      Sub-deployment: D3-JMSFAServer

      Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.

   UNIX

   ```
   cd $SPLEBASE/osbapp
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
   -Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
   Douaf.user=<JMS_USER>
   -Douaf.password=<JMS_PASSWORD>
   ```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy- osb_LG.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER> - Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

1. Create the following directories under <OSB_LOG_DIR>:

```
lg-cim-event
lg-cim-event-arch
lg-cim-event-error
lg-event
lg-event-arch
lg-event-error
lg-usage
lg-usage-arch
lg-usage-error
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
spl-d1-osb-2.2.0.1.0.jar
spl-d3-osb-2.2.0.1.0.jar
```

These jars are present under the following location:

UNIX: $SPLEBASE/etc/lib

Windows: %SPLEBASE%\etc\lib

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
    - Create a JMS server “OSB-JMSServer” and target it to admin server.

- Create a JMS module "D3-SystemModule".
- Under "D3-SystemModule" create a sub-deployment "D3-JMSFAServer" and target it to "OSB-JMSServer".
- Create the following JMS queues:

  Queue Name: DestinationQueue-D3

  JNDI Name: DestinationQueue-D3

  Sub-deployment: D3-JMSFAServer

  Targets: OSB-JMSServer

  Queue Name: IMDDestinationQueue-D3

  JNDI Name: IMDDestinationQueue-D3

  Sub-deployment:: D3-JMSFAServer

  Targets: OSB-JMSServer

  Queue Name: NotificationQueue-D3

  JNDI Name: NotificationQueue-D3

  Sub-deployment: D3-JMSFAServer

  Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
   For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

   UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes.

   Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_LG.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_LG.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Deploying the SOA Adapter for Landis+Gyr

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To deploy the SOA adapter, use the following procedures.

To Deploy on the Example WebLogic Instance

1. Edit the startWeblogic script located at below locations for JAVA_OPTIONS:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   startWebLogic.cmd
   ```

   Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS

2. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

3. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   ```

```
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_LG.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

Windows

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_LG.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

4. Deploy the TestHarness SOA composites on example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

UNIX

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_LG.xml
deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

Windows

Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_LG.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Create WebLogic SOA Domain and select Enterprise Manager option also.
2. Copy the following jar file to the lib folder under the WebLogic domain directory, spl-d1-soa- security.jar.

   This jar is present under the following location:

UNIX

```
$SPLEBASE/etc/lib
```

Windows

```
%SPLEBASE%\etc\lib
Append the following XML snippet to
<MIDDLEWARE_HOME>\user_projects\domains\<SOA
Domain>\config\fmwconfig\system-jazn-data.xml:
       <grant>
<grantee>
<codesource>
<url>file:${domain.home}/lib/spl-d1-soa-security.jar</url>
```

```
</codesource>
</grantee>
<permissions>
<permission>
<class>oracle.security.jps.service.credstore.CredentialAccessPermi
ssion</class>
<name>context=SYSTEM,mapName=*,keyName=*</name>
<actions>*</actions>
</permission>
</permissions>
<permission-set-refs>
</permission-set-refs>
</grant>
```

3. Copy the SGGLogin.config file from below location to the config directory of Weblogic SOA domain and edit the startWeblogic script located of Weblogic SOA domain-> bin for JAVA_OPTIONS:

   This SGGLogin.config is present under the following location:

   UNIX: $SPLEBASE/soaapp/config

   Windows: %SOA_HOME%\soaapp\config

   a. Copy the file.

      UNIX: <Weblogic_SOA_domain>/config

      Windows: <Weblogic_SOA_domain>\config

   b. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS to

      UNIX: <Weblogic_SOA_domain>/bin/startWeblogic.sh

      Windows: <Weblogic_SOA_domain>\bin\startWeblogic.cmd

4. Start the separate WebLogic instance.
5. Deploy the SOA adapter on the separate WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_LG.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   ```

   For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant
-buildfile deploy-soa_LG.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

6. Deploy the TestHarness SOA composites on the separate WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX
   For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_LG.xml
 deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

   Windows

```
cd %SPLEBASE%\soaapp
```

   For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_LG.xml
deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Configuring Security for the SOA System

Security is managed through policies attached to the input and output points of each composite. More information on policies and their configuration can be found in the *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*, Chapter 10: Configuring Policies.

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map

- A Credential Key for the WebLogic Server
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click the domain, and choose **Security, Credentials**.
2. On the **Credentials** page, click **Create Map.**
3. In the **Create Map** dialog, name the map oracle.wsm.security, then click **OK**.
4. Click **Create Key and enter the following values:**
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d3.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name
    - **Password:** A valid WebLogic password
5. Click **OK**.
6. Click **Create Key** again and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key: s**gg.d3.ouaf.credentials
    - **Type:** Password
    - **Username:** A valid OUAF user name
    - **Password:** A valid OUAF password
7. Click **OK**.

Configuring Security for the SOA System to Communicate with the Head-End System

Configuring security for the SOA system involves creating the security credentials in Oracle Enterprise Manager, and then creating a web service policy that uses the credentials to communicate with the head-end system. These configuration tasks are described in the following sections:

- Creating the Security Credentials
- Importing the Policy Templates and Policies
- Creating the Web Service Policy for the Security Credentials

Creating the Security Credentials

To create the security credential in the Credential File Store (CFS):

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the **WebLogic Domain** menu, navigate to **Security, Credentials**.
3. Click **Create Map** to set up a new credentials store.
4. In the **Create Map** dialog box, enter a unique value in the **Map Name** field.
5. Click **OK.**

6. Select the new map in the Credentials list and click **Create Key**.
7. In the **Create Key** dialog box, enter the appropriate values in the fields.
8. In the **Type** field, select **Password**.
9. Click **OK**.

Importing the Policy Templates and Policies

Follow the procedure below to import policy templates and policies:

1. First, import the policy template jar using Enterprise Manager.

   Linux

   ```
   cd $SPLEBASE/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

   Windows

   ```
   cd %SPLEBASE%/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

   a. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

   b. Right-click the domain and navigate to **Web Services, WSM Policies**.

   c. Click **Web Services Assertion Templates** at the top of the page.

   d. Click **Import** and import the sgg-d1-policy.jar file.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

2. Import the policy template jar using Enterprise Manager.

   Linux

   ```
   cd $SPLEBASE/soaapp
   ant –f package-soa-policy.xml –Dproduct=d3
   ```

   Windows

   ```
   cd %SPLEBASE%/soaapp
   ant –f package-soa-policy.xml –Dproduct=d3
   ```

   a. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

   b. Right-click the domain and navigate to **Web Services, WSM Policies.**

   c. Click **Web Services Assertion Templates** at the top of the page.

   d. Click **Import** and import the sgg-d3-policy.jar file.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

Creating the Web Service Policy for the Security Credentials

To create a web service policy for the security credentials:

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the **WebLogic Domain** menu, navigate to **Web Services, Policies**.
3. Select the policy oracle/wss_http_token_client_policy.
4. Click **Create Like.**
   a. Give the policy a unique name and an appropriate description.
   b. Under **Assertions**, remove the Log Message and the HTTP Security policies.
   c. Click **Add.**
   d. Enter a name for the new assertion.
   e. In the Assertion Template field, select sgg/ d1_csf_access_client_xpath_template.
   f. Click **OK.**
5. In the **Assertion Content** field, edit property values in the XML according to the example below. The following table lists the property values that should be edited:

Field	Default Value	Description
csf-map		Required. The credential store map to use. This value is specified in the task Creating the Security Credentials.
csf-key		Required. The key in the credential store map that will resolve to a username-password pair. This value is specified in the task Creating the Security Credentials.
namespaceDefinitions		Prefix-namespace definitions used in the xpath fields below. Each should be in the form prefix=namespace. Multiple definitions should be separated by spaces. Default namespaces cannot be set.
soapElement	Header	The context node for xpath searches, either the SOAP header or the SOAP body. Legal values are "header" and "body."
userid.xpath		The xpath to the location to inject the username in the SOAP element. The statement must resolve to an attribute or element that already exists.
password.xpath		The xpath to the location to inject the password in the SOAP element. The statement must resolve to an attribute or element that already exists.
isDebuggingActive	false	Reserved for internal use.

```
<orasp:SGGCredentialStoreInsertionXPath xmlns:orawsp="http://
schemas.oracle.com/ws/2006/01/policy" orawsp:Silent="true"
orawsp:name="CSF_CIM_L+G" orawsp:description="Properties to add CSF
```

```
credentials to a SOAP message" orawsp:Enforced="true"
orawsp:category="security/authentication" xmlns:orasp="http://
schemas.oracle.com/ws/2006/01/securitypolicy">
    <orawsp:bindings>

<orawsp:Implementation>com.splwg.d1.sgg.soa.common.security.policy.Cre
dentialStorageFacilityAccessAssertationExecutor</
orawsp:Implementation>
        <orawsp:Config orawsp:name="CSFKeyInsertionConfig"
orawsp:configType="declarative">
            <orawsp:PropertySet orawsp:name="CSFKeyProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-map">
                    <orawsp:Description>Which CSF map to use</
orawsp:Description>
                    <orawsp:Value>CSF_map_name</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-key">
                    <orawsp:Description>Which key in the map to use</
orawsp:Description>
                    <orawsp:Value>CSF_CIM_Key</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="XPathProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="soapElement">
                  <orawsp:Description>The segment of the soap message
to which to write. Legal Values are "header" &amp;amp; "body"</
orawsp:Description>
                    <orawsp:Value>header</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="optional" orawsp:name="namespaceDefinitions">
                    <orawsp:Description>A space-separated list of
prefix-namespace pairs. For example: ns1=http://myurl.com/ns1
ns2=http://oracle.com xsd=http://www.w3.org/2001/XMLSchema</
orawsp:Description>
                  <orawsp:Value>ns1=http://www.landisgyr.com/iec61968/
2010/03</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="userid.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the user id.</
orawsp:Description>
                    <orawsp:Value>./UserName</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="password.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the password.</
orawsp:Description>
                    <orawsp:Value>./Password</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="DebugProperties">
                <orawsp:Property orawsp:type="boolean"
orawsp:contentType="optional" orawsp:name="isDebuggingActive">
                    <orawsp:Description>controls debugging output</
orawsp:Description>
                    <orawsp:Value>false</orawsp:Value>
```

```
                    <orawsp:DefaultValue>false</orawsp:DefaultValue>
                </orawsp:Property>
            </orawsp:PropertySet>
        </orawsp:Config>
    </orawsp:bindings>
</orasp:SGGCredentialStoreInsertionXPath>
```

6. Save the policy.
7. Attach the policy to the MR_CB reference on the CommissionDecommission composite.
    a. In Oracle Enterprise Manager, navigate to the **CommissionDecommission** composite.
    b. From the **Attach To/Detach From** menu, select **MR_CB.**
    c. In the **Available Policies** window, select the policy that you just created.
    d. Click **Attach** to attach the policy to the MR_CB reference.
8. Attach the policy to the CD_CB reference on the ConnectDisconnect composite
    a. Navigate to the **ConnectDisconnect** composite.
    b. From the **Attach To/Detach From** menu, select **CD_CB**.
    c. In the **Available Policies** window, select the policy that you just created.
    d. Click **Attach** to attach the policy to the CD_CB reference.
9. Attach the policy to the MR_CB reference on the OnDemandRead composite.
    a. Navigate to the **OnDemandRead** composite.
    b. From the **Attach To/Detach From** menu, select **MR_CB.**
    c. In the **Available Policies** window, select the policy that you just created.
    d. Click **Attach** to attach the policy to the MR_CB reference.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

Start up the environment. Run the following command:

UNIX: spl.sh start

Windows: spl.cmd start

Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

You should postpone the startup process until you are done with postinstallation steps.

Use the following utility to stop the environment:

UNIX: spl.sh stop

Windows: spl.cmd stop

Configuration Tasks for the Adapter for Sensus RNI

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway, including:

- Deploying the OSB Adapter for Sensus RNI
- Deploying the SOA Adapter for Sensus RNI
- Configuring Security for the SOA System
- Starting the Application

  Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for Sensus RNI

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

```
d6-usage
d6-usage-arch
d6-usage-error
d6-event
d6-event-arch
d6-event-error
```

2. Start the example OSB WebLogic instance.

   UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

   Windows

```
cd %SPLEBASE%\osbapp
startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to admin server.
   b. Create a JMS module "D6-SystemModule".

c. Under "D6-SystemModule" create a sub-deployment "D6-JMSFAServer" and target it to "OSB-JMSServer".

d. Create the following JMS queues:

Queue Name: DestinationQueue-D6

JNDI Name: DestinationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

Queue Name: IMDDestinationQueue-D6

JNDI Name: IMDDestinationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

Queue Name: NotificationQueue-D6

JNDI Name: NotificationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.
For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D6.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER> - Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
```

```
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

To Deploy on a Separate WebLogic Instance

Note: See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

1. Create the following directories under <OSB_LOG_DIR>:

```
d6-usage
d6-usage-arch
d6-usage-error
d6-event
d6-event-arch
d6-event-error
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
spl-d1-osb-2.2.0.1.0.jar
spl-d6-osb-2.2.0.1.0.jar
```

These jars are present under the following location:

UNIX: $SPLEBASE/etc/lib

Windows: %SPLEBASE%\etc\lib

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
   a. Create a JMS server "OSB-JMSServer" and target it to admin server.
   b. Create a JMS module "D6-SystemModule".
   c. Under "D6-SystemModule" create a sub-deployment "D6-JMSFAServer" and target it to "OSB-JMSServer".
   d. Create the following JMS queues:

Queue Name: DestinationQueue-D6

JNDI Name: DestinationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

Queue Name: IMDDestinationQueue-D6

JNDI Name: IMDDestinationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

Queue Name: NotificationQueue-D6

JNDI Name: NotificationQueue-D6

Sub-deployment: D6-JMSFAServer

Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

UNIX

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD> Douaf.user=<JMS_USER>  -
Douaf.password=<JMS_PASSWORD>
```

Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D6.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp

%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D6.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Deploying the SOA Adapter for Sensus RNI

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To deploy the SOA adapter, use the following procedures.

To Deploy on the Example WebLogic Instance

1. Edit the startWeblogic script located at below locations for JAVA_OPTIONS:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

   Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS

2. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   startWebLogic.cmd
   ```

3. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D6.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp

   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D6.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

4. Deploy the Test Harness SOA composites on example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D6.xml
deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

Windows

Note: Open the command prompt as Administrative mode and then select the environment to deploy soa

```
cd %SPLEBASE%/soaapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_D6.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

5. Import the Policy Templates and Policies.

   a. First, import the policy template jar using Enterprise Manager.

   Linux:

   ```
   cd $SPLEBASE/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

   Windows

   ```
   cd %SPLEBASE%/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

   In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

   a. Right-click on the domain and navigate to **Web Services, WSM Policies**.

   b. Click **Web Services Assertion Templates** at the top of the page.

   c. Click **Import** and import the sgg-d1-policy.jar file.

   This file is located in the following directory:

   UNIX: $SPLEBASE/soaapp/policies/jars

   Windows: %SPLEBASE%\soaapp\policies\jars

   b. Next, import the policy template jar using Enterprise Manager.

   Linux

   ```
   cd $SPLEBASE/soaapp
   ant –f package-soa-policy.xml –Dproduct=d6
   ```

   Windows

   ```
   cd %SPLEBASE%/soaapp
   ant –f package-soa-policy.xml –Dproduct=d6
   ```

   In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

   a. Right click on the domain and navigate to **Web Services, WSM Policies**.

   b. Click **Web Services Assertion Templates** at the top of the page.

   c. Click **Import** and import the sgg-d6-policy.jar zip.

This file is located in the following directory:

UNIX: $SPLEBASE/soaapp/policies/jars

Windows: %SPLEBASE%\soaapp\policies\jars

To Deploy on a Separate WebLogic Instance

See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Create WebLogic SOA Domain and select Enterprise Manager option.
2. Copy the following jar file to the lib folder under the WebLogic domain directory, spl-d1-soa- security.jar

   This jar is present under the following location:

   UNIX: $SPLEBASE/etc/lib

   Windows: %SPLEBASE%\etc\lib
3. Append following XML snippet to <MIDDLEWARE_HOME>\user_projects\domains\ <SOA Domain>\config\fmwconfig\system-jazn-data.xml :

```
<grant>
<grantee>
<codesource>
 <url>file:${domain.home}/lib/spl-d1-soa-security.jar</url>
</codesource>
</grantee>
<permissions>
<permission>
<class>oracle.security.jps.service.credstore.CredentialAccessPermi
ssion</class>
<name>context=SYSTEM,mapName=*,keyName=*</name>
<actions>*</actions>
</permission>
</permissions>
<permission-set-refs>
</permission-set-refs>
</grant>
```

4. Copy the SGGLogin.config file from below location to the config directory of Weblogic SOA domain and edit the startWeblogic script located of Weblogic SOA domain-> bin for JAVA_OPTIONS:
   a. This SGGLogin.config is present under the following location:

      UNIX: $SPLEBASE/soaapp/config

      Windows: %SOA_HOME%\soaapp\config

   b. Copy the file.

      Unix :<Weblogic_SOA_domain>/config

      Windows :<Weblogic_SOA_domain>\config

   c. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/ SGGLogin.config -

Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS to

Unix :<Weblogic_SOA_domain>/bin/startWeblogic.sh

Windows :<Weblogic_SOA_domain>\bin\startWeblogic.cmd

5. Start the separate WebLogic instance.
6. Before SOA composites deployment, import the Policy Templates and Policies.
   a. First, import the policy template jar using Enterprise Manager.

      Linux

      ```
      cd $SPLEBASE/soaapp
      ant –f package-soa-policy.xml –Dproduct=d1
      ```

      Windows

      ```
      cd %SPLEBASE%/soaapp
      ant –f package-soa-policy.xml –Dproduct=d1
      ```

      i. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

      ii. Right click on the domain and navigate to **Web Services, WSM Policies.**

      iii. Click on **Web Services Assertion Templates** at the top of the page

      iv. Click on **Import From File** and import the sgg-d1-policy.jar zip.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars

   b. First, import the policy template jar using Enterprise Manager.
      Linux

      ```
      cd $SPLEBASE/soaapp
      ant –f package-soa-policy.xml –Dproduct=d6
      ```

      Windows

      ```
      cd %SPLEBASE%/soaapp
      ant –f package-soa-policy.xml –Dproduct=d6
      ```

      i. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.

      ii. Right click on the domain and navigate to **Web Services, WSM Policies.**

      iii. Click on **Web Services Assertion Templates** at the top of the page

      iv. Click on **Import From File** and import the sgg-d6-policy.jar file.

      This file is located in the following directory:

      UNIX: $SPLEBASE/soaapp/policies/jars

      Windows: %SPLEBASE%\soaapp\policies\jars
7. Deploy the SOA cartridge on the separate WebLogic instance.

Note: Modify the SOA Host Server, SOA Port Number, SOA WebLogic User Name, SOA WebLogic User Password and Endpoint URLs menu items according to separate domain using "SOA Configuration Menu item 9".

UNIX

```
cd $SPLEBASE/soaapp
```

For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D6.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

Windows

```
cd %SPLEBASE%\soaapp
```

For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
 -soa_MDF.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant
-buildfile deploy-soa_D6.xml
-Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
```

8. Deploy the Test Harness SOA composites on the separate WebLogic instance.

UNIX

```
cd $SPLEBASE/soaapp

For WebLogic 12c:

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D6.xml
deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Windows

```
cd %SPLEBASE%\soaapp
```

For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D6.xml
 deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Configuring Security for the SOA System

Security is managed through policies attached to the input and output points of each composite. More information on policies and their configuration can be found in the *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*, Chapter Configuring Policies.

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click on the domain, and choose **Security, Credentials**.
2. On the **Credentials** page, click **Create Map.**
3. **In the Create Map dialog, name the map oracle.wsm.security, then click OK.**
4. Click **Create Key and enter the following values:**
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d6.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name
    - **Password:** A valid WebLogic password
5. Click **OK.**
6. Click **Create Key again and enter the following values:**
    - **Select Map:** oracle.wsm.security
    - **Key: s**gg.d6.ouaf.credentials
    - **Type:** Password
    - **Username:** A valid OUAF user name
    - **Password:** A valid OUAF password
7. Click **OK.**

Configuring Security for the SOA System to Communicate with the Head-End System

Configuring security for the SOA system involves creating the security credentials in Oracle Enterprise Manager, and then creating a web service policy that uses the credentials to communicate with the head-end system. These configuration tasks are described in the following sections:

- Creating the Security Credentials
- Creating the Web Service Policy for the Security Credentials

Creating the Security Credentials

To create the security credential in the Credential File Store (CFS):

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the WebLogic Domain menu, navigate to **Security, Credentials.**
3. Click **Create Map** to set up a new credentials store.
4. In the Create Map dialog box, enter a unique value in the Map Name field.
5. Click **OK.**
6. Select the new map in the Credentials list and click **Create Key.**
7. In the Create Key dialog box, enter the appropriate values in the fields. In the Type field, select **Password.**
8. Click **OK.**

   By default, the sgg_d6_cfs_multispeak_header_client_policy policy imported previously uses a Credential Map named "rni.security" and a Credential Key called “rni.credentials." Use these values unless making changes to the template values.

   Test Harness Note: The test harness is equipped with service policies that authenticate users with credentials in the MultiSpeakMsgHeader. That means the credentials configured in the map and key above should be valid WebLogic users.

Creating the Web Service Policy for the Security Credentials

To create a web service policy for the security credentials:

1. In Oracle Enterprise Manager, navigate to **WebLogic Domain** and select the required SOA domain.
2. In the WebLogic Domain menu, navigate to **Web Services, Policies**.
3. Select the policy oracle/wss_http_token_client_policy.
4. Click **Create Like.**
   a. Give the policy a unique name and an appropriate description.
   b. Under Assertions, remove the Log Message and the HTTP Security policies.
   c. Click **Add.**
   d. Enter a name for the new assertion.

e. In the **Assertion Template** field, select sgg/d1_csf_access_client_xpath_template.

f. Click **OK.**

5. In the Assertion Content field, edit property values in the XML according to the example below. The following table lists the property values that should be edited:

Field	Default Value	Description
csf-map		Required. The credential store map to use. This value is specified in the task **Creating the Security Credentials** on page 7-67.
csf-key		Required. The key in the credential store map that will resolve to a username-password pair. This value is specified in the task **Creating the Security Credentials** on page 7-67.
namespaceDefinitions		Prefix-namespace definitions used in the xpath fields below. Each should be in the form prefix=namespace. Multiple definitions should be separated by spaces. Default namespaces cannot be set.
soapElement	Header	The context node for xpath searches, either the SOAP header or the SOAP body. Legal values are "header" and "body."
userid.xpath		The xpath to the location to inject the username in the SOAP element. The statement must resolve to an attribute or element that already exists.
password.xpath		The xpath to the location to inject the password in the SOAP element. The statement must resolve to an attribute or element that already exists.
isDebuggingActive	false	Reserved for internal use.

```
<orasp:SGGCredentialStoreInsertionXPath xmlns:orawsp="http://
schemas.oracle.com/ws/2006/01/policy" orawsp:Silent="true"
orawsp:name="CSF_Sensus" orawsp:description="Properties to add CSF
credentials to a SOAP message" orawsp:Enforced="true"
orawsp:category="security/authentication" xmlns:orasp="http://
schemas.oracle.com/ws/2006/01/securitypolicy">
    <orawsp:bindings>

<orawsp:Implementation>com.splwg.d1.sgg.soa.common.security.policy.Cre
dentialStorageFacilityAccessAssertationExecutor</
orawsp:Implementation>
        <orawsp:Config orawsp:name="CSFKeyInsertionConfig"
orawsp:configType="declarative">
            <orawsp:PropertySet orawsp:name="CSFKeyProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-map">
```

```
                    <orawsp:Description>Which CSF map to use</
orawsp:Description>
                    <orawsp:Value>CSF_map_name</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="csf-key">
                    <orawsp:Description>Which key in the map to use</
orawsp:Description>
                    <orawsp:Value>CSF_Key</orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="XPathProperties">
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="soapElement">
                  <orawsp:Description>The segment of the soap message
to which to write.  Legal Values are "header" &amp;amp; "body"</
orawsp:Description>
                    <orawsp:Value>header</orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="optional" orawsp:name="namespaceDefinitions">
                    <orawsp:Description>A space-separated list of
prefix-namespace pairs.  For example: ns1=http://myurl.com/ns1
ns2=http://oracle.com xsd=http://www.w3.org/2001/XMLSchema</
orawsp:Description>
                    <orawsp:Value>ns1=http://www.multispeak.org/
Version_4.1_Release</orawsp:Value/>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="userid.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the user id.</
orawsp:Description>
                    <orawsp:Value>./ns1:MultiSpeakMsgHeader/@UserID</
orawsp:Value>
                </orawsp:Property>
                <orawsp:Property orawsp:type="string"
orawsp:contentType="required" orawsp:name="password.xpath">
                    <orawsp:Description>The xpath relative to the
soapElement property at which to insert the password.</
orawsp:Description>
                    <orawsp:Value>./ns1:MultiSpeakMsgHeader/@Pwd</
orawsp:Value>
                </orawsp:Property>
            </orawsp:PropertySet>
            <orawsp:PropertySet orawsp:name="DebugProperties">
                <orawsp:Property orawsp:type="boolean"
orawsp:contentType="optional" orawsp:name="isDebuggingActive">
                    <orawsp:Description>controls debugging output</
orawsp:Description>
                    <orawsp:Value>false</orawsp:Value>
                    <orawsp:DefaultValue>false</orawsp:DefaultValue>
                </orawsp:Property>
            </orawsp:PropertySet>
        </orawsp:Config>
    </orawsp:bindings>
</orasp:SGGCredentialStoreInsertionXPath>
```

6. Save the policy.
7. Attach the policy to the MR_Server reference on the Common composite.

a. In Oracle Enterprise Manager, navigate to the **Sensus/Common** composite.

b. Navigate to the **Policies** tab.

c. From the **Attach To/Detach From** menu, select **MR_Server**.

d. In the Attached Policies window, select the oracle/ wss_http_token_client_policy.

e. Click **Detach** to remove the default security policy.

f. In the Available Policies window, select the policy that you just created.

g. Click **Attach** to attach the policy to the MR_Server reference.

8. Attach the policy to the CD_Server reference on the Common composite.

a. Navigate to the **Sensus/Common** composite.

b. Navigate to the Policies tab.

c. From the **Attach To/Detach From** menu, select **CD_Server.**

d. In the **Attached Policies** window, select the oracle/ wss_http_token_client_policy.

e. Click **Detach** to remove the default security policy.

f. In the **Available Policies** window, select the policy that you just created.

g. Click **Attach** to attach the policy to the CD_Server reference.

9. Attach the policy to the OD_Server reference on the Common composite.

a. Navigate to the **Sensus/Common** composite.

b. Navigate to the **Policies** tab.

c. From the **Attach To/Detach From** menu, select **OD_Server**.

d. In the Attached Policies window, select the oracle/ wss_http_token_client_policy.

e. Click **Detach** to remove the default security policy.

f. In the **Available Policies** window, select the policy that you just created.

g. Click **Attach** to attach the policy to the OD_Server reference.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

Start the environment and run the following command:

UNIX: spl.sh start

Windows: spl.cmd start

Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

You should postpone the startup process until you are done with postinstallation steps.

Use the following utility to stop the environment:

UNIX: spl.sh stop

Windows: spl.cmd stop

Configuration Tasks for the Adapter for Silver Spring Networks

This section describes the tasks that should be taken after installing Oracle Utilities Smart Grid Gateway, including:

- Deploying the OSB Adapter for Silver Spring Networks
- Deploying the SOA Adapter for Silver Spring Networks
- Configuring Security for the SOA System
- Starting the Application

  Note: Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

Deploying the OSB Adapter for Silver Spring Networks

The OSB adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance. To deploy the OSB adapter, use the following procedures:

To Deploy on the Example WebLogic Instance

1. Create the following directories under <OSB_LOG_DIR>:

```
d7-csv
d7-csv-arch
d7-csv-error
d7-ssnxml
d7-ssnxml-arch
d7-ssnxml-error
```

2. Start the example OSB WebLogic instance.

   UNIX

```
cd $SPLEBASE/osbapp
./startWebLogic.sh
```

Windows

```
cd %SPLEBASE%\osbapp
startWebLogic.cmd
```

3. Create JMS queues and target them to the OSB admin server:
    a. Create a JMS server OSB-JMSServer" and target it to admin server.
    b. Create a JMS module D7-SystemModule.
    c. Under D7-SystemModule create a sub-deployment D7-JMSFAServer and target it to OSB-JMSServer.
    d. Create the following JMS queues:

    Queue Name: DestinationQueue-D7

    JNDI Name: DestinationQueue-D7

    Sub-deployment: D7-JMSFAServer

    Targets: OSB-JMSServer

    Queue Name: IMDDestinationQueue-D7

    JNDI Name: IMDDestinationQueue-D7

    Sub-deployment: D7-JMSFAServer

    Targets: OSB-JMSServer

    Queue Name: NotificationQueue-D7

    JNDI Name: NotificationQueue-D7

    Sub-deployment: D7-JMSFAServer

    Targets: OSB-JMSServer

4. Deploy the OSB adapter on the example WebLogic instance.
For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

UNIX

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D7.xml
-Dadmin.user=<ADMIN_USER> -Dadmin.password=<OSB_ADMIN_PASSWORD> -
Douaf.user=<JMS_USER>
- Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

To Deploy on a Separate WebLogic Instance

Note: See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying OSB components on a separate WebLogic server.

1. Create the following directories under <OSB_LOG_DIR>:

```
d7-csv
d7-csv-arch
d7-csv-error
d7-ssnxml
d7-ssnxml-arch
d7-ssnxml-error
```

2. Copy the following jars to the lib folder under the WebLogic's domain directory:

```
spl-d1-osb-2.2.0.1.0.jar
spl-d7-osb-2.2.0.1.0.jar
```

These jars are present under the following location:

UNIX: $SPLEBASE/etc/lib

Windows: %SPLEBASE%\etc\lib

3. Start the separate WebLogic instance.
4. Create JMS queues and target them to the OSB admin server:
   - Create a JMS server OSB-JMSServer" and target it to admin server.
   - Create a JMS module D7-SystemModule.
   - Under D7-SystemModule create a sub-deployment D7-JMSFAServer and target it to OSB-JMSServer.
   - Create the following JMS queues:

     Queue Name: DestinationQueue-D7

     JNDI Name: DestinationQueue-D7

     Sub-deployment: D7-JMSFAServer

Targets: OSB-JMSServer

Queue Name: IMDDestinationQueue-D7

JNDI Name: IMDDestinationQueue-D7

Sub-deployment: D7-JMSFAServer

Targets: OSB-JMSServer

Queue Name: NotificationQueue-D7

JNDI Name: NotificationQueue-D7

Sub-deployment: D7-JMSFAServer

Targets: OSB-JMSServer

5. Deploy the OSB adapter on the separate WebLogic instance.
   For SSL deployment, please refer to the section Deploying OSB adapter on SSL.

   UNIX

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER> -Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

   Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-osb_D7.xml
-Dadmin.user=<OSB_ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version.

```
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-osb_D7.xml
update_osb -Dadmin.user=<ADMIN_USER> -
Dadmin.password=<OSB_ADMIN_PASSWORD>
-Douaf.user=<JMS_USER>  -Douaf.password=<JMS_PASSWORD>
```

   This will not override any OSB custom changes

Deploying the SOA Adapter for Silver Spring Networks

The SOA adapter can be deployed on the bundled WebLogic example server instance or on a separate WebLogic server instance.

> **Note:** Oracle Enterprise Manager may be required for some of the security setups and for monitoring SOA. If Oracle Enterprise Manager is required, you need to extend the example SOA WebLogic domain and enable Enterprise Manager using WebLogic's configuration utility.

To deploy the SOA adapter, use the following procedures.

To Deploy on the Example WebLogic Instance

1. Edit the startWeblogic script located at below locations for JAVA_OPTIONS:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp startWebLogic.cmd
   ```

2. Add "-Djava.security.auth.login.config=${DOMAIN_HOME}/config/SGGLogin.config -Djavax.net.ssl.trustStore=<<JAVA_TRUST_STORE_LOCATION>>" to the JAVA_OPTIONS

3. Start the example SOA WebLogic instance:

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ./startWebLogic.sh
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   startWebLogic.cmd
   ```

4. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D7.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

   Windows

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
   ```

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D7.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

5. Deploy the TestHarness SOA composites on example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

```
cd $SPLEBASE/soaapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D7.xml
deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

   Windows

   Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_D7.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

To Deploy on a Separate WebLogic Instance

Note: See Configuration of Oracle Fusion Middleware Components on a Separate Server from Oracle Utilities Service and Measurement Data Foundation for more information about deploying SOA components on a separate WebLogic server.

1. Create WebLogic SOA Domain and select Enterprise Manager option also.
2. Copy the following jar file to the lib folder under the WebLogic domain directory, spl-d1-soa-security.jar

   This jar is present under the following location:

   UNIX: $SPLEBASE/etc/lib

   Windows: %SPLEBASE%\etc\lib

3. Append following XML snippet to <MIDDLEWARE_HOME>\user_projects\domains\SGG_2007_SOADomain\config\fmwconfig\system-jazn-data.xml:

```
<grant>
<grantee>
<codesource>
<url>file:${domain.home}/lib/spl-d1-soa-security.jar</url>
</codesource>
</grantee>
<permissions>
<permission>
<class>oracle.security.jps.service.credstore.CredentialAccessPermi
ssion</class>
<name>context=SYSTEM,mapName=*,keyName=*</name>
<actions>*</actions>
</permission>
</permissions>
<permission-set-refs>
</permission-set-refs>
```

```
</grant>
```

4. Copy the SGGLogin.config file from below location to the config directory of Weblogic SOA domain and edit the startWeblogic script located of Weblogic SOA domain-> bin for JAVA_OPTIONS:

   This SGGLogin.config is present under the following location:

   UNIX: $SPLEBASE/soaapp/config

   Windows: %SOA_HOME%\soaapp\config

   Copy the file.

   Unix :<Weblogic_SOA_domain>/config

   Windows: <Weblogic_SOA_domain>\config

5. Start the separate WebLogic instance.
6. Create JMS queues and target them to the SOA managed server:
   a. Create a JMS Server:
      a. Under Domain Structure, navigate to **Services, Messaging, JMS Servers.**
      b. On the JMS Servers Page, Click on **New**.
      c. On the Create a New JMS Server page:
         - Provide a name for your JMS Server, for example, SSN-JMSServer.
         - Select a Persistent Store to SOAJMSFileStore, click **Next.**
         - On the next screen, select the SOA_Server as Target Server instance where you would like to deploy this JMS Server.
         - Select the Target Server from the dropdown list and click **Finish** to complete the JMS server creation. Make sure you activate the changes.
         - You should now find your new JMS Server in the JMS Servers List.
   b. Create a JMS Module.
      a. On the Create JMS System Module screen, enter name, for example, SSN-SystemModule (You can leave other fields empty if you want.).
      b. Select the SOA Server you would like to target (ideally, this would be the same server that is hosting the JMS server you created above).

         For example, soa_server1
      c. On the next screen click **Finish and Activate changes.**
   c. Create Queues:
      a. Click on **New** in JMS Module to create the Queue.
      b. Provide a name (for example, SSNTestSSNODRQ) and a JNDI name (for example, queue/SSNTestSSNODRQ).
      c. Select a subdeployment (for example, SSN-JMSFAServer) if you already created or follow below steps to create a new subdeployment. (A subdeployment is a convenient way for grouping and targeting JMS module resources.)

d. Provide a name for the subdeployment (E.g. SSN-JMSFAServer) and click **OK.**

- Select the target JMS Server we created (E.g. SSN-JMSServer) and Click **finish**.
- Click on **New** in JMS Module to create the Queue.
- Provide a name (e.g., SSNODRQ) and a JNDI name (e.g., queue/SSNODRQ)
- Select a subdeployment (for example, SSN-JMSFAServer) if you already created or follow below steps to create a New Subdeployment.(A subdeployment is a convenient way for grouping and targeting JMS module resources.)
- Provide a name for the subdeployment (for example, SSN-JMSFAServer) and click **OK**.
- Select the target JMS Server we created (for example, SSN-JMSServer) and Click **finish**.

d. Create JMS Connection Factory.

a. Click on **New** in JMS Module to create the Connection factory.

b. Give the Connection factory a name (for example, SSNTestHarnessConnectionFactory and JNDI name (for example, jms/SSNTestHarnessConnectionFactory). Click **Next**.

c. Select **Advance Targeting** and on the next page select the subdeployment you created above (SSN-JMSFAServer). Wait for the page to refresh and click on **Finish**.

d. Click on **New** in JMS Module to create the Connection factory.

e. Give the Connection factory a name (for example, SSNConnectionFactory) and JNDI name (for example, jms/SSNConnectionFactory). Click **Next.**

f. Select **Advance Targeting** and on the next page select the subdeployment you created above (SSN-JMSFAServer). Wait for the page to refresh and click **Finish**.

e. Create a Source JMS Bridge Destination:

a. Under Domain Structure, navigate to **Services, Messaging, Bridge, JMS Bridge Destinations.**

b. On the JMS Bridge Destinations Page, Click on **New** button. On the Create a New JMS Bridge Destination page:

- Provide a name for your JMS Bridge destination SSNTestHarnessBridgeDestination.
- Select Adapter JNDI named eis.jms.WLSConnectionFactoryJNDINoTX.
- Provide Initial Context Factory as weblogic.jndi.WLInitialContextFactory.
- Provide Connection URL as t3://@SSN_UIQ_HOST@:@SSN_UIQ_PORT@.

- Provide Connection Factory JNDI name as jms/SSNTestHarnessConnectionFactory.
- Provide Destination JNDI name as queue/SSNTestSSNODRQ.
- Select Destination type as queue.
- Provide username.
- Provide password.
- Confirm the password.

Note: Once you created JMS Bridge Destination, Click on Services > Messaging > Bridge > JMS Bridge Destinations > SSNSOABridgeDestination.

- On the SSNSOABridgeDestination page, enter username and password values. Click **Save**.

f. Create a Target JMS Bridge Destination.

a. Under Domain Structure, navigate to **Services, Messaging, Bridge, JMS Bridge Destinations.**

b. On the JMS Bridge Destinations Page, Click **New**. On the Create a New JMS Bridge Destination page:

- Provide a name for your JMS Bridge destination SSNSOABridgeDestination.
- Select Adapter JNDI name as eis.jms.WLSConnectionFactoryJNDINoTX.
- Provide Initial Context Factory as weblogic.jndi.WLInitialContextFactory.
- Provide Connection URL as t3://@SOA_HOST@:@SOA_PORT_NUMBER.
- Provide Connection Factory JNDI name as jms/SSNConnectionFactory"
- Provide Destination JNDI name as queue/SSNODRQ.
- Select Destination type as queue.

Note: Once you created JMS Bridge Destination, navigate to **Services, Messaging, Bridge, JMS Bridge Destinations, SSNSOABridgeDestination**.

- On the SSNSOABridgeDestination page, Enter username and password values, Click Save.

g. Create a Bridge.

Under Domain Structure, navigate to **Services, Messaging, Bridges On the Bridges Page.** Click on **New** button. On the Create a New Bridge page:

- Provide a name for Bridge as SSNODRQBridge.
- Select Quality of Service as At most-Once.
- Check Started.

- Click **Next.**
- Select Source Bridge Destination as SSNTestHarnessBridgeDestination.
- Select Messaging Provider as WebLogic Server 7.0 or Higher.

Note: In real time depending on SSN environment this should be changed

- Select Target Bridge Destination as SSNSOABridgeDestination.
- Select Messaging Provider as WebLogic Server 7.0 or Higher.
- Select server as soa_server1.

Note: Any web logic managed server.

- Click **Finish**.

7. Deploy the SOA adapter on the separate WebLogic instance.

   Note: Modify the SOA Host Server, SOA Port Number, SOA WebLogic User Name, SOA WebLogic User Password menu items according to separate domain using SOA Configuration Menu item 9.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

   ```
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D7.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
   ```

   Windows

   ```
   cd %SPLEBASE%\soaapp
   ```

   For WebLogic 12c:

   ```
   %SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
   -soa_MDF.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>

   %SPLEBASE%\product\apache-ant\bin\ant
   -buildfile deploy-soa_D7.xml
   -Dserver.user=<ADMIN_USER> -Dserver.password=<ADMIN_PASSWORD>
   ```

8. Deploy the TestHarness SOA composites on the separate WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

   ```
   cd $SPLEBASE/soaapp
   ```

   For WebLogic 12c:

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_D7.xml
 deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Windows

```
cd %SPLEBASE%\soaapp
```

For WebLogic 12c:

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-soa_D7.xml
 deployTestHarness -Dserver.user=<ADMIN_USER>
-Dserver.password=<ADMIN_PASSWORD>
```

Configuring Security for the SOA System

Security is managed through policies attached to the input and output points of each composite. More information on policies and their configuration can be found in the *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*, Chapter 10: Configuring Policies.

This section describes how to configure security credentials for the SOA system, including:

- Configuring Security for the SOA System to Communicate with the Application Framework
- Configuring Security for the SOA System to Communicate with the Head-End System

Configuring Security for the SOA System to Communicate with the Application Framework

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server.
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click on the domain, and choose **Security, Credentials**.
2. On the **Credentials** page, click **Create Map.**
3. **In the Create Map dialog, name the map oracle.wsm.security, then click OK.**
4. Click **Create Key and enter the following values:**
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d7.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name

- **Password:** A valid WebLogic password

5. Click **OK.**
6. Click **Create Key again and enter the following values:**
    - **Select Map:** oracle.wsm.security
    - **Key: s**gg.d7.ouaf.credentials
    - **Type:** Password
    - **Username:** A valid OUAF user name
    - **Password:** A valid OUAF password
7. Click **OK.**

Configuring Security for the SOA System to Communicate with the Head-End System

Configuring security for the SOA system involves creating the security credentials in Oracle Enterprise Manager and establishing a secure socket layer communications channel to the head end system. These configuration tasks are described in the following sections:

- Creating the Security Credentials
- Attaching Secure Socket Layer (SSL) Policies

Creating the Security Credentials

Configuring security for the SOA system involves using Oracle Enterprise Manager to create the following security credentials:

- A Credential Map
- A Credential Key for the WebLogic Server.
- A Credential Key for the Oracle Utilities Application Framework

Use the following procedure to create the security credentials:

1. In Oracle Enterprise Manager, expand the WebLogic domain, right-click on the domain, and choose **Security, Credentials.**
2. On the **Credentials** page, click **Create Map.**
3. In the Create Map dialog, name the map **oracle.wsm.security,** then click **OK.**
4. Click **Create Key** and enter the following values:
    - **Select Map:** oracle.wsm.security
    - **Key:** sgg.d7.ssn.credentials
    - **Type:** Password
    - **Username:** A valid WebLogic user name
    - **Password:** A valid WebLogic password
5. Click OK.

Importing the Policy Templates and Policies.

Follow the procedure below to import the policy templates and policies:

a. First, import the policy template jar using Enterprise Manager.

   For **Linux**:

   ```
   cd $SPLEBASE/soaapp
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

   For **Windows**
   cd %SPLEBASE%/soaapp

   ```
   ant –f package-soa-policy.xml –Dproduct=d1
   ```

b. In Oracle Enterprise Manager, navigate to WebLogic Domain and select the required SOA domain.

c. Right click on the domain and navigate to **Web Services**, **WSM Policies**.

d. Click on **Web Services Assertion Templates** at the top of the page

e. Click on **Import** and import the sgg-d1-policy.jar zip.

   This file is located in the following directory:

   UNIX: $SPLEBASE/soaapp/policies/jars

   Windows: %SPLEBASE%\soaapp\policies\jars

Attaching Secure Socket Layer (SSL) Policies

Silver Springs Networks accepts SSL transmissions to secure web service calls to their head-end system. Oracle web service references communicating with the head-end system include OWSM policies that implement HTTPS over SSL. The following services are all contained in the Common composite:

- JobManager
- DeviceManager
- DataAggregation
- DeviceResults

Each of these is configured to use the credential created above that uses the "sgg.d7.ssn.credentials" key.

Starting the Application

The OSB WebLogic server instance should be up and running before starting the main application.

The first time you start Oracle Utilities Smart Grid Gateway, you need to log in to the WebLogic console and give system access to cisusers role. The WebLogic console application can be accessed through the following URL:

http://<hostname>:<portname>/console

1. Start up the environment. Run the following command:

   UNIX: spl.sh start

   Windows: spl.cmd start

Follow the messages on the screen along with the logs in $SPLSYSTEMLOGS directory to ensure that the environment was started successfully.

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

You should postpone the startup process until you are done with postinstallation steps.

Use the following utility to stop the environment:

UNIX: spl.sh stop

Windows: spl.cmd stop

Operating the Application

At this point your installation and custom integration process is complete. Be sure to read the Oracle Utilities Smart Grid Gateway *Server Administration Guide* for more information on further configuring and operating the system.

Creating an Example WebLogic Domain

This section provides the steps to create example weblogic domains of OSB and SOA which are created under osbapp and soaapp. Before executing the below scripts, Repository Creation Utility (RCU) should be used to create schemas required for the respective domains and the values of prefix & password used for creation of schemas should be specified in the configuration menu.

Oracle does recommend the usage of example domains for production use.

Creating an OSB Example Domain

Follow the procedure below to create an OSB example domain:

1. Ensure that values are set for the following menu items.
   Please refer to Appendix B - "8. OSB Configuration" for more information.
   - OSB Port Number
   - OSB SSL Port Number
   - JDBC URL for database
   - OSB Service Table Schema Name
   - OSB Service Table Schema Password
2. Run the following commands:

   Linux:

   ```
   cd $SPLEBASE/bin
   ./createDomain.sh –t OSB
   ```

Windows

```
cd %SPLEBASE%/bin
./createDomain.cmd -t OSB
```

Creating a SOA Example Domain

Follow the procedure below to create a SOA example domain:

1. Ensure that values are set for the following menu items.
   Please refer to Appendix B - "9. SOA Configuration" for more information
   - SOA Port Number
   - SOA SSL Port Number
   - JDBC URL for database
   - SOA Service Table Schema Name
   - SOA Service Table Schema Password
2. Run the following commands:

   Linux:

   ```
   cd $SPLEBASE/bin
   ./createDomain.sh -t SOA
   ```

   Windows

   cd %SPLEBASE%/bin

   ```
   ./createDomain.cmd -t SOA
   ```

Deploying OSB Adapter on SSL

This section describes steps to deploy OSB on SSL.

1. Set the OSB SSL Port Number and configure Menu 60 should be configured appropriately. Refer to Appendix B Installation and Configuration Worksheets for detailed info.
   - Enable OSB SSL Port
   - OSB Trust Keystore Type
   - OSB Trust Keystore File Type
   - OSB Trust Keystore File
2. Run the following commands when using Custom trust store:

   Note: Replace <adapter> in the below commands with the respective adapter name i.e (LG, D4, MV90, D6, D7, D8, DG).

   UNIX

   ```
   cd $SPLEBASE/osbapp
   $SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
   osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
   -Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
   ```

```
-Douaf.password=<JMS_PASSWORD> -
Dosb.keystore.passphrase=<passphrase_of_truststore_for_osb_deploym
ent>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -
Dosb.keystore.passphrase=<passphrase_of_ truststore
_for_osb_deployment>
```

This will not override any OSB custom changes

Windows

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp

%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -
Dosb.keystore.passphrase=<passphrase_of_ truststore
_for_osb_deployment>
```

This will not override any OSB custom changes

3. The following commands are required when using Demo trust store:

   Note: Replace <adapter> in the below commands with the respective adapter name i.e (LG, D4, MV90, D6, D7, D8, DG).

   UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

   Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Windows

```
cd %SPLEBASE%\osbapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp

%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD>
```

This will not override any OSB custom changes.

Deploying SOA Composites on SSL

This section describes steps to deploy SOA composites on SSL.

1. Set SOA SSL Port Number and Menu 64 should be configured appropriately. Refer Appendix B Installation and Configuration Worksheets for detailed info.
    - Enable SOA SSL Port
    - SOA Trust Keystore Type
    - SOA Trust Keystore File Type
    - SOA Trust Keystore File
2. Create partitions on the Enterprise Manager console.
    a. For Adapter Development Kit, create the following partitions on the EM console:
        - MDF
        - DG
        - DG_TEST
    b. For Adapter for Networked Energy Services, create the following partitions on the EM console:
        - MDF
        - Echelon
        - Echelon_Test
    c. For Adapter for Itron Openway, create the following partitions on the EM console:
        - MDF

- Itron
- Itron_Test

d. For Adapter for Landis+Gyr create the following partitions on the EM console:

- MDF
- LG
- LG_Test

e. For Adapter for Sensus RNI, create the following partitions on the EM console:

- MDF
- Sensus
- Sensus_Test

f. For Adapter for Silver Springs Networks, create the following partitions on the EM console:

- MDF
- SSN
- SSN_Test

3. The following commands are required when using Demo trust store, <adapter> in below commands should be replaced with respective adapter name i.e (LG, D4, D6, D7, D8, DG).

4. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

```
cd $SPLEBASE/soaapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
soa_<adapter>.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

   Windows

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
soa_<adapter>.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD>
```

5. Deploy the TestHarness SOA composites on example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

   UNIX

```
cd $SPLEBASE/soaapp
```

```
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
soa_<adapter>.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD>
```

Windows

Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_<adapter>.xml deployTestHarness  -
Dserver.password=<SOA_USER>
  -Dserver.password=<SOA_PASSWORD>
```

6. The following commands are required when using Custom trust store, <adapter> in below commands should be replaced with respective adapter name i.e (LG, D4, D6, D7, D8, DG)
7. Add the following line in the file soa.properties, located at below locations:

```
javax.net.ssl.trustStorePassword=<passphrase_of_truststore
_for_soa_deployment>
```

Linux: $SPLEBASE/soaapp

Windows: %SPLEBASE%/soapp

8. Deploy the SOA adapter on the example WebLogic instance.

   For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

UNIX

```
cd $SPLEBASE/soaapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD> -
DsysPropFile=soa.properties

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
soa_<adapter>.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD> -
DsysPropFile=soa.properties
```

Windows

```
%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy
-soa_MDF.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD> -
DsysPropFile=soa.properties

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
soa_<adapter>.xml
-Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD> -
DsysPropFile=soa.properties
```

9. Deploy the TestHarness SOA composites on example WebLogic instance.

For the SSL deployment procedure, refer to the section Deploying SOA Composites on SSL.

UNIX

```
cd $SPLEBASE/soaapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
soa_<adapter>.xml deployTestHarness  -Dserver.password=<SOA_USER>
 -Dserver.password=<SOA_PASSWORD> -DsysPropFile=soa.properties
```

Windows

Note: Open the command prompt as Administrative mode and then select the environment to deploy SOA.

```
cd %SPLEBASE%/soaapp
%SPLEBASE%\product\apache-ant\bin\ant -buildfile
deploy-soa_<adapter>.xml deployTestHarness -
Dserver.user=<SOA_USER> -Dserver.password=<SOA_PASSWORD> -
DsysPropFile=soa.properties
```

Deploying OSB Adapters with DataRaker

This section describes steps to deploy OSB with Dataraker functionality.

Note: Replace <adapter> in the commands below with the respective adapter name i.e (LG, D4, MV90, D6, D7, D8, DG).

1. Run the following commands:

UNIX

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -Ddeploy.dataraker=true
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd $SPLEBASE/osbapp

$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -Ddeploy.dataraker=true
```

This will not override any OSB custom changes

Windows

```
cd %SPLEBASE%\osbapp

%SPLEBASE%\product\apache-ant\bin\ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -Ddeploy.dataraker=true
```

Note: Use the following command if this is an upgrade from a previous version:

```
cd %SPLEBASE%/osbapp
%SPLEBASE%/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml
update_osb -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -Ddeploy.dataraker=true
```

This will not override any OSB custom changes

2. For SSL deployment of OSB adapters with DataRaker functionality, please refer Deploying OSB adapters on SSL with argument "-Ddeploy.dataraker=true"

   The below is an example command for Linux with Custom trust store:

```
cd $SPLEBASE/osbapp
$SPLEBASE/product/apache-ant/bin/ant -buildfile deploy-
osb_<adapter>.xml -Dadmin.user=<ADMIN_USER>
-Dadmin.password=<OSB_ADMIN_PASSWORD> -Douaf.user=<JMS_USER>
-Douaf.password=<JMS_PASSWORD> -
Dosb.keystore.passphrase=<passphrase_of_truststore_for_osb_deploym
ent> - Ddeploy.dataraker=true
```

3. For Dataraker messages to pass through SSL, open SB console of OSB.
4. Select the DataRakerBusinessService under each of the adapter specific CM project
5. Create an OSB session by clicking on the "**Create**" button on top-left of the screen
6. Navigate to **Transport Detail** in the **Business Service Definition.**
7. Select **Enable SSL** under **Advanced Options.**
8. Click **Save** in the **Business Service** definition tab.
9. Click **Activate.**
10. Configure a queue on the SOA server for DataRaker functionality.
11. Create the following JMS queues:

    Queue Name: DataRakerQueue

    JNDI Name: DataRakerQueue

    Sub-deployment: SOASubDeployment

    Targets: SOAJMSServer

Chapter 8

Installing Oracle Utilities Service Order Management

This chapter describes steps required for a successful Oracle Utilities Service Order Management installation.

Installation Overview

The following overview guides you through the installation process. The details for each step are presented as individual chapters in the rest of this guide.

1. Confirm that the recommended hardware is ready. Refer to Operating Systems and Application Servers for more details.
2. Install prerequisite software. Refer to the Installing Prerequisite Software for more details.

   Note: Oracle Utilities Service Order Management only supports WebLogic version 12.1.3.0+ and Oracle Service Bus/Oracle SOA Suite 12.2.1.
3. Ensure that you have downloaded the Oracle Utilities Service Order Management V2.2.0.1 components from Oracle Software Delivery Cloud.
4. Go through the Appendix B**:** Installation and Configuration Worksheets to understand the configuration menu.
5. Determine the type of the installation: initial or demo.

   Refer to the sections Initial Installation or Demo Installation for more information.
6. Integrate Oracle Utilities Customer Care and Billing (CCB) with Oracle Utilities Service Order Management (SOM) by following the instructions in the document *Oracle Utilities Customer Care and Billing Integration to Oracle Utilities Service Order Management Installation Guide.*
7. Integrate Oracle Utilities Service Order Management (SOM) with Oracle Utilities Mobile Workforce Management (MWM) by following the instructions in the document *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Installation Guide.*

Initial Installation

A successful initial installation of SOM involves the installation of the following components:

- Oracle Utilities Service Order Management Database Component
  For the steps to install the database, refer to the chapter "Installing the Database for Service Order Management" in the Oracle Utilities Smart Grid Gateway *Database Administrator's Guide*.
- Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4) Application Component
- Oracle Utilities Application Framework V4.3.0.4 Single Fix Prerequisite Rollup for SMDF V2.2.0.1
- Oracle Utilities Service and Measurement Data Foundation V2.2.0.1 Application Component
- Oracle Utilities Meter Data Management V2.2.0.1 Application Component
- Adapter for Itron
- Adapter for Landis+Gyr

To install all of the above components, follow the instructions mentioned in Chapter 4**:** Installing Oracle Utilities Smart Grid Gateway—Initial Installation.

Demo Installation

A successful installation of SOM involves the installation of the following components:

- Oracle Utilities Service Order Management Database Component
  For the steps to install the demo database, refer to the chapter "Installing the Database for Service Order Management" in the *Oracle Utilities Smart Grid Gateway Database Administrator's Guide*.
- Oracle Utilities Application Framework V4.3.0 Service Pack 4 (4.3.0.4) Application Component
- Oracle Utilities Application Framework V4.3.0.4 Single Fix Prerequisite Rollup for SMDF V2.2.0.1
- Oracle Utilities Service and Measurement Data Foundation V2.2.0.1 Application Component.
- Oracle Utilities Meter Data Management V2.2.0.1 Application Component
- Adapter for Itron
- Adapter for Landis+Gyr

To install all of the above components, follow the instructions mentioned in chapter Chapter 5**:** Installing Oracle Utilities Smart Grid Gateway—Demo Installation.

Chapter 9

Additional Tasks

`This section describes tasks that should be completed after installing Oracle Utilities Smart Grid Gateway, including:

- Importing Self-Signed Certificates
- Customizing Configuration Files
- Integrating Existing Customer Modifications
- Generating the Application Viewer
- Building Javadocs Indexes
- Configuring the Environment for Batch Processing
- Customizing the Logo
- Configuring Secure Sockets Layer (SSL)
- Setting Up an Application Keystore
- Domain Templates (Linux WebLogic 12.1.3.0+ and WebLogic 12.2.1.1+ only)
- Database Patching

Importing Self-Signed Certificates

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

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 $SPLENVIRON
 For example:
/ouaf/TEST_ENVIRON1/bin/splenviron.sh -e TEST_ENVIRON1
```

Windows

```
%SPLEBASE%\bin\splenviron.cmd -e %SPLENVIRON%
For example:
D:\ouaf\TEST_ENVIRON1\bin\splenviron.cmd -e TEST_ENVIRON1
```

3. Execute the following script to generate all information:

   UNIX
   ```
   $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.

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 $SPLENVIRON

   For example:

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

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

   For example:

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

3. Execute the following script to generate all information.

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

   Windows

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

4. Restart your application.

Building Javadocs Indexes

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

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

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.

WebSphere Server:

- Create the password file.

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

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

- Add Keystore entries to spl.properties templates:

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

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

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

- spl.properties.iws.template
- spl.properties.template
- spl.properties.service.template
- spl.properties.XAIApp.template
- spl.properties.standalone.template

3. Re-initialize the environment to propagate these changes by executing the initialSetup.sh/cmd.
4. Restart the environment.

Domain Templates (Linux WebLogic 12.1.3.0+ and WebLogic 12.2.1.1+ only)

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

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

  Note: Environment will need to be configuring to deploy in ear format.
- Review domain templates (Simple /Complex).
- Execute config.sh 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

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.

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

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

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

- JTA Settings
- Node Manager Settings
- WebLogic Server

Configure Node Manager Properties to allow SSL

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

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

- CustomIdentityKeyStorePassPhrase=
- CustomIdentityPrivateKeyPassPhrase=

Set these to the value "0uaf_demo_c3rt"

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

Configure setDomainEnv.sh Script

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.

Update SPLEBASE

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

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

==========

4. 02. Configuration Option: Domain Home Location

   Current Value <ENTER>:

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

   Enter Value: <Enter your domain home location>

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

Update setDomainEnv.sh

To update serDomainEnv.sh, follow these steps:

1. 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
2. Update setUserOverrides.sh.
3. Edit setUserOverrides.sh and add the below to JAVA_OPTIONS. For AIX, the below parameters 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
```

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

To initialize the environment enter:

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

For example:

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

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

In the below example you should replace the following variables:

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

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

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

For example:

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

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

   UNIX

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

   Windows

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

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

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

   ```
   jar xvf db_patch_standalone.jar
   ```

   Note: You must have Java 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 would be set to /ouaf/dbpatch/bin

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

Unix Sample - Database Patch Application (ouafDatabasePatch.sh)

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

- Sample Execution – Passing a Password

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

- Sample Execution – Prompting for a Password

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

- Sample Execution - passing in the tools bin location

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

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

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

Windows Sample - Database Patch Application (ouafDatabasePatch.cmd)

- Sample Execution – Passing a Password

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

- Sample Execution – Prompting for a Password

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

- Sample Execution - passing in the tools bin location

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

Windows Sample Usage

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

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 <<Shared All OUAF - Install_Supported_Platforms_OS_AS.fm 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

This section includes the following topics:

- Application Framework Installation and Configuration Worksheets
- Service and Measurement Data Foundation Installation and Configuration Worksheets
- Smart Grid Gateway Installation and Configuration Worksheets
  - For the Adapter Development Kit
  - For the Adapter for Networked Energy Services
  - For the Adapter for Itron OpenWay
  - For the Adapter for Landis+Gyr
  - For the Adapter for Sensus RNI
  - For the Adapter for Silver Spring Networks

Application Framework Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in the Chapter 12**:** Installing the Application Server Component of Oracle Utilities Application Framework. No Customer Install Value fields should be left blank.

> **Note:** Some web application server information will not be available until the software installation steps have been completed as described in the Chapter 12**:** Installing Application Server Prerequisite Software.

Refer to the *Oracle Utilities 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 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	
Installation Application Viewer Module	WEB_ ISAPPVIEWER	
Install Demo Generation Cert Script	CERT_INSTALL_ SCRIPT	

Menu Option	Name Used in Documentation	Customer Install Value
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	
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	

Menu Option	Name Used in Documentation	Customer Install Value
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	

Menu Option	Name Used in Documentation	Customer Value Install
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_MAXPER MSIZE	

Menu Option	Name Used in Documentation	Customer Install Value
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	

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

Menu Block 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_SET TING	
SPML IDM Schema Name	OIM_SPML_UBER_SCHEMA_NA ME	
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:

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	

Service and Measurement Data Foundation Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in Installing the Application Server Component of Oracle Utilities Service and Measurement Data Foundation. No Customer Install Value fields should be left blank.

Some web application server information will not be available until the software installation steps have been completed as described in Chapter 12**:** Installing Application Server Prerequisite Software.

> **Note:** The OSB configuration and SOA configuration menus are optional for Oracle Utilities Meter Data Management and Oracle Utilities Customer To Meter and can be skipped. These configurations are required in case another product such as Oracle Utilities Smart Grid Gateway will also be installed on top of Oracle Utilities Service and Measurement Data Foundation.

WebLogic OSB Configuration

The WebLogic OSB configuration includes:

Menu Option	Name Used In Documentation	Customer Install Value
OSB Home	OSB_HOME	
OSB Host Server	OSB_HOST	
OSB Port Number:	OSB_PORT_NUMBER	
OSB SSL Port Number	OSB_SSL_PORT	
JDBC URL for database	DBURL_OSB	
OSB Service Table Schema Name	RCUSTBSCHEMA_ OSB	
OSB Service Table Schema Password	RCUSTBSCHEMAPWD_OSB	
OSB WebLogic User Name	WEBLOGIC_ USERNAME_OSB	
OSB WebLogic User Password	WEBLOGIC_ PASSWORD_OSB	
OSB WebLogic User Password	OSB_PASS_WLS	
Mount point for OSB files	OSB_LOG_DIR	

WebLogic SOA Configuration

The WebLogic SOA Configuration includes:

Menu Option	Name Used in this Documentation	Customer Install Value
SOA Home	SOA_HOME	
SOA Host Server	SOA_HOST	
SOA Port Number:	SOA_PORT_NUMBER	
SOA SSL Port Number	SOA_SSL_PORT_ NUMBER	
SOA Internal URL	SOA_INTERNAL_URL	
SOA External URL	SOA_EXTERNAL_URL	
JDBC URL for database	DBURL_SOA	
SOA Service table schema Name	RCUSTBSCHEMA_SOA	
SOA Service table schema Password	RCUSTBSCHEMAPWD_SOA	
SOA WebLogic User Name	WEBLOGIC_ USERNAME_SOA	
SOA WebLogic User Password	WEBLOGIC_ PASSWORD_SOA	
Specify the path for XAI/IWS Service	WEB_SERVICE_PATH	

WebLogic SOA Configuration Plan

This configuration is required for installing the following adapters:

- Oracle Utilities Smart Grid Gateway Adapter for Itron OpenWay

The WebLogic SOA Configuration Plan includes:

Menu Option	Name Used In Documentation	Customer Install Value
MDF Bulk Request Callback URL	D1_BULK_REQUEST_CALLBAC K_URL	
MDF Headend http connection timeout	D1_HEADEND_HTTP_CONN_T IMEOUT	
MDF Headend http read timeout	D1_HEADEND_HTTP_READ_T IMEOUT	
MDF SOA Request Queue JNDI Name	SOA_REQUEST_QUEUE_D1	
MDF SOA Notify Queue JNDI Name	SOA_NOTIFY_QUEUE_D1	

Menu Option	Name Used In Documentation	Customer Install Value
MDF SOA Commnad Queue JNDI Name	SOA_COMMAND_QUEUE_D1	
SGG-NMS TestHarness Partition Name	SOA_PARTITION_D1	

Configuration for DataRaker Integration

The Configuration for DataRaker Integration includes:

Menu Option	Name Used In Documentation	Customer Install Value
Destination Queue to publish SGG payloads for DataRaker Integration Tool	SGG_DR_INT_ QUEUE	
Number of records (SGG Payloads) to accumulate	SOA_DR_PUBLISH_ SIZE	
Max file size for the accumulated (SGG Payloads) file in Kilobytes	SOA_DR_FILE_SIZE	
Specify a time which, when exceeded, causes a new outgoing file to be created in seconds	SOA_DR_ELAPSED_TIME	
Polling frquency of Staging directory for new files in seconds	SOA_DR_POLLING_FREQ	
Mount point/directory for the accumulated SGG payload file	SOA_DR_STAGING_DIR	
Mount Point/directory for the converted XML file to place for DataRaker	SOA_DR_ INTEGRATION_DIR	

Advanced Menu Options

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

Unix

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

Windows

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

Advanced Menu Option for OSB SSL Deployment

The Advanced Menu Option for OSB SSL deployment includes:

Menu Option	Name Used In Documentation	Customer Install Value
Enable OSB SSL Port	OSB_SSL	
OSB Trust Keystore Type	OSB_TRUST_KS	
OSB Trust Keystore File Type	OSB_TRUST_KS_ TYPE	
OSB Trust Keystore File	OSB_TRUST_KS_ FILE	

Advanced Environment Memory Configurations

The Advanced Environment Memory configurations include:

Menu Option	Name Used In Documentation	Customer Install Value
SOA Initial Heap Size	SOA_MEMORY_OPT_MIN	
SOA Maximum Heap Size	SOA_MEMORY_OPT_MAX	
SOA Minimum Perm Size	SOA_MEMORY_OPT_MINPERM SIZE	
SOA Maximum Perm Size	SOA_JVM_ ADDITIONAL_OPT	
The name of the OWSM policy to use when SOA calls another SOA service	SOA_SOA_CLIENT_ POLICY	
The name of the OWSM policy to use when SOA is called by another SOA service	SOA_SOA_SERVICE_POLICY	
The name of the OWSM policy to use when SOA calls an OUAF service	SOA_SOA_SERVICE_POLICY	

The Advanced Memory Configurations for OSB includes:

Menu Option	Name Used In Documentation	Customer Install Value
OSB Initial Heap Size	OSB_MEMORY_OPT_MIN	
OSB Maximum Heap Size	OSB_MEMORY_OPT_MAX	
OSB Minimum Perm Size	OSB_MEMORY_OPT_MINPERM SIZE	

Menu Option	Name Used In Documentation	Customer Install Value
OSB Maximum Perm Size	OSB_MEMORY_OPT_MAXPERMSIZE	
OSB Application Additional Options	OSB_JVM_ADDITIONAL_OPT	

The Data Migration options include:

Menu Option	Name Used In Documentation	Customer Install Value
Enable Data Migration	DATA_MIGRATION	
Data Migration Database User	DATA_MIGRATION_DB_USER	
Data Migration Database Password	DATA_MIGRATION_DB_PASS	

The Advanced Configurations for SOA include:

Menu Option	Name Used In Documentation	Customer Install Value
Enable SOA SSL Port	SOA_SSL	
SOA Trust Keystore Type	SOA_TRUST_KS	
SOA Trust Keystore File Type	SOA_TRUST_KS_TYPE	
SOA Trust Keystore File	SOA_TRUST_KS_FILE	

Smart Grid Gateway Installation and Configuration Worksheets

During the installation and configuration of the application you will need to provide a variety of system values. These worksheets will assist you in providing that information. They should be completed before installing the application framework, as described in Installing the Application Server Component of Oracle Utilities Service and Measurement Data Foundation. No Customer Install Value fields should be left blank.

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

This section includes worksheets for the following adapters:

For the Adapter Development Kit

The DG reference implementation SOA configurations include:

Menu Option	Name Used in this Documentation	Customer Install Value
DG SOA Partition Name	SOA_PARTITION_DG	DG
MR Server Endpoint URI	Headend_MR_Server_DG	
CD Server Endpoint URI	Headend_CD_Server_DG	
OD Server Endpoint URI	Headend_OD_Server_DG	
Headend Http Read Timeout	Headend_http_read_timeout_DG	
Headend Http Connection Timeout	Headend_http_conn_timeout_DG	

For the Adapter for Networked Energy Services

The SOA configuration plan for Networked Energy Services (NES) includes:

Menu Option	Name Used in this Documentation	Customer Install Value
NES endpoint URI	HEADEND_NES	
The SOA partition to which the application is installed	SOA_PARTITION_D4	Echelon
The path to the NES EventManager web service on the head end system	HEADEND_EVENTMANAGER_D4	
The path to the NES GatewayManager web service	HEADEND_GATEWAYMANAGER_D4	
The path to the NES DeviceManager web service on the head end system	HEADEND_DEVICEMANAGER_D4	

Menu Option	Name Used in this Documentation	Customer Install Value
The path to the NES SettingManager web service on the head end system	HEADEND_SETTINGMANAGER_D4	
The path to the NES UserManager web service on the head end system	HEADEND_USERMANAGER_D4	
The name of the OWSM policy to use when SOA calls a head end system	D4_SOA_HE_CLIENT_POLICY	
The name of the OWSM policy to use when SOA is called by a head end system	D4_SOA_HE_SERVICE_POLICY	

For the Adapter for Itron OpenWay

The SOA configuration plan for Itron OpenWay includes the following menu options.

> **Note:** Replace localhost and port with respective host and port for the below mentioned Endpoint URLs.

Menu Option	Name Used in this Documentation	Customer Install Value
Itron SOA Partition Name	SOA_PARTITION_D8	Itron
Headend Http Read Timeout	HEADEND_HTTP_READ_TIMEOUT_D8	
Headend Http Connection Timeout	HEADEND_HTTP_CONN_TIMEOUT_D8	
DataSubscriberService Output Path	DATASUBSCRIBER_OUTPUT_PATH_D8	
ExceptionSubscriberService Output Path	EXCEPTIONSUBSCRIBER_OUTPUT_PATH_D8	
Itron Headend DataService Endpoint URI	Headend_DataService_D8	
Itron Headend DiagnosticService Endpoint URI	Headend_DiagnosticService_D8	
Itron Headend UtilService Endpoint URI	Headend_UtilService_D8	
Itron Headend ControlService Endpoint URI	Headend_ControlService_D8	
Itron Headend ProvisioningService Endpoint URI	Headend_ProvisioningService_D8	

Menu Option	Name Used in this Documentation	Customer Install Value
Itron Headend ProvisioningService370 Endpoint URI	Headend_ProvisioningService370_D8	
Itron Headend ControlService370 Endpoint URI	Headend_ControlService370_D8	
The name of the OWSM policy to use when SOA calls a head end system	D8_SOA_HE_CLIENT_POLICY	
The name of the OWSM policy to use when SOA is called by a head end system	D8_SOA_HE_SERVICE_POLICY	

For the Adapter for Landis+Gyr

The SOA configuration plan for Landis+Gyr includes:

Menu Option	Name Used in this Documentation	Customer Install Value
LG SOA Partition Name	SOA_PARTITION_D3	LG
LG SOA TestHarness Partition Name	SOA_PARTITION_TEST_D3	
AMI Event Subscriber Output Path	AMIEVENTSUBSCRIBER_OUTPUT_PATH_D3	
MR_Server endpoint URI	Headend_MR_Server_D3	
CD_Server endpoint URI	Headend_CD_Server_D3	
CIM endpoint URI	Headend_CIM_Server_D3	
Metering Server endpoint URI	Headend_Metering_Server_D3	
Security policy attached to outbound web service calls to a CIM interface	SOA_HE_CIM_CLIENT_POLICY	
Security policy attached to inbound web service calls from a CIM interface	SOA_HE_CIM_SERVICE_POLICY	
The name of the OWSM policy to use when SOA calls a head end system	D3_SOA_HE_CLIENT_POLICY	
The name of the OWSM policy to use when SOA is called by a head end system	D3_SOA_HE_SERVICE_POLICY	

For the Adapter for Sensus RNI

The SOA configuration plan for Sensus RNI includes:

Menu Option	Name Used in this Documentation	Customer Install Value
Sensus SOA Partition Name	SOA_PARTITION_D6	Sensus
MR Server Endpoint URI	HEADEND_MR_D6	
CD Server Endpoint URI	HEADEND_CD_D6	
OD Server Endpoint URI	HEADEND_OD_D6	
Headend Http Read Timeout	Headend_http_read_timeout_D6	
Headend Http Connection Timeout	Headend_http_ conn_timeout_D6	
The name of the OWSM policy to use when SOA calls a head end system	D6_SOA_HE_ CLIENT_POLICY	
The name of the OWSM policy to use when SOA is called by a head end system	D6_SOA_HE_ SERVICE_POLICY	

For the Adapter for Silver Spring Networks

SOA Configuration Plan (SSN)

The SOA configuration plan for SSN includes the following menu options.

> **Note:** Replace localhost and port with your respective host and port for the Endpoint URLs listed below.

Menu Option	Name Used in this Documentation	Customer Install Value
SOA Partition Name	SOA_PARTITION_D7	
SOA Queue JNDI Name	SOA_QUEUE_D7	
Headend DataAggregation Endpoint URI	Headend_DataAggregation_Server_ D7	
The url for the SSN 4.7 DataAggregation service (DataAggregation.asmx)	Headend_DataAggregation_47_Serv er_D7	
The url for the SSN 4.10 DataAggregation service	Headend_DataAggregation_410_Ser ver_D7	
Headend DeviceManager Endpoint URI	Headend_DeviceManager_Server_D 7	

Menu Option	Name Used in this Documentation	Customer Install Value
The url for the SSN 4.7 DeviceManager service (DeviceManager.asmx)	Headend_DeviceManager_47_Server_D7	
The url for the SSN 4.10 DeviceManager service	Headend_DeviceManager_410_Server_D7	
Headend DeviceResults Endpoint URI	Headend_DeviceResults_Server_D7	
The url for the SSN 4.7 DeviceResults service (DeviceResults.asmx)	Headend_DeviceResults_47_Server_D7	
The url for the SSN 4.10 DeviceResults service	Headend_DeviceResults_410_Server_D7	
Headend JobManager Endpoint URI	Headend_JobManager_Server_D7	
The url for the SSN 4.7 JobManager service (JobManager.asmx)	Headend_JobManager_47_Server_D7	
The url for the SSN 4.10 JobManager service	Headend_JobManager_410_Server_D7	
The name of the OWSM policy to use when SOA calls a head end system	D7_SOA_HE_CLIENT_POLICY	
The name of the OWSM policy to use when SOA is called by a head end system	D7_SOA_HE_SERVICE_POLICY	

SSN JMS Source Destination Bridge Configuration

The SSN JMS source destination bridge configuration includes:

Parameter Description	Name Used in this Documentation	Customer Install Value
Source Bridge Destination Name	SRC_BRG_NAME_D7	
Classpath	SRC_BRG_CLASSPATH_D7	
Connection URL	SRC_BRG_CONN_URL_D7	
Initial Context Factory	SRC_BRG_INITIAL_CONTEXT_D7	
Connection Factory JNDI Name	SRC_BRG_CONN_FACTORY_D7	
Destination Queue JNDI Name	SRC_BRG_QUEUE_JNDI_D7	
JMS Provider User Name	SRC_BRD_WLS_USER_D7	
JMS Provider User Password	SRC_BRD_WLS_PASS_D7	

Advance Menu Option for Test Harness Configuration

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
```

The SSN SOA testharness configurations include:

Parameter Description	Name used in this Document	Customer Install Value
TestHarness SOA Host Server	SOA_HOST_TEST_D7	
TestHarness SOA Port Server	SOA_PORT_NUMBER_TEST_D7	
SOA TestHarness Partition Name	SOA_PARTITION_TEST_D7	
SOA TestHarness Queue JNDI Name	SOA_QUEUE_TEST_D7	

Appendix C

Common Maintenance Activities

This appendix lists 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

   ```
   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 stop
   ```

   Windows

   ```
   spl.cmd stop
   ```

To Start the Thread Pool Worker

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

   UNIX

   ```
   ./spl.sh -b start
   ```

   Windows

   ```
   spl.cmd -b start
   ```

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 the following initial setup script:
   `initialSetup.sh`

Appendix D

Oracle Utilities Application Framework Fixes

The following table lists the Oracle Utilities Application Framework 4.3.0 Service Pack 4 (4.3.0.4.0) fixes included in this release.

Fix	Description
23128950	RESTRICTING URIS FOR THE CLOUD IS ACCEPTING ONLY TWO PROTOCOLS (HTTP & HTTPS)
24589020	COPY OF BUG 24583489 - GENAPPVIEWERITEMS FAILS IN WINDOWS IF ONLY ONLINE ROLE IS
25119728	ABILITY TO ADD SOAP HEADER PARAMETERS TO OUTBOUND MESSAGE
25300770	PROGRAM TO LIST CLASSES ALLOWABLE IN SOURCE FOR JAVADOCS
25343308	SUPPORT FOR HTTP REST CALL WITH JSON PAYLOAD&TRANSFORMATION FOR GIS INTEGRATION
25458441	INFO STRING WITH SPACE AND HYPHEN IN MONEY AND DATES WRAPS IN SERVICE ZONES
25459906	COPY OF 24495181 - COPY OF 24487407 - COPY OF 23742898 - COPY OF 22544303 - ISSU
25468195	INFO STRING HAVING DATE IN DESCRIPTION GETS WRAPPED IN BO SEARCH RESULTS
25471512	ISSUE FOUND WHEN CHECKBOX ELEMENT IS WITHIN A LIST
25478719	ADA: OUTSTANDING CCB KEYBOARD ISSUES 2.1.1, 2.4.3 AND 3.2.3
25479526	COPY OF 25210796 - SLA: PERFORMANCE TARGET ZONE NOT DISPLAYING TIME TARGET CORRE
25498483	USING F1-GETDBMSJOBS WITH JOBSTATUS SET TO COMP RETURNS A NULL AND OTHER ISSUES
25506815	COPY OF 25485728 - COPY OF 25164929 - COPY OF 24965749 - SEARCH BY IS RESET AFTER

Fix	Description
25509633	CMA - NPE APPLYING FIELD ACTIVITY MIGRATION OBJECT IN CCB
25513156	00239 - PLUG-IN DRIVEN BATCH DOES NOT SUPPORT ADDING ADDITIONAL SORT KEYS
25592230	COPY OF 25545108 - COPY OF 25419076 - OUTBOUND MESSAGE HAS THE MRID FIELD MISSIN
25610076	SUCCEEDING WARNINGS NO LONGER DISPLAYED AFTER ACCEPTING WARNING
25616513	MISSING INDEXES FOUND IN DB HEALTHCHECK ON INITIAL INSTALL
25616857	COPY OF 25201396 - WAM V2: ENHANCE OUTBOUND MESSAGE JSON SENDER TO SUPPORT DYNAM
25636490	COPY OF 24473095 - TEMPLATE PROPERTIES MISSING FORCE_FORWARD_SLASH
25636518	COPY OF 24749849 - CLD: BATCH ON WLS IS NOT ABLE TO START AFTER SECURITY HARDENI
25642648	TPW NOT WORKING IN WEBLOGIC DOMAIN FW 4.3.0.4.0
25645976	00239 - PLUG-IN DRIVEN BATCH RESULTS TO NPE ERROR WHEN VALIDATING TO DO TYPE
25704043	ONLY SHOW BATCH, ALGORITHM, ETC. SOURCE IN JAVADOCS
25712815	ADD SUPPORT FOR OWSM TO HTTP AND SOAP REALTIME SENDERS
25714240	MAKE REST SECURITY FILTER OPTIONAL FOR OWSM
25720956	COPY OF 25697855 - OUTBOUND WSDL AND IWS FROM WEB CATALOG HAS MISSING RESPONSE M
25754126	PHONE FORMAT ISSUE
25762422	NEW ISSUE BEING INTRODUCED BY FW BUG 25468195
25808038	CALENDAR POPUP THROWS JAVASCRIPT ERRORS IF YOU TRY TO USE ANY OF THE WIDGETS
25831771	HTTP HEADERS WRAPPED IN