

Oracle Utilities Advanced Spatial and Operational Analytics

Installation Guide

Release 2.4

E18764-05

December 2011

Copyright © 2000, 2011, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007).

Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third party content, products and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third party content, products or services.

Contents

Contents

Preface	i-v
Audience	i-v
Related Documents	i-v
Conventions	i-vi
Chapter 1	
Data Warehouse Design	1-1
Database Object Standard.....	1-2
Naming Standards.....	1-2
Column Data Type and Constraints.....	1-4
Date/Time/Timestamp	1-4
Number	1-4
Variable Length Character Columns.....	1-4
Null Constraints	1-4
Default Value Setting.....	1-4
Foreign Key Constraints	1-4
Standard Columns	1-5
DATA_SOURCE_IND	1-5
FACT_CNT.....	1-5
JOB_NBR.....	1-5
DATA_LOAD_DTTM.....	1-5
EFF_START_DTTM and EFF_END_DTTM.....	1-5
UPDATE_DTTM	1-5
Chapter 2	
Data Warehouse Implementation Guidelines	2-1
Init.ora Settings	2-2
Oracle Partitioning	2-2
Chapter 3	
Supported Platforms and Hardware Requirements	3-1
Software and Hardware Considerations	3-2
Requirements by Tier.....	3-3
Tier 1, Desktop: Software and Hardware Requirements.....	3-3
Tier 2, Web/Business Application Server, Batch Server: Software and Hardware Requirements....	3-3
Tier 3, Database Server: Software and Hardware Requirements.....	3-4
Supported Platforms.....	3-5
Operating Systems and Application Servers	3-5
Oracle Database Servers	3-5
Support for Software Patches and Upgrades	3-6
Chapter 4	
Planning the Installation.....	4-1

Installation and Configuration Overview	4-2
Before You Install	4-3
Installation Checklist.....	4-3
.....	4-4
Chapter 5	
Installing the Database	5-1
Installation Overview	5-2
Oracle Database Installation.....	5-3
Database Creation.....	5-3
Security Configuration.....	5-5
Initial Installation	5-5
Upgrade Installation	5-7
Demo Installation	5-8
Configuring and Deploying Oracle Warehouse Builder.....	5-10
For an Initial Installation	5-10
For an Upgrade Installation.....	5-13
Chapter 6	
Installing Prerequisite Software.....	6-1
Supported Application Servers	6-2
Web/Application Server Tier.....	6-2
Chapter 7	
Installing Oracle Utilities Advanced Spatial and Operational Analytics	7-1
Installation Overview	7-2
Preinstallation Tasks	7-2
Hardware and Software Version Prerequisites	7-2
Database Installation	7-2
Installation Prerequisites	7-2
Copying and Decompressing Install Media	7-2
Setting Permissions for the cistab File in UNIX.....	7-3
Installing the Application: Initial Installation.....	7-4
Installation Menu Functionality Overview	7-4
Installation Menu Functionality Details	7-4
Installing the Application.....	7-5
Installation and Configuration Worksheets	7-6
Installing the Application: Upgrade Installation	7-16
Upgrading the Installation	7-16
Upgrading RPD and Catalog Files	7-16
Postinstallation Tasks.....	7-21
OWB Deployment.....	7-21
Deploying the RPD File.....	7-24
Deploying the Catalog.....	7-25
Deploying MapViewer	7-26
Deploying Write Back	7-28
Deploying Analytics.....	7-28
Enabling Analytics Help	7-29
Installing Optional Software	7-29
OWB Code Generator	7-29
Contacting Oracle Support	7-29
Chapter 8	
Configuring Your Applications.....	8-1
Spatial Configuration	8-2
Installing US State Spatial Data	8-2
Installing US City Spatial Data.....	8-3

Installing US Zip Code Spatial Data	8-5
Installing US County Spatial Data	8-6
Configuring NMS Device Spatial Data	8-8
Loading Spatial Metadata	8-9
Importing Map Data from Shapefile	8-10
Improving Performance by Prefetching Map Tiles	8-11
OBIEE Configuration	8-13
Setting Up and Configuring User Security	8-13
Managing Content in the Presentation Catalog	8-13
Supported Customizations	8-14
Customizations of the Web Catalog	8-14
Customizations of the Repository	8-14
Customizations of the Oracle Warehouse Builder Mappings	8-14
Customizations of the File Processor Mappings	8-15
 Appendix A	
License and Copyright Notices	A-1
Third Party Products	A-1
Notice Concerning Usage of Mapping Data	A-1

Preface

This guide describes how to install and configure Oracle Utilities Advanced Spatial and Operational Analytics v2.4. Installing Oracle Utilities Advanced Spatial and Operational Analytics v2.4 is required for the Oracle Utilities business intelligence products that support the following:

- Oracle Utilities Customer Care and Billing release 2.2.0 or 2.3.1
- Oracle Utilities Meter Data Management release 2.0.1, Service Pack 6
- Oracle Utilities Mobile Workforce Management release 2.1.0
- Oracle Utilities Network Management System release 1.9.0.3, 1.10.0.3.1 or 1.11.0.1
- Oracle Utilities Work and Asset Management release 1.8.1 or 1.9.0.4

Note: The single fix patches 13532002, 13518963, 13509909, 13470718, 13462900, 13460426, 13455478, 13111451, and 13513139 (for Oracle Utilities Mobile Workforce Management) are prerequisites for Oracle Mobile Workforce Analytics.

The single fix patches 13494493 and 13554621 are prerequisites for Oracle Utilities Meter Data Management.

The single fix patches 12861412 and 12797646 (for Oracle Utilities Customer Care and Billing 2.2.0) or single fix patches 12861408, 12797637, 13464490, 12853107, and 12860480 (for Oracle Utilities Customer Care and Billing 2.3.1) are prerequisites for Oracle Utilities Customer Care and Billing Business Intelligence.

The single fix patch 13503077 (for Oracle Utilities Network Management System 1.11.1) is a prerequisite for Oracle Utilities Network Management Business Intelligence.

Audience

This guide is intended for anyone interested in understanding or performing the process of installing or configuring Oracle Utilities Advanced Spatial and Operational Analytics v2.4.

Related Documents

For more information, see the following documents in the Oracle Utilities Advanced Spatial and Operational Analytics Documentation Library:

- *Oracle Utilities Advanced Spatial and Operational Analytics Release Notes*
- *Oracle Utilities Advanced Spatial and Operational Analytics Quick Install Guide*

-
- *Oracle Utilities Advanced Spatial and Operational Analytics Administration Guide*
 - *Oracle Utilities Advanced Spatial and Operational Analytics User's Guide*
 - *Oracle Utilities Advanced Spatial and Operational Analytics Licensing and Package Guide*
 - *Oracle Utilities Customer Care and Billing Business Intelligence Metric Reference Guide*
 - *Oracle Utilities Meter Data Management Business Intelligence Metric Reference Guide*
 - *Oracle Utilities Network Management Business Intelligence Metric Reference Guide*
 - *Oracle Utilities Work and Asset Management Business Intelligence Metric Reference Guide*
 - *Oracle Utilities Mobile Workforce Management Business Intelligence Metric Reference Guide*
 - *Oracle Utilities Customer Care and Billing Business Intelligence Data Mapping Guide*
 - *Oracle Utilities Meter Data Management Business Intelligence Data Mapping Guide*
 - *Oracle Utilities Network Management Business Intelligence Data Mapping Guide*
 - *Oracle Utilities Work and Asset Management Business Intelligence Data Mapping Guide*
 - *Oracle Utilities Mobile Workforce Management Business Intelligence Data Mapping Guide*
 - *Oracle Utilities Application Framework Business Process Guide*
 - *Oracle Utilities Application Framework Administration Guide*
 - *Oracle Utilities Business Intelligence Server Administration Guide*

Conventions

The following text conventions are used in this document:

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

Chapter 1

Data Warehouse Design

This section provides a standard for the database objects, such as tables, columns, and indexes, in the data warehouse. This standard helps smooth integration and upgrade processes by ensuring clean database design, promoting communications, and reducing errors. This section includes:

- **Database Object Standard**
- **Column Data Type and Constraints**
- **Standard Columns**

Database Object Standard

This section discusses the rules applied to naming database objects and the attributes that are associated with these objects.

Naming Standards

The following naming standards must be applied to database objects.

Table

Table names are prefixed to identify whether a table is a Fact or a Dimension table. Dimension tables will be prefixed with **CD**. Fact tables will be prefixed with **CF**.

Tables that have a **UDD** suffix, are User Defined Dimension tables specific to the fact table that are part of their name.

Tables that have **RECENT** as part of their name are designed to be loaded frequently, as often as every 15 minutes.

Some examples are:

- CD_ACCT
- CF_OUTG
- CD_FO_UDD2
- CF_RECENT_TD_ENTRY

Columns

The length of a column name must be less than or equal to 30 characters. The following conventions apply when you define special types of columns in the database.

- Use the suffix **CD** to define user-defined code fields. This field should be paired with a field with a suffix of **DESCR**. The CD field should contain a short code, and the DESCR field should contain a longer text representation of the code. Sometimes the same data will be in both fields.
- Use the prefix **UDF** to define a User Defined Field. There will always be both a CD and a DESCR UDF field.
- Use the suffix **IND** to define an Indicator column. Indicator columns must be NUMB(1), and will contain either a 0 or a 1 value. A 0 value indicates FALSE, a 1 value indicates TRUE. For example, in the CF_RST_JOB table, the RST_IND column (Restored Indicator) will contain a 0 for all Jobs that have not been restored, and a 1 value for all Jobs that have been restored.
- Use the prefix **UDDGEN** to define User Defined Degenerate Dimension columns.
- Use the suffix **DTTM** to define Date Time columns.
- User the prefix **UDM** to define User Defined Measurements on fact tables. These fields are defined as NUMBER(18,7) and can be populated by the extract code with project specific measurement data.

Some examples are:

- UDF1_CD and UDF1_DESCR
- RST_IND
- UDDGEN3
- EFF_START_DTTM

Indexes

Index names are composed of the following parts:

[OF][*application specific prefix*][C/M/T]NNN[P/S]*n*

- **OF**- Owner Flag. Prior to Version 4.1.0 of the framework the leading character of the base Owner Flag was used. From 4.1.0 on the first two characters of product's owner flag value should be used. For client specific implementation of index, use CM for Owner Flag.
- Application specific prefix could be C, F, T or another letter.
- **C/M/T** - The second character can be either C or M or T. C is used for control tables (Admin tables). M is for the master tables. T is reserved for the transaction tables.
- **NNN** - A three-digit number that uniquely identifies the table on which the index is defined.
- **P/S** - P indicates that this index is the primary key index. S is used for indexes other than primary keys.*n* is the index number, unique across all indexes on a given table (0 for primary and 1, 2, etc., for the secondary indexes).

Some examples are:

- F1C066P0
- F1C066S1
- CM206S2

Warning! Do not use index names in the application as the names can change due to unforeseeable reasons.

Sequence

All of the primary keys for Fact and Dimension tables are populated using Sequences. Each table has its own sequence. Since the key fields are generated via a sequence during a load, the keys are not randomized, and therefore are not useful for partitioning.

Trigger

No triggers are created for any of the data warehouse tables. Also, due to heavy data loads it is not recommended to add triggers to these tables.

Column Data Type and Constraints

This section discusses the rules applied to column data type and constraints, and the attributes that are associated with these objects.

Date/Time/Timestamp

Date, Time and Timestamp columns are defined physically as DATE in Oracle. Non-null constraints are implemented only for the required columns.

Number

Numeric columns are implemented as NUMBER type in Oracle. The precision of the number should always be defined. The scale of the number might be defined. Non-null constraints are implemented for all number columns.

Variable Length Character Columns

There are very few CHAR defined columns in the BI data warehouse. Most character columns use VARCHAR2 type.

Null Constraints

Not-null constraints are implemented for all required columns.

Default Value Setting

There are no default value settings for any column in the data warehouse. Default values are populated during a load by the OWB Mapping process, not by a default value setting in the database.

Foreign Key Constraints

Referential integrity is enforced by the load and in the database. In the database FK constraints are defined for all Dimension key columns on Fact tables. All Dimension Key columns are required. If the dimension data is optional on the load file, then a 0 value will be used for the dimension key, which will point to a default NA record in the dimension table.

Standard Columns

This section discusses the rules applied to standard columns and the attributes that are associated with these objects. These columns are used on many Fact and Dimension tables.

DATA_SOURCE_IND

Data Source indicator field used to identify the source system that the data came from. This allows different source systems to have the same natural keys, but still identify the records uniquely.

FACT_CNT

A Measurement column on all fact tables, it stores the value 1 for every record. Counting of records is done by summing up this field. This keeps BI from having to do COUNT(*) operations for any query.

JOB_NBR

Job Number from the B1_ETL_JOB_CTRL table that was used to load or update the record.

DATA_LOAD_DTTM

Date/Time when the record was loaded or updated in the table.

EFF_START_DTTM and EFF_END_DTTM

For Type 2 dimensions, a record is active during a specified period of time. If changes are made to data in the source application, then the existing active record is marked inactive, and a new record inserted with the new values.

The EFF_START_DTTM field is used to define the Starting Date/Time that a record was active. This should correspond to the time that the records was updated in the source application, and should equal the EFF_END_DTTM value of the previous active record.

The EFF_END_DTTM field is used to define the Ending Date/Time that a record was active. For current Active records this will be set to January 1, 4000. Inactive records will have this value set to the date that the data was changed in the source application.

Type 2 dimensions can be identified by the fact that they have both of these columns.

UPDATE_DTTM

For Type 1 dimensions, data in BI is updated when it is changed in the source application. Only one record will ever exist in BI, and will always match the last loaded data from the source application. This field contains the date and time that the data was changed in the source application.

Type 1 dimensions can be identified by the fact that they have this column.

Chapter 2

Data Warehouse Implementation Guidelines

This section provides guidelines for implementing the Oracle BI Data Warehouse. This section includes:

- **Init.ora Settings**
- **Oracle Partitioning**

Init.ora Settings

Internal performance testing for a large BI database installation has identified the following parameter settings that resulted in a fast load and materialized view refresh for a fact table with over 100,000,000 records.

Note that these were the settings in an Oracle 10.2 database running on a IBM AIX 5.2 machine with 8 CPUs and 15 GBs of memory, so some of these values may not be appropriate based on different hardware or software settings.

Parameter	Value
db_file_multiblock_read_count	32
db_cache_size	0M
shared_pool_size	0M
large_pool_size	0M
Java_pool_size	0M
parallel_max_servers	8
parallel_execution_message_size	65535
log_buffer	64554432
Pga_aggregate_target	2000M
query_rewrite_enabled	FORCE
query_rewrite_integrity	TRUSTED
session_cached_cursors	60
optimizer_index_caching	80
optimizer_index_cost_adj	30
Sga_max_size	4000M
Sga_target	2000M
shared_pool_reserved_size	64M
workarea_size_policy	AUTO
db_writer_processes	8
timed_statistics	False
cursor_space_for_time	True
Disk_asynch_io	True

Oracle Partitioning

Because the primary keys for all tables are sequential, it is possible to partition any table based on the primary key field.

However, you should partition Fact tables based on one of the Date Keys present in the table. Some of the date keys are optional, so it is important to pick a date key field that will always have a non-zero value.

Also, because the RECENT fact tables should be purged daily, these tables do not need to be partitioned.

Finally, the partitioning should be done only after materialized views do not prove sufficient to achieve the desired performance. See Parallelism and Partitioning in *Oracle Utilities Advanced Spatial and Operational Analytics Administrator's Guide* for details on partitioning.

Chapter 3

Supported Platforms and Hardware Requirements

This section gives an overview of the tiers on which Oracle Utilities Advanced Spatial and Operational Analytics is implemented, and shows each of the operating system/server combinations that it is certified for. It includes:

- **Software and Hardware Considerations**
- **Requirements by Tier**
- **Supported Platforms**
- **Support for Software Patches and Upgrades**

Software and Hardware Considerations

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

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

- On which hardware platform and operating system will Oracle Utilities Advanced Spatial and Operational Analytics be deployed?
- On which web application server product will Oracle Utilities Advanced Spatial and Operational Analytics deploy?
- On which database product will Oracle Utilities Advanced Spatial and Operational Analytics deploy?
- Do you plan to deploy multiple Oracle Utilities Advanced Spatial and Operational Analytics instances on the same physical server?
- How do you plan to deploy Oracle Utilities Advanced Spatial and Operational Analytics?
 - OWB and OBIEE on the same physical server
 - OWB and OBIEE on separate servers

The final hardware and software decisions must comply with the specific requirements of Oracle Utilities Advanced Spatial and Operational Analytics, as described in the rest of this chapter.

Requirements by Tier

The application is deployed on multiple Tiers:

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

Tier 1, Desktop: Software and Hardware Requirements

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

* The Recommended configuration improves client performance.

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

Web Browser Requirements

The following Operating System / Web Browser software is supported:

- Windows XP SP3 or higher with Internet Explorer 7.0 or higher, or 8.0 or higher, or Firefox 3.6 or higher
- Windows 7 with Internet Explorer 8.0 or higher, or Firefox 3.6 or higher

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

Please consult the **Supported Platforms** on page 3-5 to determine which Web application servers can be used with the operating system that will be hosting this tier.

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

Memory Requirements

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

Disk Space Requirements

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

Location	Size	Usage
\$SPLEBASE	5 GB minimum	This location is where the application and Framework get installed. Startup, shutdown and other online log files are stored here. The size and space that is used should be monitored because various debugging options can significantly affect the size of log files.
Installation temporary area	4 GB	The application gets installed from this location. You need enough space to uncompress the files and install the application.
Oracle data area	4 GB minimum	This location is where the Oracle database data files are stored. The size of this space should be based on the requirements of the production environment. For an initial or demo database install 4 GB should be sufficient.

Tier 3, Database Server: Software and Hardware Requirements

See the section **Supported Platforms** on page 3-5 for supported database servers.

Supported Platforms

The installation has been tested and certified to operate on many operating system, application server, and database server combinations.

Operating Systems and Application Servers

The following table details the operating system and application server combinations on which Oracle Utilities Advanced Spatial and Operational Analytics version 2.4.0 has been tested and certified.

Browser	Operating System (Client)	Operating System (Server)	Chipset	Application Server	Database
IE 7.x	Windows XP SP3	AIX 6.1 (64-bit)	Power 64-bit	WebLogic 10.3.5	Oracle 11.2.0.2
		Oracle Linux 5.6 (64-bit)	x86_64	WebLogic 10.3.5	Oracle 11.2.0.2
IE 8.x	Windows 7	Red Hat Enterprise Linux 5.6 (64-bit)			
Firefox 3.x (OBIEE only)		Sun Solaris 10 (64-bit)	SPARC	WebLogic 10.3.5	Oracle 11.2.0.2
		Windows 2008 Server SP2 (32-bit)	x86_64	WebLogic 10.3.5	Oracle 11.2.0.2

Oracle Database Servers

Oracle Utilities Advanced Spatial and Operational Analytics version 2.4.0 is supported with Oracle Database Server 11.2.0.2 on all of the operating systems listed above.

The Oracle Client 11.2.0.2 is required for the database server.

The following Oracle Database Server Edition is supported:

- Oracle Database Server Enterprise Edition

Support for Software Patches and Upgrades

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

If it is necessary to apply an upgrade, please do that in a test environment prior to updating the Oracle Utilities Advanced Spatial and Operational Analytics production environment.

Always contact Oracle Utilities Advanced Spatial and Operational Analytics support prior to applying vendor updates that do not guarantee backward compatibility.

Chapter 4

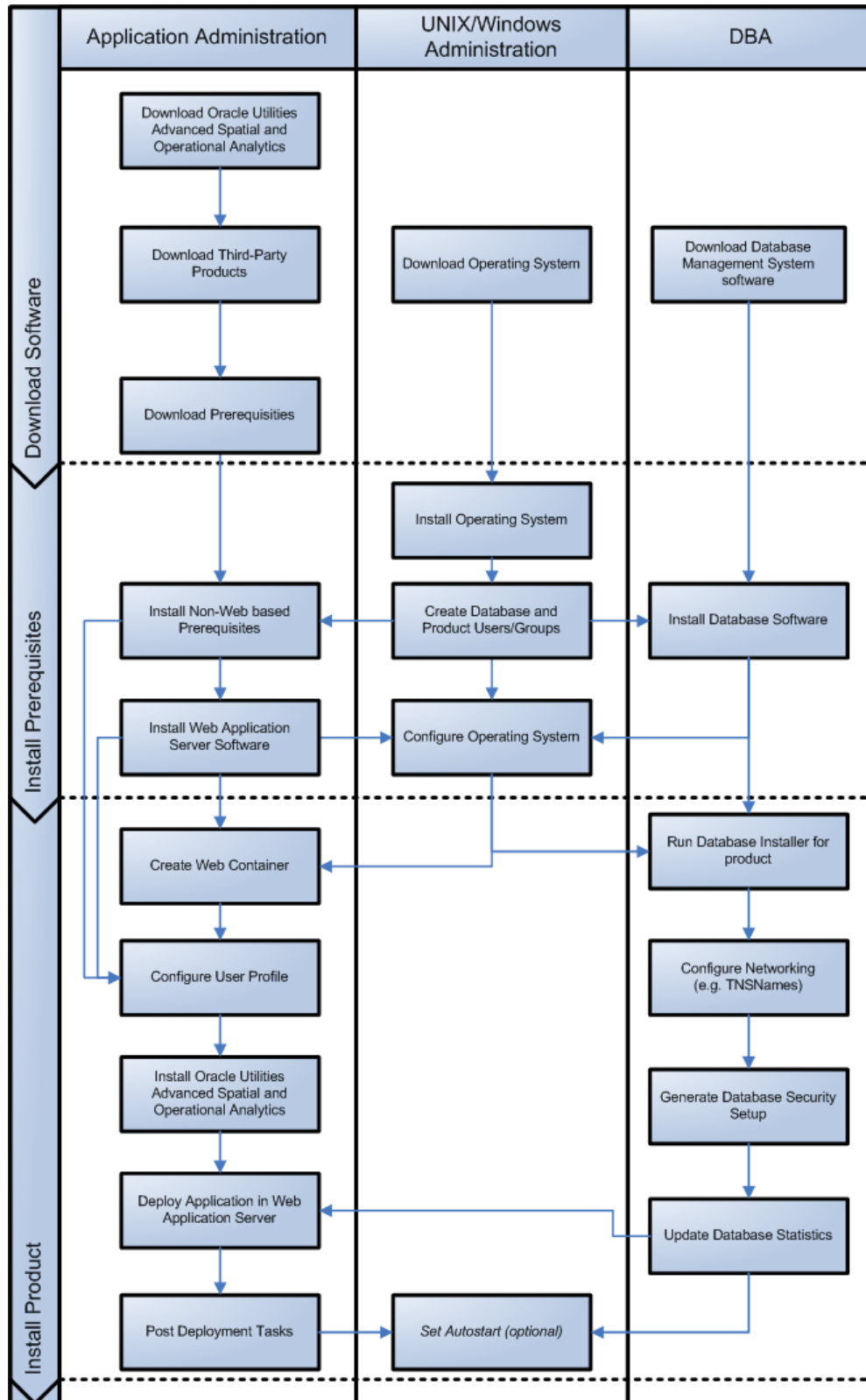
Planning the Installation

This chapter provides information for planning an Oracle Utilities Business Intelligence installation, including:

- **Installation and Configuration Overview**
- **Before You Install**
- **Installation Checklist**

Installation and Configuration Overview

The following diagram provides an overview of the steps that need to be taken to install and configure Oracle Utilities Advanced Spatial and Operational Analytics:



Before You Install

Refer to article 1290770.1 on My Oracle Support for up-to-date additional information on Oracle Utilities Advanced Spatial and Operational Analytics installation.

Installation Checklist

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

1. Create Group/User ID.
2. Install prerequisite software:
 - Oracle Client 11.2.0.2 (for connecting to Oracle database)
 - Java 6
3. Install Application Server:
 - Oracle WebLogic 10.3.5
4. Install Oracle Business Intelligence Enterprise Edition 11.1.1.5.0
5. Verify that all software installed.
6. Set up environment variables.
7. Install the database.
8. Install Oracle Utilities Advanced Spatial and Operational Analytics.
9. Perform post-installation tasks and configure the application.
10. Deploy the Oracle Utilities Advanced Spatial and Operational Analytics application.

The following steps are optional:

- Install Oracle Utilities Advanced Spatial and Operational Analytics.
- Deploy the Oracle Utilities Business Intelligence application.

Refer to *Oracle Utilities Advanced Spatial and Operational Analytics Installation Guide* to understand the installation process for the product.

Chapter 5

Installing the Database

This section describes the steps required to install or upgrade the Oracle Utilities Advanced Spatial and Operational Analytics database, including:

- **Installation Overview**
- **Oracle Database Installation**
- **Configuring and Deploying Oracle Warehouse Builder**

Installation Overview

Note: See **Supported Platforms** on page 3-5 for the hardware and software versions that are required for installing the database on Unix or Windows.

This installation is for:

- An initial install of Oracle Utilities Advanced Spatial and Operational Analytics v2.4
- The upgrade of Oracle Utilities Advanced Spatial and Operational Analytics v2.3.2.1 to v2.4

The following types of installation are available for Oracle Utilities Advanced Spatial and Operational Analytics:

- **Initial Installation:** a database installation
- **Upgrade Installation:** a database upgrade
- **Demo Installation:** a database populated with demo data

Note: The database installation requires a supported version of the Java Development Kit to be installed on the Windows 32-bit desktop where the install package is staged and run from. Refer to the Supported Platform section of the *Oracle Utilities Advanced Spatial and Operational Analytics Installation Guide* for the required version of Java.

For an Initial Install or Demo Install you will create an empty database on the Unix or Windows server and then populate the database with data. For a database Upgrade Install you will upgrade your current Oracle Utilities Advanced Spatial and Operational Analytics database.

Review the Storage.par file prior to Initial Install. Information in this file is used by CDXDBI while installing the Oracle Utilities Advanced Spatial and Operational Analytics database objects.

For optimum storage allocation, database administrators should create multiple tablespaces with extents sized to store different types of tables/indexes. They can then edit this file before each upgrade and install process, to spread tables and indexes across these tablespaces. Tables and indexes can be created in parallel by editing degree of parallelism. The default value is 1.

To provide additional information, table names are included for each index as a comment.

Tablespace and parallel information is used only for new objects. Therefore, for initial installs, information for each object should be reviewed. Be careful while editing this file. Make sure that tablespace names being used exist in the database. Do not change the basic format of this file.

Note: Prior to the installation of the database schema for the product, please ensure that the database management system software is installed according to your site standards and the installation guide provided by the database vendor.

Oracle Database Installation

This section describes how to install the Oracle database for Oracle Utilities Advanced Spatial and Operational Analytics.

Note: The installation tools outlined in this guide run on Windows and UNIX/Linux only. If the database server is installed on a platform not supported by the utilities then the site should use the Windows utilities to execute the installation.

This section contains the following topics:

- **Database Creation**
- **Security Configuration**
- **Initial Installation**
- **Upgrade Installation**
- **Demo Installation**

Database Creation

This step is not required if you are performing a database upgrade from a previous version of the application. The database creation tool, `cdxdba.plx` for Unix or `CDXDBA.exe` for Windows, can be used for creating the demo or initial database. However, for an initial install database creation we recommend that you use the Database Configuration Assistant (DBCA) to create database with below specifications:

1. Create database with AL32UTF8 character set, set open cursor limit to 3000 and processes to 1000.
2. Please set `query_rewrite_enabled` parameter to FORCE and `query_rewrite_integrity` parameter to TRUSTED in database.
3. The database needs to be configured with Oracle Enterprise Manager (OEM) Database Console for workflow processes. This can be done using the Database Configuration Assistant (DBCA) or the Enterprise Manager Configuration Assistant (EMCA).
4. Review the `Readme.txt` and apply OWB patch 12874883 if already not applied to database software.
5. Log in to the VNC Viewer and execute `$ORACLE_HOME/owb/wf/install/wfinstall.csh` to configure Workflow with OWFMGR as user and OWFMGR as password in the database.

Note: The Unix and Windows installs will create an empty database and at least one tablespace for storing the application objects before running the install. The default name of the application tablespace is `CISTS_01`. If you do not use the default name or want to spread application objects across multiple tablespaces, you must edit the `Storage.par` file, supplied with the install package, before starting the installation process.

Unix

The files are located in `BI240/DatabaseCreation/Unix`.

1. FTP the contents of the Database Creation folder to a temporary directory on the UNIX server.
2. To create the database, set the `ORACLE_HOME` and `ORACLE_BASE` variables.
3. Execute the utility `cdxdba.plx` by entering following command:

```
perl cdxdba.plx
```
4. The script will prompt for parameter values:

- Enter the instance name (DEMO): DEMO
 - Enter ORACLE_BASE: the directory where the setup files for the database will be created (/orasw/app/oracle):
 - Enter ORACLE_HOME: the folder where the current version of Oracle software is installed (/orasw/app/oracle/product/):
 - Enter ORACLE_DATA: the directory where the data files for the database will be created (/db05/oradata):
 - Enter the character set for the database (AL32UTF8):
5. Enter the values based on the settings of your database server. You can also accept the default values displayed if they match your database server settings. You will be prompted to confirm the settings and select Y or N to create the database.

```
ORACLE_SID: DEMO
ORACLE_HOME: /orasw/app/oracle/product/
ORACLE_BASE: /orasw/app/oracle
ORACLE_DATA: /db05/oradata
Character Set: AL32UTF8
Do you want to continue (Y/N)?
```

6. Once the database has been created, you will be prompted with the questions:

```
Do you want to import a demo database dump into this database (Y/N)?
```

- Select N to exit the database utility.
- Select Y to import the Demo Install data.

For the Demo Install use the dump file exp_demo.dmp.

```
Do you want to import a demo database dump into this database (Y/N)? Y
```

- Enter the name of the dump file (exp_demo.dmp):
- Enter the name of the dump file directory (data_pump_dir):
- Enter the name of the log file (exp_demo.log):

Notes:

The data_pump_dir must exist in the database created above before continuing with the import. You should also copy the exp_demo.dmp file to the data_pump_dir. Uncompress the exp_demo.dmp.gz file first to extract the exp_demo.dmp file. This file is in BI240/Demo directory.

Update the oratab, tnsnames.ora and listener.ora files for the new database and check the connectivity to this database from another server and from your desktop.

Please set query_rewrite_enabled parameter to FORCE and query_rewrite_integrity parameter to TRUSTED in database.

Update the oratab, tnsnames.ora and listener.ora files for the new database and check the connectivity to this database from another server and from your desktop.

Windows

The files are located in BI240/DatabaseCreation/Windows. You should be logged in as a user who is a member of local ORA_DBA group on that server. The ORA_DBA group should have “administrator” privileges assigned to it.

1. To create a database, run the utility CDXDBA.exe located in the Windows folder.

The utility will display a list with the following options:

E - Export a schema from the database

R - Refresh a schema with a database dump.

C - Create/Recreate a local database.

H - See help for the command line options.

Q - Quit.

2. Select option C to create an empty database on your machine.
3. Follow the prompts to complete the install.
4. Once the database has been created you can exit the utility or select the R - Refresh a schema with a database dump file to load the Demo Install data.

The DBA user is the system password manager.

Option R causes the utility to drop all the objects from the schema and import the schema from a database dump file.

For the Demo Install use the dump file exp_demo.dmp.

Notes:

The data_pump_dir must exist in the database created above before continuing with the import. You should also copy the exp_demo.dmp file to the data_pump_dir. Uncompress the exp_demo.dmp.gz file to extract the exp_demo.dmp file. This file is in the BI240/Demo directory.

Update the oratab, tnsnames.ora and listener.ora files for the new database and check the connectivity to this database from another server and from your desktop.

Please set query_rewrite_enabled parameter to FORCE and query_rewrite_integrity parameter to TRUSTED in database.

Security Configuration

The configuration utility and scripts are located in the Security folder.

Grants for the DWADM Schema

1. Navigate to the BI240/DWADM/Security folder.
2. Edit the file DWADM-OraGenSec.bat, which is in the same location, and replace the parameter database-name with the name of your database. This file is provided for your convenience and executes the Oragensec.exe utility based on the parameters passed into it.

Note: Your database should already be listed in the local file tnsnames.ora.

The script will execute as the following:

```
oragensec -d DWADM,DWADM,database_name -r DW_READ,DW_USER -a A -u
SPLUSER,SPLREAD
```

3. Execute the edited DWADM-OraGenSec.bat file.

The utility configures security for the DWADM schema objects.

Initial Installation

This section describes the initial installation of the database.

The process prompts you for the names of three database users:

- A user that will own the application schema. For example, DWADM.

- A user that has read-write (select/update/insert/delete) privileges to the objects in the application schema. The application will access the database as this user. For example, DWUSER.
- A user with read-only privileges to the objects in the application schema. For example, DWREAD.
- A database role that has read-write (select/update/insert/delete) privileges to the objects in the application schema. The application will access the database as this user. For example, DW_USER.
- A database role with read-only privileges to the objects in the application schema. For example, DW_READ.
- Location for jar files. (The Jar files are bundled with the database package.)
- Java Home. For example, C:\Java\jdk1.6.0_18

Create Database

Create the database as described in **Database Creation** on page 5-3.

If dbca is used to create the database, please make sure that DWADM, DWUSER, and DWREAD users exist in the database, along with the CISTS_01 tablespace that is assigned as default tablespace to DWADM, DWUSER, and DWREAD users.

The DW_USER and DW_READ roles must also exist in the database and the DWUSER user should be assigned both roles. The DWREAD user should be assigned only the DW_READ role.

Templates to do this are located under the relevant database version subdirectory of the “Database Creation” directory as users.sql.

Review Storage.par

The storage.par file that comes with the product allocates all base tables and indexes to the default tablespace CISTS_01. If you decide to allocate some tables or indexes outside of the default tablespace, then this has to be reflected in the storage.par file by changing the tablespace name from the default value to a custom value, according to the format shown below:

Format: Object Type:Object Name:Tablespace name:Parallel:Comments.

Where Parallel defines the number of threads that the Oracle DB Server will use to access a table or create an index. Default value is 1.

DWADM Schema Upgrade

Perform the following steps to install the BI database:

Note: Make sure to run CDXDBL.exe from a Window 32-bit desktop that has the Oracle 11.2.0.2 client and Java Development Kit Version 6.0 Update 20 or later.

1. Run CDXDBL.exe from BI240/DWADM/Install-Upgrade. The utility prompts you to enter values for the following parameters:
 - The name of the target database.:<DB NAME>
 - The password for the SYSTEM user account in the database (in silent mode).
 - The name of the owner of the Database Schema.:<DWADM>
 - The location of Java Home.: <..\jdk1.6.0_20>
 - The location of TUGBU Jar files: <../BI240/DWADM/Jarfiles>
 - The password for the user (in silent mode).
 - The Oracle user with read-write privileges to the Database Schema.:<DWUSER>

- The Oracle user with read-only privileges to the Database Schema.:<DWREAD>
 - The Oracle database role with read-write privileges to the Database Schema.:<DW_USER>
 - The Oracle database role with read-only privileges to the Database Schema.:<DW_READ>
2. If you chose to continue, CDXDBI first checks for the existence of each of the users specified and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.
 3. After setting up roles and users, the utility continues upgrading schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

See **Spatial Configuration** on page 8-2 to install the spatial data.

Database Statistics Generation

During an install process, new database objects may be added to the target database. Before starting to use the database, generate the statistics for these new objects.

Upgrade Installation

This section describes the upgrade installation of the database. Please upgrade the database to AL32UTF8 character set.

DWADM Schema Upgrade

This sections describes how to upgrade an existing v2.3.2.1 target schema to v2.4.0. The upgrade process prompts you for the names of three database users:

- A user that will own the application schema. For example, DWADM.
- A user that has read-write (select/update/insert/delete) privileges to the objects in the application schema. The application will access the database as this user. For example, DWUSER.
- A user with read-only privileges to the objects in the application schema. For example, DWREAD.
- A database role that has read-write (select/update/insert/delete) privileges to the objects in the application schema. The application will access the database as this user. For example, DW_USER.
- A database role with read-only privileges to the objects in the application schema. For example, DW_READ.
- Location for jar files. (The Jar files are bundled with the database package.)
- Java Home. For example, C:\Java\jdk1.6.0_18

Perform the following steps to Upgrade the BI database:

Note: Make sure to run CDXDBI.exe from a Window 32-bit desktop that has the Oracle 11.2.0.2 client and Java Development Kit Version 6.0 Update 20 or later.

1. Run CDXDBI.exe from BI240/DWADM/Install-Upgrade. The utility prompts you to enter values for the following parameters:
 - The name of the target database.:<DB NAME>
 - The password for the SYSTEM user account in the database (in silent mode).
 - The name of the owner of the Database Schema.:<DWADM>

- The location of Java Home.: <..\jdk1.6.0_20>
 - The location of TUGBU Jar files: <../BI240/DWADM/Jarfiles>
 - The password for the user (in silent mode).
 - The Oracle user with read-write privileges to the Database Schema.:<DWUSER>
 - The Oracle user with read-only privileges to the Database Schema.:<DWREAD>
 - The Oracle database role with read-write privileges to the Database Schema.:<DW_USER>
 - The Oracle database role with read-only privileges to the Database Schema.:<DW_READ>
2. If you chose to continue, CDXDBI first checks for the existence of each of the users specified and prompts for their password, default tablespace, and temporary tablespace, if they do not exist.
 3. After setting up roles and users, the utility continues upgrading schema and system data definitions. If an error occurs while executing an SQL or another utility, it logs and displays the error message and allows you to re-execute the current step.

Note: See **Loading Spatial Metadata** on page 8-9 to install the spatial data

4. Go to BI240/DWADM/Post-Upgrade folder and execute FieldMetadata_FeatureConfigMigrationScript.sql:

```
- sqlplus dwadm/dwadm@database-name @  
FieldMetadata_FeatureConfigMigrationScript.sql
```
5. Enter SPLADM at the following prompt:
Enter Application Schema Owner Name: (e.g SPLADM)
6. Conenct to DWADM schema and execute the following sql:

```
update b1_configuration set override_value = ''  
where feature_name = 'B1_MAPATTPRO' and option_code = 'B1DD';  
Commit;
```

Configure the security as described in **Security Configuration** on page 5-5.

Database Statistics Generation

During an install process, new database objects may be added to the target database. Before starting to use the database, generate the statistics for these new objects.

Demo Installation

Before the installation can be started:

- A database must be created. Site standard techniques or tools may be used to create the database. The templates for creating the database are located under the relevant database version subdirectory of the BI240/DatabaseCreation directory:
 - createdb.sql - Create Database
 - createdbcatalog.sql - Build database catalog tables.
 - createdbfiles.sql - Create data files for tablespaces
 - init.ora - Sample initialization parameters for the database
 - createcdxusers.sql - Create Users
 - restartdb.sql - restart database

- The users and roles for the product must exist. Templates to do this are located under the relevant database version subdirectory of the “Database Creation” directory as createdcdxusers.sql.

Note:

For site specific changes, please make a copy of the above files and alter accordingly.

The CDXDBA utility provided in the “Database Creation” folder may be used to automate the process.

Install

See **Database Creation** on page 5-3 to create the database and import the Demo Install data into the database. **Database Creation** on page 5-3 contains the instructions for importing the DWADM schema of the Demo Install data.

Note: See **Loading Spatial Metadata** on page 8-9 to install the spatial data.

1. Navigate to the BI240/DWADM/Security folder.
2. Edit the file OraGenSec.bat, which is in the same location, and replace the parameter database-name with the name of your database. This file is provided for your convenience and executes the Oragensec.exe utility based on the parameters passed into it.

Note: Your database should already be listed in the local file tnsnames.ora.

The script will execute as the following::

```
oragensec -d DWADM,DWADM,database_name -r DW_READ,DW_USER -a A -u  
DWUSER,DWREAD
```

3. Execute the edited OraGenSec.bat file.

Configuring and Deploying Oracle Warehouse Builder

This section describes how to configure and deploy Oracle Warehouse Builder, including:

- **OWB: Initial Installation**
- **For an Upgrade Installation**

For an Initial Installation

This section describes the installation and configuration of Oracle Warehouse Builder, including:

- **Predeployment Steps for Initial Installation**
- **Configuring the Repository for an Initial Installation**

Predeployment Steps for Initial Installation

Follow these steps before installing/ configuring OWB:

1. Install the Workflow as described in **Database Creation** on page 5-3.
2. Install the OWB client 11.2.0.2 on a Windows 32-bit Server. Refer to the OWB Installation and Configuration Guide to install and configure Oracle Warehouse builder. The configuration guide is available at:

<http://www.oracle.com/technology/documentation/warehouse.htm>
3. Apply 12874883 OWB patch to the database server and the OWB client.

Configuring the Repository for an Initial Installation

Follow these steps to configure the OWB repository:

1. Run the \$ORACLE_HOME/owb/bin/unix/reposinst.sh for Unix from database server or and Invoke Repository assistant from **Warehouse Builder> Administrator for Windows** from database server or client and provide following info.
2. Provide the database connection details and click **Next**.
3. Select **Manage Warehouse Builder Workspaces**, click **Next**.
4. Select **Create a new Warehouse Builder Workspace**, click **Next**.
5. Select **Workspace with a new user as workspace owner**.
6. Provide system user password.
7. Execute cat_owb.sql as sysdba from <OWBHOME>/owb/UnifiedRepos directory, if prompted.
8. Unlock OWBSYS and OWBSYS _AUDIT accounts, if this has not already done.
9. Check only Data Integrator Enterprise Edition on Enable Optional Features, and specify the following details:
 - Workspace Owner's user Name: BIREPOWN
 - Workspace Owner's password: BIREPOWN
 - Workspace Name: SPLBIREP
 - Provide OWBSYS Password:
10. Execute <OWBHOME>/owb/UnifiedRepos /remote_owb_install.sql after log in to sys user if promoted. when prompted for Oracle Home for Remote OWB software, provide the location of OWB Oracle Home.
11. Please provide tablespace info for OWB repository schema.

12. Select the Language.
13. Select the Target Schema (DWADM) and Workflow Schema (OWFMGR) from available Repository Users List and move them to Selected. This will register the DWADM and OWFMGR schemas with the Repository.
14. On the same screen, click on **Create New User** to create Repository User. Specify the following details:
 - User Name: BIREPO
 - Password: BIREPO
15. Review the information and click **Finish** to complete the repository configuration.

Follow these steps to deploy OWB:

1. Change the contents of <owb-home>/owb/bin/admin/Runtime.properties file from


```
property.RuntimePlatform.0.NativeExecution.FTP.security_constraint
= DISABLED
property.RuntimePlatform.0.NativeExecution.Shell.security_constraint
= DISABLED
property.RuntimePlatform.0.NativeExecution.SQLPlus.security_constraint
= DISABLED
```

To

```
property.RuntimePlatform.0.NativeExecution.FTP.security_constraint
= NATIVE_JAVA
property.RuntimePlatform.0.NativeExecution.Shell.security_constraint
= NATIVE_JAVA
property.RuntimePlatform.0.NativeExecution.SQLPlus.security_constraint
= NATIVE_JAVA
```
2. Connect to OWBSYS user and execute <owb-home>/owb/rtp/sql/stop_service.sql.
3. Connect to OWBSYS user and execute <owb-home>/owb/rtp/sql/start_service.sql
4. Connect to database with sys user and execute the following procedures:

Note: Before executing these procedures change <SMTP SERVER> and <SMTP PORT> to appropriate values.

```
EXECUTE DBMS_NETWORK_ACL_ADMIN.CREATE_ACL('acl_for_owb_cc.xml',
'ACL for Control Center','OWBSYS', TRUE, 'connect');

EXECUTE
DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL('acl_for_owb_cc.xml',<SMTP
SERVER>, <SMTP PORT>);

COMMIT;
```
5. Execute the following:


```
SELECT acl,host,
DECODE(DBMS_NETWORK_ACL_ADMIN.check_privilege_aclid(aclid,
'OWBSYS', 'connect'),1, 'GRANTED', 0, 'DENIED', NULL) privilege
FROM dba_network_acls ;
```

You will see:

```
/sys/acls/acl_for_owb_cc.xml
<SMTP SERVER>
```

GRANTED

6. Connect to BIREPOWN user and run spl_exec_wf_prc.sql.
spl_exec_wf_prc.sql is located in ../BI240/Scripts.
7. Connect to DWADM schema and execute spl_oms_snapshot_pkg.sql
spl_oms_snapshot_pkg.sql is located in ../BI240/Scripts.
8. Connect to database with sys user and execute the following SQL statements:

```
DROP SYNONYM DWADM.WB_RT_AUDIT;  
CREATE SYNONYM DWADM.WB_RT_AUDIT FOR OWBSYS.WB_RT_AUDIT;  
GRANT SELECT ON OWBSYS.WB_RT_AUDIT TO DWADM;  
GRANT SELECT ON OWBSYS.ALL_RT_AUDIT_EXECUTIONS TO DWADM;  
GRANT ALL ON OWBSYS.WB_RT_AUDIT_PURGE TO DWADM;  
GRANT ALL ON OWFMGR.WF_PURGE TO DWADM;  
GRANT SELECT_CATALOG_ROLE TO BIREPOWN;  
GRANT ALL ON OWBSYS.WB_RT_AUDIT_EXECUTIONS TO DWADM;  
GRANT ALL ON OWBSYS.WB_RT_DEF_EXECUTION_OPERATORS TO DWADM;  
DROP SYNONYM DWADM.WB_RT_AUDIT_EXECUTIONS;  
DROP SYNONYM DWADM.WB_RT_DEF_EXECUTION_OPERATORS;  
CREATE SYNONYM DWADM.WB_RT_AUDIT_EXECUTIONS FOR  
OWBSYS.WB_RT_AUDIT_EXECUTIONS;  
CREATE SYNONYM DWADM.WB_RT_DEF_EXECUTION_OPERATORS FOR  
OWBSYS.WB_RT_DEF_EXECUTION_OPERATORS;  
alter system set query_rewrite_enabled=force;  
alter system set query_rewrite_integrity=trusted;
```
9. Please refer to **Installing Oracle Utilities Advanced Spatial and Operational Analytics** on page 7-1 to import mdl files and for OWB deployment.

For an Upgrade Installation

Follow these steps to upgrade BI V2.3.2.1 to V2.4.0:

1. Back up the database using the backup strategy employed at your site.
2. Please apply 12874883 OWB patch to database server and OWB client.
3. Connect to BIREPOWN user and run spl_exec_wf_prc.sql.

spl_exec_wf_prc.sql is located at ../BI240/Scripts.

4. Connect to DWADM schema and execute spl_oms_snapshot_pkg.sql
spl_oms_snapshot_pkg.sql is located at ../BI240/Scripts.

5. Connect to database with sys user and execute the following SQL statements:

```
DROP SYNONYM DWADM.WB_RT_AUDIT;
CREATE SYNONYM DWADM.WB_RT_AUDIT FOR OWBSYS.WB_RT_AUDIT;
GRANT SELECT ON OWBSYS.WB_RT_AUDIT TO DWADM;
GRANT SELECT ON OWBSYS.ALL_RT_AUDIT_EXECUTIONS TO DWADM;
GRANT ALL ON OWBSYS.WB_RT_AUDIT_PURGE TO DWADM;
GRANT ALL ON OWFMGR.WF_PURGE TO DWADM;
GRANT SELECT_CATALOG_ROLE TO BIREPOWN;
GRANT ALL ON OWBSYS.WB_RT_AUDIT_EXECUTIONS TO DWADM;
GRANT ALL ON OWBSYS.WB_RT_DEF_EXECUTION_OPERATORS TO DWADM;
DROP SYNONYM DWADM.WB_RT_AUDIT_EXECUTIONS;
DROP SYNONYM DWADM.WB_RT_DEF_EXECUTION_OPERATORS;
CREATE SYNONYM DWADM.WB_RT_AUDIT_EXECUTIONS FOR
    OWBSYS.WB_RT_AUDIT_EXECUTIONS;
CREATE SYNONYM DWADM.WB_RT_DEF_EXECUTION_OPERATORS FOR
    OWBSYS.WB_RT_DEF_EXECUTION_OPERATORS;
alter system set query_rewrite_enabled=force;
alter system set query_rewrite_integrity=trusted;
```

6. Please refer **Installing Oracle Utilities Advanced Spatial and Operational Analytics** on page 7-1 to import mdl files and OWB deployment.

Chapter 6

Installing Prerequisite Software

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

Supported Application Servers

Operating System	Chipsets	Application Server
Oracle WebLogic		
AIX 6.1 (64-bit)	Power 64-bit	64-bit version
Oracle Linux 5.6 (64-bit) Red Hat Enterprise Linux 5.6 (64-bit)	x86_64	64-bit version
Solaris 10 (64-bit)	SPARC	64-bit version
Windows 2008 Server SP2 (32-bit)	x86_64	32-bit version

Web/Application Server Tier

Oracle Client 11.2.0.2

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.

Java Software Development Kit version 1.6

Oracle Utilities Advanced Spatial and Operational Analytics requires Java version 1.6 or higher. The following are the Java software versions required for each platform:

AIX 6.1

- IBM Java Software Development Kit version 6.0 SR8 or Later, 64-bit

Oracle Linux 5.6 / Red Hat Enterprise Linux 5.6 / Solaris 10

- Oracle Java Development Kit Version 6.0 Update 20 or Later, 64-bit

Windows 2008 Server

- Oracle Java Development Kit Version 6.0 Update 20 or Later, 32-bit

Chapter 7

Installing Oracle Utilities Advanced Spatial and Operational Analytics

This chapter provides instructions for installing Oracle Utilities Advanced Spatial and Operational Analytics.

Note: Oracle Utilities Advanced Spatial and Operational Analytics v2.4 is built on top of Oracle Business Intelligence Enterprise Edition 11.1.1.5. Complete all installation steps for those products before you begin installing Oracle Utilities Advanced Spatial and Operational Analytics.

For installation and configuration tasks relating to Oracle Business Intelligence Enterprise Edition, refer to the Oracle Business Intelligence Suite Enterprise Edition installation documentation. See **Related Documents** on page i-v for a list of all available documents.

Oracle Utilities Advanced Spatial and Operational Analytics v2.4.0 comprises a set of answers and dashboards that are built on top of Oracle Business Intelligence Enterprise Edition 11.1.1.5.

Oracle Business Intelligence Enterprise Edition built-in metaphors are utilized to display non-spatial information in tables, bar graphs, pie charts, and gauges. For spatial analytics, Oracle MapViewer technology is integrated with Oracle Business Intelligence Enterprise Edition to display events, weather data, and other information that is geographically related.

This chapter includes the following topics:

- **Installation Overview**
- **Preinstallation Tasks**
- **Installing the Application: Initial Installation**
- **Installing the Application: Upgrade Installation**
- **Postinstallation Tasks**
- **Installing Optional Software**
- **Contacting Oracle Support**

Installation Overview

This process replaces any previously delivered and installed version of the Oracle Utilities Advanced Spatial and Operational Analytics server. Before you proceed:

1. Make sure that you have installed all the required third-party software as described in **Chapter 6: Installing Prerequisite Software**.
2. Complete the database installation as describe in the *Oracle Utilities Advanced Spatial and Operational Analytics Installation Guide*.
3. If you plan to upgrade a previously installed application server make a backup before you start a new installation.

As a first step of the application server installation, the Oracle Utilities Advanced Spatial and Operational Analytics application server installation package must be downloaded and installed. The application server environment is created and configured by the Oracle Utilities Advanced Spatial and Operational Analytics installation process.

Application server installation packages delivered for this version are multi-platform and are ready to install on any supported platform (as described in the section Supported Platforms on page 3- You must complete the database installation before installing the application server.

Preinstallation Tasks

This section describes tasks you must do before installing Oracle Utilities Advanced Spatial and Operational Analytics, including:

- **Hardware and Software Version Prerequisites**
- **Database Installation**
- **Installation Prerequisites**
- **Copying and Decompressing Install Media**
- **Setting Permissions for the cistab File in UNIX**

Hardware and Software Version Prerequisites

Supported Platforms on page 3-5 contains all of the available platforms that are required with this release.

Database Installation

Verify that the database has been installed and is operational.

Installation Prerequisites

Chapter 6: Installing Prerequisite Software describes all preparations that need to be done on the server prior to installing the application server. Please read carefully the server setup requirements, and make sure that all prerequisite software is installed and that all required environment variables are set. Correct server setup and proper environment variable settings are an essential prerequisite for successful environment installation

Copying and Decompressing Install Media

The Oracle Utilities Advanced Spatial and Operational Analytics application server installation file is delivered in jar format for both UNIX and Windows platforms. If you are planning to install multiple Oracle Utilities Advanced Spatial and Operational Analytics environments operated by

different Oracle Utilities Administrator user ids, you must complete each of the following installation steps for each Administrator user ID.

1. Log in to the application server host as the Oracle Utilities Advanced Spatial and Operational Analytics administrator user ID (default ceases).
2. Create a temporary directory such as `c:\ouaf\temp` or `/ouaf/temp`. (Referred to below as <TEMPDIR>.) This directory must be located outside any current 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.
3. Copy the file `OUASA.V2.4.0-MultiPlatform.jar` from the delivered package to the <TEMPDIR>. If you are using FTP to transfer this file, remember to use the `BINARY` option for the FTP transfer.
4. Decompress the file:

```
cd <TEMPDIR>
jar -xvf OUASA.V2.4.0-MultiPlatform.jar
```

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

<http://java.sun.com/products/archive/index.html>

A sub-directory named "OUBI.V2.4.0" is created. It contains the installation software for the Oracle Utilities Business Intelligence application server.

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 <TEMPDIR>/OUBI.V2.4.0 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 Business Intelligence 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 Advanced Spatial and Operational Analytics administrator user ID, so that the next time a new environment is created by the same Oracle Utilities Advanced Spatial and Operational Analytics 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: Initial Installation

This section details the initial installation of Oracle Utilities Advanced Spatial and Operational Analytics, including:

- **Installation Menu Functionality Overview**
- **Installation Menu Functionality Details**
- **Installing the Application**
- **Installation and Configuration Worksheets**

Note: If you are upgrading from version 2.3.2.1, see **Installing the Application: Upgrade Installation** on page 7-16.

Installation Menu Functionality Overview

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

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

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

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

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

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

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

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

Installation Menu Functionality Details

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

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

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

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

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

- **Default Values** are the values that will be defaulted when running the installation utility.

- Security Values denote values that should be changed when in production.
- Example Values are values that can be used for a default installation.

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

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

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

The following prompt will appear when executing the installation utility:

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

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

Encryption Methods

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

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

Installing the Application

Follow these steps to install the applications:

1. Change to the <TEMPDIR>/OUBI.V2.4.0 Directory.
2. Execute the script:

UNIX:

```
ksh ./install_OUBI.sh
```

Windows:

```
Install_OUBI.cmd
```

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

3. The Oracle Utilities Advanced Spatial and Operational Analytics specific menu will appear.
4. When you are done with the parameter setup, proceed with the option P. Write Configure file.
5. Once the install has finished successfully, you will need to execute postinstallation steps as described in **Postinstallation Tasks** on page 7-21.

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.

Environment Installation Options

```
*****
* Environment Installation Options:*
1.
    Oracle Client Home Directory:
    Installation Options:
```

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Oracle Client Home Directory	ORACLE_CLIENT_HOME	The home directory of the Oracle Client. The application will use the Perl included under this Oracle Client. Example Location: /oracle/client/product/11.2.0.2	
Installation Options	OWB (OWB components) OBIEE (OBIEE Components) ALL (OWB and OBIEE Components)	Installation type to be selected. The following are the meaning of each installation type: OWB: This will install only the OWB components. OBIEE: This will install only the OBIEE components. ALL: This will install both OWB and OBIEE components. Select this option if both OWB and OBIEE will be deployed on the same server.	While selecting OWB, ensure there is a database client for OWB. While selecting OBIEE, ensure OBIEE 11.1.1.5 is already installed. Fill only the following menu options: Environment Description OBIEE Environment Configuration

Environment Installation Options

2.

```

Environment Mount Point:
Log Files Mount Point:
Environment Name:
Web Java Home Directory:
Database Home Directory:
Database Type:                oracle

```

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Environment Mount Point	<SPLDIR>	<p>The mount point into which the application is installed. For example: /ouaf for UNIX and C:\ouaf for Windows</p> <p>This mount point MUST exist and the administrator user ID MUST be able to write to this directory. (This is the user ID that is created specifically to administer the environments; the installation sets permissions on all subdirectories installed under this directory.</p> <p>See <SPLENVIRON> below for more information on how this mount point is used.</p>	
Log File Mount Point	<SPLDIROUT>	<p>A mount point that will contain any application output or application logs. Example value is /ouaf/sploutput for UNIX installation or C:\ouaf\sploutput for Windows</p> <p>Note: This value is currently not used and can be skipped.</p>	
Environment Name	<SPLENVIRON>	<p>A descriptive name to be used as both a directory name under the mount point <SPLDIR> and an environment descriptor. This value typically identifies the purpose of the environment. For example, DEV01 or CONV</p>	

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Web Java Home Directory:	JAVA_HOME	The location on the disk where Java 1.6 is installed. Example: \$ORACLE_BI_HOME/jdk	
Database Home Directory	DATABASE_HOME	Location on the disk where database client is installed for your particular installation. Example Location for Oracle Database: /oracle/client/product/11.2.0.2	
Database Type:		The type of the database e.g. oracle, mssql or db2 Currently only "oracle" is supported.	oracle

Environment Description

1. Environment Description
Environment Description:

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

OBIEE Environment Configuration

2. OBIEE Environment Configuration
Oracle BI Instance Home:
Oracle BI Home:
Oracle BI Domain Home:
Weblogic Domain Console User Name:
Weblogic Domain Console Host:
Weblogic Domain Console Port Number:

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Oracle BI Instance Home	ORACLE_INSTANCE	Location on the disk where OBIEE software is installed instance home. Example location for Oracle Database: /oraw/BLDENGBI/instances/instance1	
Oracle BI Home	ORACLE_BI_HOME	Location on the disk where OBIEE software is installed Oracle_BI Home. Example location for Oracle Database: /oraw/BLDENGBI/Oracle_BI1	
Oracle BI Domain Home	DOMAIN_HOME	Location on the disk where OBIEE software is installed Oracle_BI Home. Example location for Oracle Domain home: /oraw/BLDENGBI/user_projects/domains/bifoundation_domain	

Menu Option	Name Used In Documentation	Usage	Customer Install Value
WebLogic Domain Console User Name	WLS_EM_USER	WebLogic domain login user name. You will be prompted for the password after installation.	
WebLogic Domain Console Host	WLS_EM_HOST	The host name on which the web application server resides. Default value: <current server name>	
WebLogic Domain Console Port	WLS_EM_PORT	A unique port number within the system that will be assigned to the HTTP port. This is the port number that is used as a part of the client URL request to connect to the host. Example value: 6500	

Database Configuration

3. Database Configuration
 - OWB WorkSpace Owner:
 - OWB WorkSpace Owner Password:
 - Database Name:
 - Database Server:
 - Database Port:

Menu Option	Name Used In Documentation	Usage	Customer Install Value
OWB WorkSpace Owner	OWB_WS_OWNER	The user ID to log in to the Oracle ware house design center	
OWB WorkSpace Owner Password	OWB_WS_OWNER_PASS	The password to login to Oracle warehouse Builder design center Example value: sysuser00 Note: The required value for an initial install is "sysuser00". This value will be saved in encrypted format This is a Security Value.	

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Database Name	OBIEE_DBNAME	The name of the database instance that the application will be connecting to.	
Database Server	OBIEE_DBSERVER	Host name of the server where database resides.	
Database Port	OBIEE_DBPORT	Database port number on the database server used for connecting to the database	

DESIGN REPOSITORY Configuration

```

4. DESIGN REPOSITORY CONFIGURATION
   OWB WorkSpace User:
   OWB Workspace user Password:
   OWB WorkSpace Name:
   DWADM SCHEMA NAME:
   DWADM SCHEMA Password:
   WORKFLOW MANAGER SCHEMA NAME:
   WORKFLOW MANAGER SCHEMA Password:

```

Menu Option	Name Used In Documentation	Usage	Customer Install Value
OWB WorkSpace User	OWB_WS_USER	The user ID to log in to the Oracle ware house design Control center	
OWB Workspace user Password	OWB_WS_PASS	<p>The password to login to Oracle warehouse Builder design Control center</p> <p>Example value: sysuser00</p> <p>Note: The required value for an initial install is “sysuser00”. This value will be saved in encrypted format</p> <p>This is a Security Value.</p>	
OWB WorkSpace Name	OWB_WS_NAME	The name of the Workspace created using Repository Assistant	
DWADM SCHEMA NAME	DWADM_SCHEMA	The user ID to Register OWB locations	DWADM
DWADM SCHEMA Password	DWADM_PASS	The password to Register OWB locations	
WORKFLOW MANAGER SCHEMA NAME	OWFMGR_SCHEMA	The user ID to Register OWB locations	OWFMGR

Menu Option	Name Used In Documentation	Usage	Customer Install Value
DWADM SCHEMA Password	OWFMGR_PASS	The password to Register OWB locations	

DATABASE CHARACTER SET Configuration

DATABASE CHARACTER SET CONFIGURATION
Database Character set: AL32UTF8

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Database Character set	DBCS	Database character Set to used to create the database	AL32UTF8

EDITING PROCESS FLOW Configuration

6. EDITING PROCESS FLOW CONFIGURATION
Repository Operating System:
Perl Compiler location:
Data and control files location:
Separator to be used:
File Manager location:

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Repository Operating System	REPOPSYS	Database operating system, for example, Win or Linux (any other platform) Valid Values: Win: windows Linux: for any non windows platforms	
Perl Compiler location	PERLCMD	Perl compiler set in database. For example: /usr/perl/bin	
Data and control files location	CTLFOLDER	Data and control file extracts location, where flat files placed to pickup by the file processor e.g:user location	
Separator to be used	FILESEP	Separator to be used for OWB deployment, where database resides e.g for Win '\\' and for Linux '/'	

Menu Option	Name Used In Documentation	Usage	Customer Install Value
File Manager location	FILEMGR	File Manager location on the database server. Copy the splfilemanager.plx file from BI240/Scripts directory to this location.	

EMAIL Configuration

7. EMAIL CONFIGURATION

Email ID of Sender:
 Email ID for Reply-To address:
 Email ID of Receiver:
 SMTP server:
 SMTP server port:

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Email ID of Sender	EMAILIDSEN	Email ID of sender to be configured in OWB while in deployment e.g:OWB@oracle.com	
Email ID for Reply-To address	EMAILIDRPL	Email ID of Reply TO to be configured in OWB while in deployment	
Email ID of Receiver	EMAILIDREC	Email ID of Receiver to be configured in OWB while in deployment	
SMTP server	SMTPSRV	Host name of the server where SMTP Service Configured	
SMTP server port	SMTPPORT	Port number on the server where SMTP Service Configured	

CONTROL CENTRE Configuration

8. CONTROL CENTRE CONFIGURATION

Repository Control Center Name:

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Repository Control Center Name	CCNAME	OWB Repository Control center to created or used to deploy the OWB objects	

EXTERNAL DATA SOURCE Configuration

9. EXTERNAL DATA SOURCE CONFIGURATION

```

Path of the External Datasource:
Path of the External Datasource LOG:
File Processor Daemon Execution Switch:      1
File Processor Extract Max Load:            5
File Processor Scheduler Poll Duration:      60

```

Menu Option	Name Used In Documentation	Usage	Customer Install Value
Path of the External Datasource	EXTERNAMEDS	Path of the extracts location	
Path of the External Datasource LOG	EXTERNAMEDS_LOG	Path of the extracts log location	
File Processor Daemon Execution Switch	FPDEXECUTION_SWITH	File processor execution switch	1
File Processor Extract Max Load	FPDEXTRACT_MAXLOAD	File processor to pick up the Extractor to load	5
File Processor Scheduler Poll Duration	SCHEDULER_POLL_DURATION	File Processor Scheduler Poll Duration	60

Installing the Application: Upgrade Installation

This section describes an installation for users who are upgrading from version 2.3.2.1 to version 2.4, including:

- **Upgrading the Installation**
- **Upgrade Installation and Configuration Worksheets**
- **Upgrading RPD and Catalog Files**

Note: If you are not upgrading from version 2.3.2.1, see **Installing the Application: Initial Installation** on page 7-4.

Upgrading the Installation

A new installation need to be created for both initial installation and upgrade installation. The steps for upgrading the application are same as an initial installation. See **Installing the Application: Initial Installation** on page 7-4.

Upgrading RPD and Catalog Files

If you have made custom changes to OBIEE 10g rpd and catalog files, follow the procedures in this section to make those files compatible with 11g. This section includes the following topics:

- **Converting RPD Files**
- **Converting Catalogs**
- **Merging the RPD Files**

Converting RPD Files

Follow these steps to convert 10g rpd files to 11g:

1. Create a folder on the server where 11g OBIEE is installed. Copy the 10g rpd file that is deployed in your environment to this folder.
2. Go to `$ORACLE_BI_HOME/bin` and run `ua.bat` or `ua`.
3. Click **Next** to continue.
4. Select **Upgrade Oracle BI RPD and Presentation Catalog**.
5. Click **Next** to continue.
6. Select **Upgrade repository**.
7. Select the 10g rpd file contained in the folder that you created in step1.
8. Enter the administrator User ID and password for the 10g rpd file.
9. Enter new administrator password for 11g rpd, for example, `oracle123`.
10. Specify the WebLogic port and login details.

An 11g compatible rpd file will be created in the following location:

```
$ORACLE_INSTANCE /bifoundation/OracleBIServerComponent/  
coreapplication_obis1/repository location.
```

11. Back up the converted rpd file from the deployed location. This is your changed rpd file.

Converting Catalogs

Follow these steps to convert 10g catalog files to 11g:

1. Create a folder on the server where 11g OBIEE is installed. For example, obiee/SampleAppLite.
2. Copy the contents of 10g ../../web/catalog/samplesales folder to the obiee/SampleAppLite folder. The samplesales folder is included in the 10g application.
3. Create a folder named “deliveries” inside the obiee folder.
4. Go to \$ORACLE_BI_HOME/bin and run ua.bat or ua
5. Select **Upgrade Oracle BI RPD and Web Catalog**.
6. Click **Next** to continue.
7. Select **Upgrade catalog**.
8. Select the obiee/SampleAppLite folder as the catalog directory.
9. Select obiee/deliveries as the catalog deliveries directory.
10. Click **next**.
11. Specify the WebLogic port and login details.
12. Click **Next**.
13. Click **Upgrade**.
14. 10g catalogs will be deployed at the following location:

```
$ORACLE_INSTANCE/bifoundation/  
OracleBIPresentationServicesComponent/coreapplication_obips1/  
catalog/SampleAppLite/root/shared location.
```

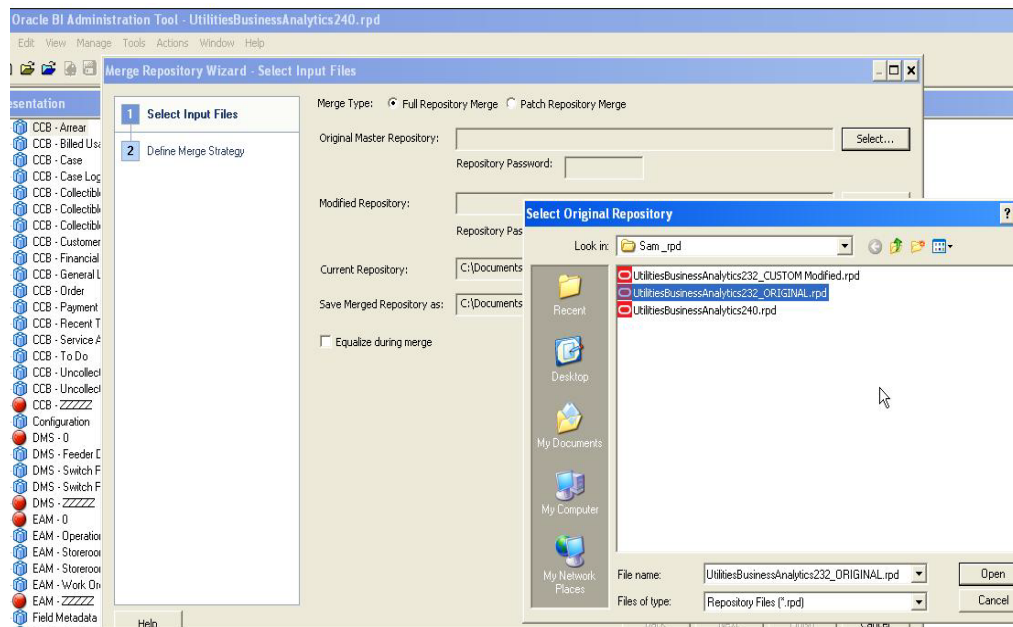
Merging the RPD Files

Convert your 10g 2.3.2.1 original rpd file to 11g as described in **Converting RPD Files** on page 7-16. The backup of the converted rpd should be considered the original rpd.

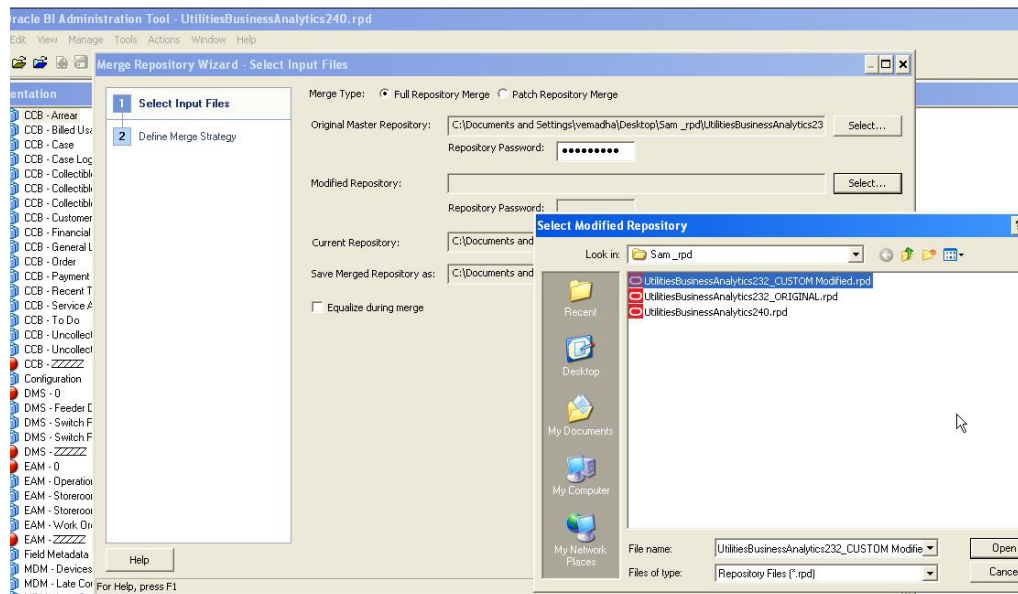
After you have converted the rpd file, follow these steps to merge the BI 2.4 rpd file, the original BI 2.3.2.1 rpd file, and the changed BI 2.3.2.1 rpd file. You will use the resulting merged rpd file for deployment in the OBIEE 11g instance.

1. In the OBIEE Administration Tool, open the Current Repository (2.4 Release RPD).
2. From the File menu, select **Merge**.

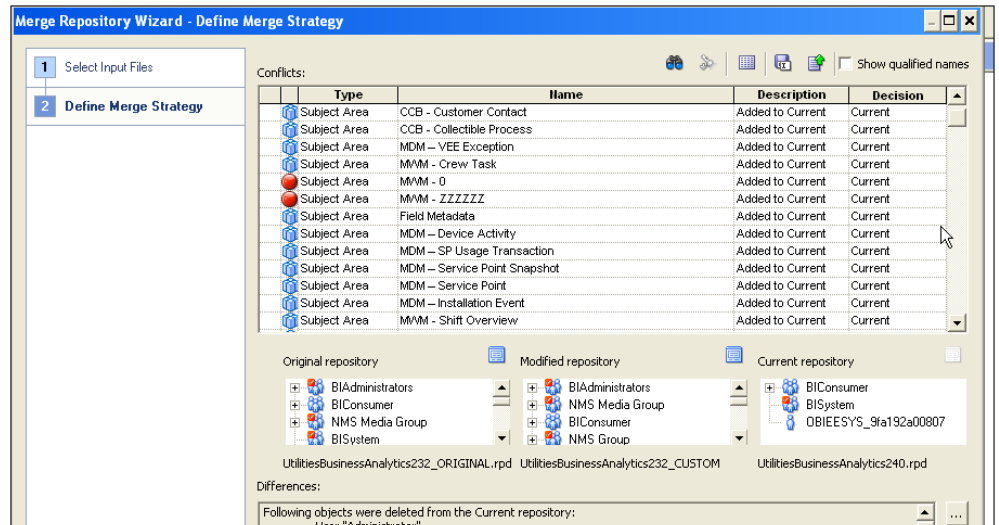
3. Select Original repository (2.3.2 Release RPD).



4. Select Modified Repository as 2.3.2 (Customer Modified) RPD.



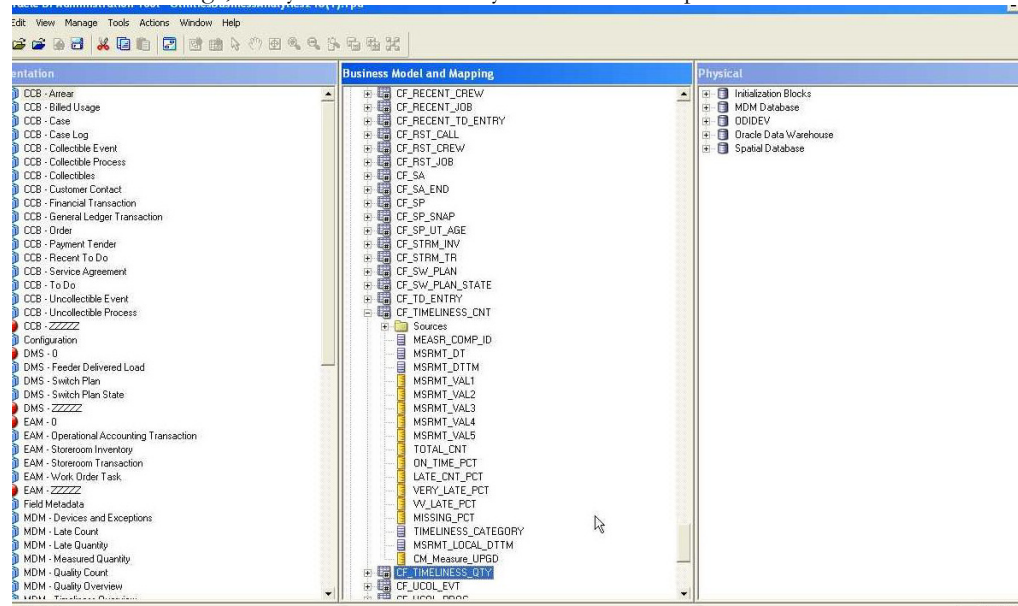
5. Define the merge strategy.

**Defining Merge Strategy: Examples of the results of different choices**

The following examples show the results of some decision choices when the current and modified repositories are different:

- If the Description column for an object contains Added to Current, the following are choices in the Decision column and their results:
 - Selecting Current keeps the addition in the current repository.
 - Selecting Modified (D) deletes the added object from the current repository.
- If the Description column for an object contains Deleted from Modified, the following are choices in the Decision column and their results:
 - Selecting Current keeps the repository as is without deleting the object.
 - Selecting Modified (D) deletes the object from the current repository.
- If the Description column for an object contains Deleted from Current, the following are choices in the Decision column and their results:
 - Selecting Current keeps the repository as is without adding the object back into the current repository.
 - Selecting Modified (A) adds the object back into the current repository.
- If the Description column for an object contains Added to Modified, the following are choices in the Decision column and their results:
 - Selecting Current keeps the repository as is without adding the object back into the current repository.
 - Modified (A). Selecting Modified (A) adds the object back into the current repository.

6. After the Merge, newly added functionality and old CM computed columns are in tact.



Postinstallation Tasks

This section describes additional tasks you must do after installing Oracle Utilities Advanced Spatial and Operational Analytics, including:

- **OWB Deployment**
- **Deploying the RPD File**
- **Deploying the Catalog**
- **Deploying MapViewer**
- **Deploying Write Back**
- **Deploying Analytics**
- **Enabling Analytics Help**

OWB Deployment

In Unix, you may get a Java heap space error while importing the MDL file. To resolve this error you may need to make change in OMBPlus.sh file, located at:

`$ORACLE_HOME/owb/bin/unix/OMBPlus.sh`

In the following code, change the `-Dlimit` value `-Xmx768M` to `-Xmx1024M`

```
$JAVAPATH/bin/java $JAVA64FLAG -Xms64M -Xmx768M $OPTS -Dlimit=768M
-DORACLE_HOME=$ORACLE_HOME -DOWBCC_HOME=$ORACLE_HOME
-DTCLLIBPATH="$TCLLIBPATH" -
DMARATHON_RETRY_COUNT="$MARATHON_RETRY_COUNT"
-DMARATHON_RETRY_INTERVAL="$MARATHON_RETRY_INTERVAL"
$CLASSPATH_LAUNCHER
oracle.owb.scripting.OMBShell $*
```

You may need to make this value larger than 1024MB (1GB) depending on the size of the import.

For Upgrade Deployment

This step needs to be performed if changes have been made to the parallel settings on external tables, materialized views or mappings on an existing installation and needs to be retained during the upgrade process.

Run the following command to generate a report on the parallel settings that is currently set in the customer repository on external tables, materialized views and mappings.

For Linux:

```
cd $SPLEBASE/bin
ksh ./parallelSetup.sh analyze
```

For Windows:

```
cd %SPLEBASE%\bin
parallelSetup.cmd analyze
```

This will generate the following files under `<SPLEBASE>/etc` folder:

```
cm-parallel-tables.txt
cm-parallel-mvs.txt
cm-parallel-maps.txt
```

Review the above files for existing settings and make modifications if necessary. Once the files are reviewed perform the following step to merge the existing settings with the default settings.

For Unix

```
cd $SPLEBASE/bin
ksh ./parallelSetup.sh merge
```

For Windows:

```
cd %SPLEBASE%\bin
parallelSetup.cmd merge
```

Review the following files under <SPLEBASE>/etc and verify that the existing values have been merged correctly before proceeding:

```
parallel-tables.txt
parallel-mvs.txt
parallel-maps.txt
```

The above files have the following format:

```
parallel-tables.txt file format: <Object_name>:<Degree>
parallel-mvs.txt file format: <MV_Name>:<Fact_Table>:<Degree>
parallel-maps.txt file format: <Object_name>:<Table_Name>:<Degree>
```

Run the following commands for deploying Materialized Views:

Unix:

```
cd $SPLEBASE/bin
cd $SPLEBASE
Run ksh ./upgradeViews.sh
```

Windows:

```
cd %SPLEBASE%\bin
Run upgradeViews.cmd
```

Once the deployment is completed, remove the \$SPLEBASE/tmp content to make sure all the complete files are removed.

```
cd $SPLEBASE/tmp
```

Generate Security

Run DWADM-OraGenSec.bat after completing OWB deployment.

Windows:

```
cd BI240/DWADM/Security
DWADM-OraGenSec.bat
```

For Initial Install Deployment

Please review the parallel-*.txt files located under the \$SPLEBASE/etc folder to set the degree of parallelism:

```
parallel-tables.txt file format: <Object_name>:<Degree>
parallel-mvs.txt file format: <MV_Name>:<Fact_Table>:<Degree>
```

parallel-maps.txt file format: <Object_name>:<Table_Name>:<Degree>

For Unix:

cd \$SPLEBASE/bin

Run Ksh ./Owbdeploy.sh

For Windows:

cd %SPLEBASE%\bin

Run Owbdeploy.cmd

Deploying Materialized Views in a Separate Step

For Unix:

cd \$SPLEBASE/bin

Run Ksh ./installViews.sh

For Windows:

cd %SPLEBASE%\bin

Run ./installViews.cmd

Once the deployment is completed, remove the \$SPLEBASE/tmp content to make sure all the complete files are removed.

cd \$SPLEBASE/tmp

Generate Security

Run DWADM-OraGenSec.bat after completing OWB deployment.

For Windows:

cd BI240/DWADM/\Security

DWADM-OraGenSec.bat

File Processor Execution

For Unix:

cd \$SPLEBASE/bin

Run nohup ksh ./startFileprocessordaemon.sh > ../tmp/consoleFileprocessordaemon.log 2>&1 &

Fileprocessor Log Location:

<SPLEBASE>/bin/Fileprocessordaemon.log

For Windows:

Run startFileprocessordaemon.cmd.

Fileprocessor Log Location:

<SPLEBASE>/bin/Fileprocessordaemon.log

Stopping the File Processor

To stop the file processor, run the following commands. Else, this section is optional.

For Unix:

Run Ksh `./stopFileprocessordaeon.sh`

After executing the file processor wait for cycles to close the database connection

For Windows:

Run `stopFileprocessordaeon.cmd`

After executing the file processor wait for cycles to close the database connection.

Deploying the RPD File

The RPD file is in the following location:

`$SPLEBASE/Reports/rpd/UtilitiesBusinessAnalytics240.rpd`

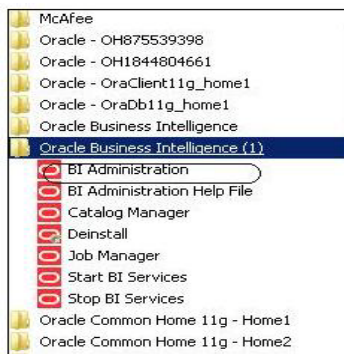
Follow these steps to deploy the RPD file:

1. Launch the Administration Tool from your Start menu:

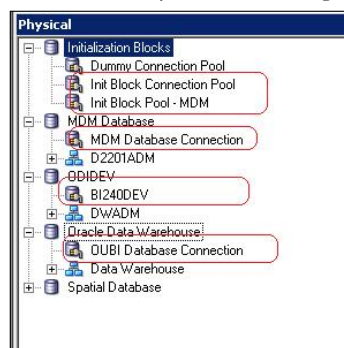
Start>Programs>Oracle Business Intelligence> Administration.

2. Open the RPD in offline mode by selecting **File>Open>Offline...**

Provide the RPD password. For example, oracle 123.

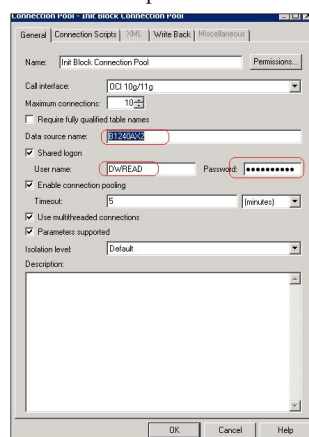


3. Edit the connection pools shown below by double clicking on them.



4. Specify the Data source name, User name, and Password.

Repeat this step for the other connection pools listed in step 2.



5. Click **Save**.
6. Login into OBIEE Enterprise Manager.
7. Go to **BI Instance > Core application > Deployment**.
8. Lock and Edit.

The repository text box will be enabled.

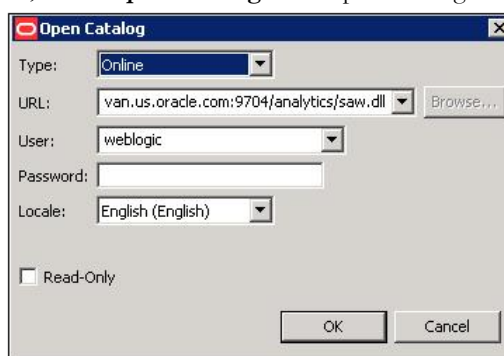
9. Browse to the modified rpd file and submit. The file is in the following location:
`$SPLEBASE/Reports/rpd/UtilitiesBusinessAnalytics240.rpd`
10. Provide the RPD password "oracle123".
11. Apply.
12. Activate changes.
13. Restart the BI Services.

Deploying the Catalog

Note: If you have old BI 2.3.2.1 catalogs in your 11g OBIEE instance, you must delete them before deploying new catalogs.

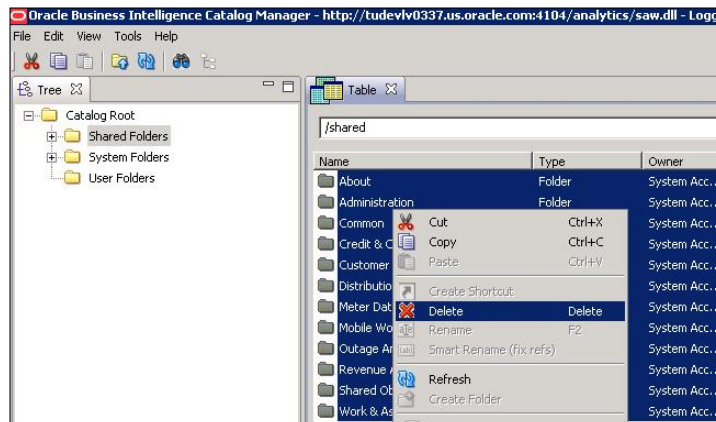
Follow these steps to deploy the catalog:

1. Launch the Catalog Manager from your Start menu:
Start > Programs > Oracle Business Intelligence > Catalog Manager.
2. From the File menu, select **Open Catalog**. The Open Catalog window is displayed.



Specify the following values:

- From the Type drop-down, select Online.
 - Enter the URL to the analytics web application in the following form:
http://<OBIEE Host>: <OBIEE Port>/analytics/saw.dll
 - Enter Administrator as the User and ASAadm as the Password.
3. Click **OK** to close the window.
 4. In the tree panel, expand the root folder /.
 5. Select the Shared folder.
 6. Select the catalogs in the shared folder, right click, and select **Delete**.



It will prompt for Physical Catalog location configured in Enterprise Manager. This is the server path where OBIEE is installed.

Unix:

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

Enter the physical catalogs location configured in Enterprise Manager. For example:

```
<MIDDLEWARE_HOME>/instances/instance1/bifoundation/
OracleBIPresentationServicesComponent/coreapplication_obips1/catalog/SampleAppLite
```

Windows:

```
deploycatalog.cmd
```

Enter the Physical Catalogs location configured in EM For example:

```
<MIDDLEWARE_HOME>/instances/instance1/bifoundation/
OracleBIPresentationServicesComponent/coreapplication_obips1/catalog/SampleAppLite
```

Deploying MapViewer

To configure MapViewer, follow these steps:

1. In the WebLogic console, create a data source by the name 'MAP_DS'.
2. Update the mapViewConfig file with below mentioned tags:

```
File location : <Middleware_Home>/Oracle_BI1/bifoundation/jee/mapviewer.ear/
web.war/WEB-INF/conf/
```

```
File: mapViewConfig.xml
```

3. If there is proxy used, insert the list of host names for all the third party service providers in the security_config node.

```
<proxy_enabled_hosts>
elocation.oracle.com,maps.weatherbug.com,direct.weatherbug.com,api.wxbug.n
et,de.tiles.weatherbug.com
</proxy_enabled_hosts>
```

4. Update the following ns_data_provider node:

```
<ns_data_providerid="obieeNsdp"
class="com.oracle.utilities.birdseye.BirdseyeNSDP" />
```

5. Update the current map_tile_server with the following map_tile_server node.

```
<map_tile_server>
<tile_storage default_root_path="/mytilecache/" />
</map_tile_server>
```

6. Update the instance config file location, for example:

FileLocation:

Unix :

```
<MiddleWare_Home>/instances/instance1/config/OracleBIPresentationS
ervicesComponent/coreapplication_obips1
```

windows:

```
<MiddleWare_Home>\instances\instance1\config\OracleBIPresentationS
ervicesComponent\coreapplication_obips1
```

File:instanceconfig.xml

1. Update the security Node with the following values. If the security Node is not present, add following code before </Serverinstance>:

```
<Security>
<ClientSessionExpireMinutes>210</ClientSessionExpireMinutes>
  <HttpOnlyCookies>>false</HttpOnlyCookies>
<CookieDomain />
<CookiePath></CookiePath>
</Security>
```

Deploy the Custom MapViewer

Unix:

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

Enter the WebLogic Domain Console Password. For example, weblogic123

Windows:

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

Enter WebLogic Domain Console Password. For example, weblogic123.

Perform the following steps after deploying the custom Mapviewer:

1. Update MapViewer configuration by navigating to MapViewer > Administration > Configuration.

2. Add the below content in the mapViewConfig.xml with appropriate <DB_HOST>,<DBNAME>,<DB_PORT>,<USER>,<PASSWORD>

```
<map_data_source name="MAPCONN"
    jdbc_host="<DB_HOST>"
    jdbc_sid="<DBNAME>"
    jdbc_port="<DB_PORT>"
    jdbc_user="<USER>"
    jdbc_password="<PASSWORD>"
    jdbc_mode="thin"
    number_of_mappers="32"
    allow_jdbc_theme_based_foi="true"
/>
```

3. Save and then restart.

Note: The above step has to be performed each time after running deploymapviewer command.

Deploying Write Back

Follow these steps to deploy the write back feature.

1. Open the following file:

```
ORACLE_INSTANCE\config\OracleBIPresentationServicesComponent\
coreapplication_obips\instanceconfig.xml
```

2. Update the following <ServerInstance> element according to the following code:

```
<LightWriteback>true</LightWriteback>
```

3. Deploy write back:

Unix:

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

Windows:

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

Deploying Analytics

1. Edit the Presentation Services configuration file, “instanceconfig.xml”, in the following directory:

```
<ORACLE_INSTANCE>/config/OracleBIPresentationServicesComponent/
coreapplication_obips1
```

2. Add the following before the end tag </ServerInstance>

```
<UI>
  <DefaultStyle>oubi</DefaultStyle>
  <DefaultSkin>oubi</DefaultSkin>
</UI>
```

Enabling Analytics Help

1. Download help OUASA user guide from Oracle Software Delivery Cloud.
2. PLACE the help file in \$SPLEBASE/Skin/res with the name “OUASA Help.pdf”
3. Run the following commands:

Unix:

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

Enter WebLogic Domain Console Password. For example, weblogic123

Windows:

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

Enter WebLogic Domain Console Password. For example, weblogic123

4. Restart The BI Core services

Restart WebLogic and all BI services after the OBIEE deployment is completed.

Log in to Analytics and navigate to Administration>Manage Privileges>Write Back>Write Back to Database. Click on **Denied:Authenticated User** and select the permission **Granted**.

Installing Optional Software

This section describes optional software that can be installed with Oracle Utilities Advanced Spatial and Operational Analytics.

OWB Code Generator

In order to use the OWB Code Generator, you need to install the Oracle Utilities Application Framework and Oracle Utilities Business Intelligence. For information on installing these items, see the Oracle Utilities Business Intelligence Installation Guide that is included in the Oracle Utilities Advanced Spatial and Operational Analytics media pack.

Contacting Oracle Support

Please follow this link to contact Oracle Support:

<http://www.oracle.com/support/index.html>

Chapter 8

Configuring Your Applications

This chapter provides instructions for configuring additional applications for use with Oracle Utilities Advanced Spatial and Operational Analytics. It contains the following topics:

- **Spatial Configuration**
- **OBIEE Configuration**
- **Supported Customizations**

Spatial Configuration

This section contains information related to configuring Oracle Utilities Advanced Spatial Outage Analytics. It includes the following topics:

- **Installing US State Spatial Data**
- **Installing US City Spatial Data**
- **Installing US Zip Code Spatial Data**
- **Installing US County Spatial Data**
- **Configuring NMS Device Spatial Data**
- **Loading Spatial Metadata**
- **Importing Map Data from Shapefile**
- **Improving Performance by Prefetching Map Tiles**

Installing US State Spatial Data

There are various versions of the world sample dataset. These instructions assume that you are using the version with a `world_sample2010.dmp` file. If you have a different version, then these instructions may not work and you should refer to the README included in the downloaded `world_sample.zip` file.

These instructions also assume that the sample data will be loaded into the DWADM account, used for the Data Warehouse. If you want to follow the instructions in the world sample README file instead, then the data will be loaded into a `WORLD_SAMPLE` account, and steps will need to be changed to use that account instead of DWADM.

Use the following procedure to install the world sample data.

1. Create a work directory on your machine for the data, and change directory to the new directory. For example:

```
mkdir NAVTEQ
cd NAVTEQ
```

2. Unzip the `world_sample.zip` file you downloaded to the new directory. For example:

```
unzip world_sample.zip
```

3. Connect to SQLPLUS using DWADM, and remove the old Tables (if present). For example:

```
sqlplus dwadm/dwadm@database @c1n_sample_data.sql
```

4. Import the world sample dump file into the DWADM account. For example:

```
imp dwadm/dwadm@database file=world_sample2010.dmp
log=world_sample.log full=y
```

5. After importing the world sample dump file, create the MapViewer Spatial metadata using the following insert statements:

```
sqlplus dwadm/dwadm@database
INSERT INTO user_sdo_maps SELECT * FROM sdo_maps;
INSERT INTO user_sdo_themes SELECT * FROM sdo_themes;
INSERT INTO user_sdo_styles SELECT * FROM sdo_styles;
INSERT INTO user_sdo_cached_maps SELECT * FROM sdo_cached_maps;
```

6. Create the State spatial table and metadata are used by the default themes present in the OUASA metadata. This assumes that the eLocation web site is being used as the base map. If

some other base map is used, then the transform parameter will need to specify the SRID of the base map being used.

```
sqlplus dwadm/dwadm@database
create table q1_states54004 (
    feature_id number,
    feature_name varchar2(255),
    area_id number,
    name_langcode varchar2(35),
    feature_type varchar2(30),
    country_code_3 varchar2(5),
    geometry SDO_GEOMETRY,
    carto_id number(10,0));

insert into q1_states54004
select null, name, null, lang_code, feature_type,
       ISO_COUNTRY_CODE, sdo_cs.transform(geometry, 54004),
       carto_id
FROM wom_area
WHERE feature_type = 909996
      and iso_country_code = 'USA';

INSERT INTO user_sdo_geom_metadata
VALUES ( 'Q1_STATES54004','GEOMETRY',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X',-
20500000,20500000,0.0005),MDSYS.SDO_DIM_ELEMENT('X',-
50000000,19000000,0.0005)), 54004);

create index q1_STATES54004_sdx
on q1_STATES54004(geometry)
indextype is mdsys.spatial_index;
```

7. Verify that the following Map Theme Profile labels match the current label for the UDF4_DESCR field in the CD_ADDR table:
 - B1-002-THEME (Customer Interrupted by State Theme) - Filter Columns and Geographical Key Column

Installing US City Spatial Data

US City shape data is available in the world sample data set, however, only the three hundred largest cities are available there. To find additional sample data for each US State from the US Census Bureau, visit:

<http://www.census.gov/geo/www/cob/pl2000.html>

The following steps can be used to load the sample data for the state of Ohio, and similar steps can be followed to load city data for other US states.

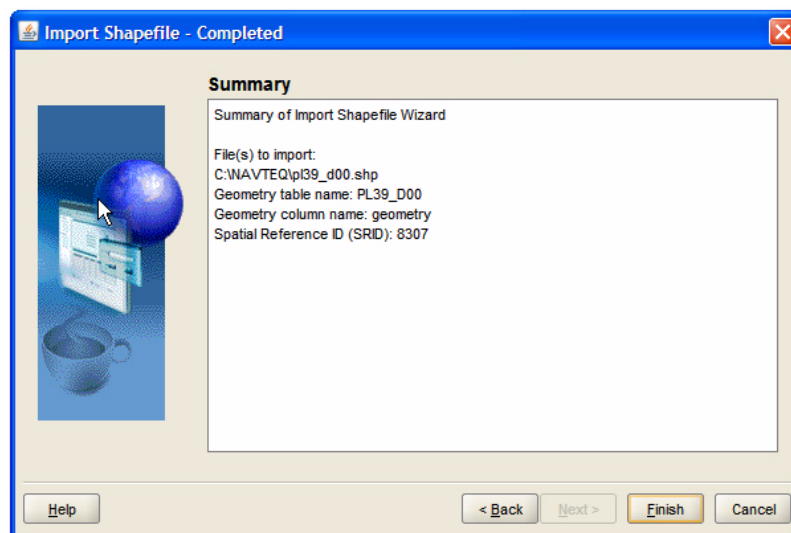
1. Click the Ohio Zip Code in Shapefile format and download the zt39_d00_shp.zip file to the NAVTEQ directory created in the previous procedure.
2. Unzip the pl39_d00_shp.zip file to the NAVTEQ directory.
3. Start MapBuilder. This is installed when MapViewer is installed. Refer to the MapViewer documentation for instructions on installing and running MapBuilder. On windows it can be started by running:

```
java -jar mapbuilder.jar
```

4. If a connection is not created, then select **File -> New Connection**, and create a connection to the DWADM account in the OUBI Data Warehouse Database.
5. Select **Tools -> Import Shapefile**, and click **Next**.
6. Click the Shapefile button.
7. Browse to the C:\NAVTEQ directory, select the pl39_d00_shp.shp file, and click **Open**.
8. Click **Next**.

Ensure that the name of the geometry table is set to pl39_d00. If this is not the desired name for the spatial table, then the select statement below will need to be changed to use the entered name.

9. Make sure the Create Predefined Theme box is unchecked, and click **Next**.
10. Review the Summary information and click **Finish**.



11. Create the Q1_CITY54004 table using the following SQL statement. This assumes that the eLocation web site is being used as the base map. If some other base map is used, then the transform parameter will need to specify the SRID of the base map being used.

```
sqlplus dwadm/dwadm@database
create table Q1_CITY54004 as
select upper(name) FEATURE_NAME,
       sdo_cs.transform(geometry, 54004) geometry,
       'OHIO' state
From pl39_d00
Where lsad_trans in ( 'city', 'village' );

INSERT INTO user_sdo_geom_metadata
VALUES ( 'Q1_CITY54004', 'GEOMETRY',
MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('X', -
50000000, 19000000, 0.0005)), 54004);

create index Q1_CITY54004_sdx
on Q1_CITY54004 (geometry)
indextype is mdsys.spatial_index;

UPDATE q1_city54004
SET geometry = SDO_UTIL.RECTIFY_GEOMETRY(geometry, .05);
```

-
12. Verify that the following Map Theme Profile labels match the current label for the UDF3_DESCR field in the CD_ADDR table:
- B1-001-THEME (Customer Interrupted By Postal Code Theme) - Geographical Key Column
 - B1-004-THEME (Monthly Customer Interrupted Playback Theme) - Geographical Key Column
 - B1CUSTPTHEME (Customer Interrupted Playback Theme) - Geographical Key Column
 - B1CUSTTHEME (Customer Interrupted Theme) - Geographical Key Column

Installing US Zip Code Spatial Data

Sample shape files for US Zip Code Areas can be found at the following location:

<http://www.census.gov/geo/www/cob/z52000.html>

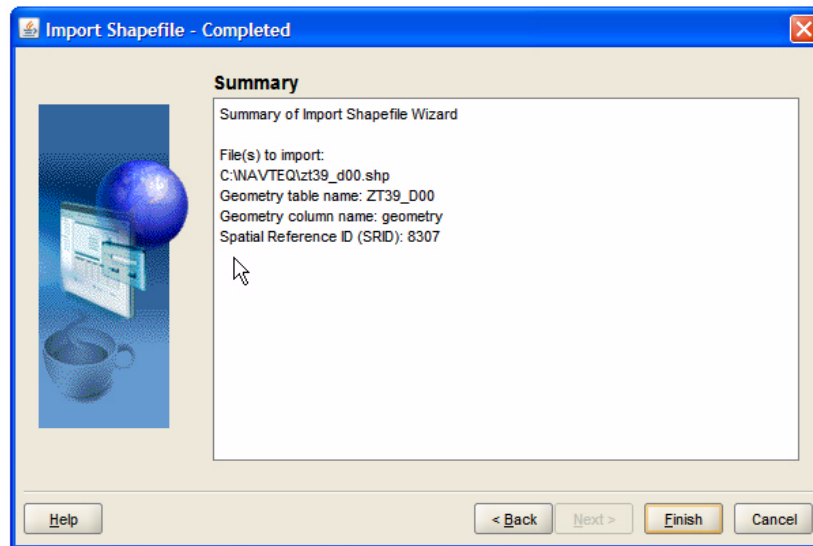
The following steps can be used to load the sample data for the state of Ohio, and similar steps can be followed to load zip code data for other US states.

1. Click on the Ohio Zip Code in Shapefile format and download the zt39_d00_shp.zip file to the NAVTEQ directory created in the previous procedure.
2. Unzip the zt39_d00_shp.zip file to the NAVTEQ directory.
3. Start MapBuilder. This is installed when MapViewer is installed. Refer to the MapViewer documentation for instructions on installing and running MapBuilder.
4. If a connection is not created, then select **File -> New Connection**, and create a connection to the DWADM account in the OUBI Data Warehouse Database.
5. Select **Tools -> Import Shapefile**, and click **Next**.
6. Click the Shapefile button.
7. Browse to the C:\NAVTEQ directory, select the zt39_d00.shp file, and click **Open**.
8. Click **Next**.

Make sure the name of the geometry table is set to ZT39_D00. If this is not the desired name for the spatial table, then the select statement below will need to be changed to use the entered name.

9. Make sure the Create Predefined Theme box is unchecked, and click **Next**.

10. Review the Summary information and click **Finish**.



11. Create the Q1_USZIP54004 table using the following SQL statement. This assumes that the eLocation web site is being used as the base map. If some other base map is used, then the transform parameter will need to specify the SRID of the base map being used.

```
sqlplus dwadm/dwadm@database

create table q1_USZIP54004 as

select zcta ZCTA5CE,
       sdo_cs.transform(geometry, 54004) geom
From ZT39_D00;

INSERT INTO user_sdo_geom_metadata
VALUES ( 'Q1_USZIP54004', 'GEOM',
MDSYS.SDO_DIM_ARRAY (MDSYS.SDO_DIM_ELEMENT('X', -
20500000, 20500000, 0.0005), MDSYS.SDO_DIM_ELEMENT('X', -
50000000, 19000000, 0.0005)), 54004);

create index q1_USZIP54004_sdx
on q1_USZIP54004 (geom)
indextype is mdsys.spatial_index;
UPDATE q1_uszip54004
SET geom = SDO_UTIL.RECTIFY_GEOMETRY(geom, .05);
```

12. Verify that the following Map Theme Profiles are set like this:
- B1CITYTHEME (Customer Interrupted By City Theme) -
 - Geographical Key Column - City | |Label for CD_CITY.STATE field
 - B1-003-THEME (Customer Interrupted By City Theme) -
 - Geographical Key Column - City | |State

Installing US County Spatial Data

Sample shape files for US Counties can be found at the following location:

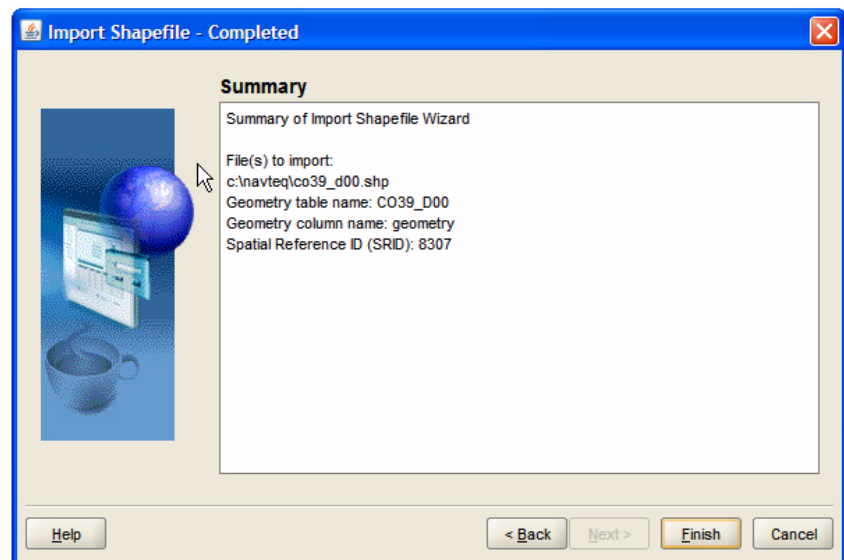
<http://www.census.gov/geo/www/cob/co2000.html>

The following steps can be used to load the sample data for the state of Ohio, and similar steps can be followed to load county data for other US states.

1. Click on the Ohio County in Shapefile format and download the co39_d00_shp.zip file to the NAVTEQ directory created in the previous procedure.
2. Unzip the co39_d00_shp.zip file to the NAVTEQ directory.
3. Start MapBuilder. This is installed when MapViewer is installed. Refer to MapViewer documentation for instructions on installing and running MapBuilder.
4. If a connection is not created, then select **File -> New Connection**, and create a connection to the DWADM account in the OUBI Data Warehouse Database.
5. Select **Tools -> Import Shapefile**, and click **Next**.
6. Click the Shapefile button.
7. Browse to the C:\NAVTEQ directory, select the co39_d00_shp.shp file, and click **Open**.
8. Click **Next**.

Make sure the name of the geometry table is set to CO39_D00. If this is not the desired name for the spatial table, then the select statement below will need to be changed to use the entered name.

9. Make sure the Create Predefined Theme box is unchecked, and click **Next**.
10. Review the Summary information and click **Finish**.



11. Create the Q1_COUNTY54004 table using the following SQL statement. This assumes that the eLocation web site is being used as the base map. If some other base map is used, then the transform parameter will need to specify the SRID of the base map being used.

```
sqlplus dwadm/dwadm@database

create table q1_COUNTY54004 as
select name FEATURE_NAME,
       sdo_cs.transform(geometry, 54004) geometry,
       'OHIO' state
From CO39_D00;

INSERT INTO user_sdo_geom_metadata
VALUES ( 'Q1_COUNTY54004', 'GEOMETRY',
```

```

MDSYS.SDO_DIM_ARRAY(MDSYS.SDO_DIM_ELEMENT('X',-
20500000,20500000,0.0005),MDSYS.SDO_DIM_ELEMENT('X',-
50000000,19000000,0.0005)), 54004);

create index q1_COUNTY54004_sdx
on q1_county54004 (geometry)
indextype is mdsys.spatial_index;

UPDATE q1_county54004
SET geometry = SDO_UTIL.RECTIFY_GEOMETRY(geometry, .05);

```

Note: No predefined reports make use of the County data, so if county spatial reports are desired, the Q1_COUNTY_54004 theme will need to be used in new requests and maps.

Configuring NMS Device Spatial Data

There are several ways that the geometry data in the DIAGRAM_OBJECTS NMS device table can be accessed by the OUASA Mapping reports. This section describes the following methods:

- **Replicating the DIAGRAM_OBJECTS Table**
- **Accessing the NMS Spatial Data Using a Database Link**

Replicating the DIAGRAM_OBJECTS Table

The easiest option is to replicate the DIAGRAM_OBJECTS table into the OUASA database. If this is done, then after replicating the DIAGRAM_OBJECTS table, the following steps will setup the OUASA dashboards to use the data in this replicated table.

1. Make sure that the spatial index is created on the LL_GEOMETRY column. The LL_GEOMETRY column by default stores spatial data using SRID 54004, so this will work without changes with the eLocation base map:

```

create index q1_DIAGRAM_OBJECTS_sdx
on diagram_objects (ll_geometry)
indextype is mdsys.spatial_index;

```

2. Create the required Spatial Metadata:

```

INSERT INTO user_sdo_geom_metadata
VALUES ( 'DIAGRAM_OBJECTS', 'LL_GEOMETRY',
MDSYS.SDO_DIM_ARRAY(
SDO_DIM_ELEMENT('X', -20037508, 20037508, .05),
SDO_DIM_ELEMENT('Y', -45884542, 45884542, .05)
), 54004);

```

3. In MapBuilder, use duplicate to create a copy of the B1_THEME_DIAGRAMOBJ_54004 Geometry Theme, with the following settings:
 - New Name: Q1_THEME_DIAGRAMOBJ_54004
 - Target Database: OUASA Database
 - Base Table: DIAGRAM_OBJECTS
 - Spatial Column: LL_GEOMETRY

Accessing the NMS Spatial Data Using a Database Link

If it is not possible to replicate the DIAGRAM_OBJECTS table, and no existing NMS Geometry theme can be used, then it is possible to access the DIAGRAM_OBJECTS table in the OUASA database using a database link.

To access the DIAGRAM_OBJECTS table in the OUASA database using a database link:

1. Create a database link in the OUASA database pointing to the NMS database.
2. Create a synonym DIAGRAM_OBJECTS for the DIAGRAM_OBJECTS table in the NMS database.
3. Update the mapViewConfig.xml to add another datasource, pointing to the NMS database, just like the OUASA datasource was added earlier in the install documentation
4. Restart WebLogic to make the NMS database available
5. Create the required Spatial Metadata in the OUASA database:

```
INSERT INTO user_sdo_geom_metadata
VALUES ( 'DIAGRAM_OBJECTS', 'LL_GEOMETRY',
        MDSYS.SDO_DIM_ARRAY (
            MDSYS.SDO_DIM_ELEMENT ('LONGITUDE', -180, 180, 0.05),
            MDSYS.SDO_DIM_ELEMENT ('LATITUDE', -90, 90, 0.05)
        ), 54004);
```

6. In MapBuilder, use duplicate to create a copy of the B1_THEME_DIAGRAMOBJ_54004 Geometry Theme, with the following settings:
 - New Name: Q1_THEME_DIAGRAMOBJ_54004
 - Target Database: OUASA Database
 - Base Table: DIAGRAM_OBJECTS
 - Spatial Column: LL_GEOMETRY

Loading Spatial Metadata

This section describes how to load spatial metadata in USER_SDO* tables for Oracle Utilities Oracle Utilities Advanced Spatial Outage Analytics. You can skip this section for Oracle Utilities Outage Analytics (non-spatial).

Before you begin, make sure you have met the following prerequisites:

- Oracle Client 11gR1 or higher client must be installed on the desktop where the database package has been downloaded.
- Check the database connectivity from the desktop.
- Oracle Locator must be installed on the target database.

Use the following procedure to load spatial metadata in the target database.

1. Create the dump_dir directory in database and copy user_sdo.dmp file from ../B1240/Spatial-Metadata folder to that location.
2. Import released spatial tables to the target database using following command:

```
impdp directory=dump_dir dumpfile=user_sdo.dmp logfile=
imp_user_sdo.log schemas=DWADM
```
3. Review the imp_user_sdo.log file to ensure the tables were imported successfully.
4. After importing the table, run following SQL scripts from the same folder:
 - sqlplus dwadm/dwadm@database-name @copy_spatial_metadata.sql

```
- sqlplus dwadm/dwadm@database-name @clean_sdo_release_tbls.sql
```

5. Review the log files.

Note: Restart WebLogic and BI services after importing the spatial data.

Importing Map Data from Shapefile

This section describes how to import map data from a shapefile using Map Builder. A shapefile, also referred to as an ESRI Shapefile, is a geospatial vector data format for mapping data.

A theme is basically a map layer. A map is typically composed of multiple themes stacked on top of each other. For example, an application that manages mobile crews might support themes for service area boundaries, crew locations, and work order locations.

Use the following procedure to import a shapefile.

1. Start MapBuilder.
2. Select **Import Shapefile** from the **Tools** menu.

The initial Import Shapefile wizard screen appears. This wizard will take you step-by-step through the process of converting your map data for use with MapViewer.
3. Click **Next** to begin.
4. Specify the Table name, Geometry Column name, SRID and location of the shapefile, then click **Next**.
5. Specify the name and style associated with the new theme, then click **Next**.

Note: If you don't know the name and style of the theme, you can skip this step and specify a theme manually after the import has completed.

A summary screen displays detailed information on how Map Builder will convert the content of the specified shapefile.

6. Click **Finish**. The conversion process begins. The system creates a geometry table and populates it with data from the shapefile.
7. If you have more than one shapefile associated with the same theme, repeat the procedure above for each shapefile.

Use the same Table name, Geometry Column name, and SRID. The system will display a pop-up window, prompting you to either replace the existing data or append the new data to the existing records. Choose **Append** to add the new data to the data already imported.

8. After all data has been imported, you can preview the data by clicking the **Preview** tab and

then clicking  to refresh the preview.

Adding the Theme to the Base Map

Use the following procedure to add the new theme to the base map.

1. Open the base map.
2. Click the **Editor** tab.
3. Click  to add a row for the new theme.
4. To adjust the attribute values for the newly added theme map, highlight the row for the theme and click .
5. Edit the properties as desired and save.
6. To preview the base map, click the **Preview** tab and then click  to refresh the preview.

Flushing the Map Cache

Before you can begin using the modified base map, you must flush the map cache as described in the following procedure:

1. Click the **Admin** button on the top of MapViewer's home page to log in.
2. Click the **Management** tab.
3. Choose **Manage MapViewer**, then select **Datasources**.
4. Click the **Purge cached metadata** button.
5. To verify the map changes, go to the Map zone that references the modified base map.

Improving Performance by Prefetching Map Tiles

Rendering map tiles dynamically can affect system performance. To avoid this you should consider prefetching tiles by issuing an admin request to MapViewer on a non-production server or when the server is not under load. When MapViewer receives a prefetching request, it issues many concurrent map tile requests to itself, which are basically XML map requests, and stores them in the cache. This improves the system's performance as the images are readily available.

Follow the following procedure to prefetch map tiles.

1. In the MapViewer Console, click **Admin** in the top right corner of the page and log in to the Admin Console page.
2. In the Admin Console page, click **Manage Map Tile Layers**.
3. Click **Manage** to display the list of existing map tiles.
4. Select the required map tile and click **View map/Manage Tiles**.

The Prefetching wizard opens:

5. Enter the X, Y coordinates of the center of the map, and the SRID and Zoom Level, and click **Show Map**.

To prefetch map images, you need to enter the latitude and longitude values. A client needs to know the latitude and longitude values of the center of the location in interest. SRID is a unique value used to identify the coordinate system used in a GIS application. The SRID used is 8307.

The X and Y axis used in the following example is for Canton, Ohio:

6. When you see the map, turn on the Area Selection Tool and select the area on the map for which you want to prefetch the tiles.
7. Select one or more zoom-levels for which you want to prefetch the tiles.
8. Under **Tile Operations**, click on **Prefetch Tiles**.

This process will take some time, depending upon the hardware configuration of the system and the amount of data to be prefetched. To check the current status of the operation, click **Refresh** under **Operation Status**. The status will change to “Finished” when the operation is done.

OBIEE Configuration

This section contains information about configuring Oracle Business Intelligence Enterprise Edition (OBIEE) for use with Oracle Utilities Advance Spatial and Operational Analytics. It contains the following topics:

- **Setting Up and Configuring User Security**
- **Managing Content in the Presentation Catalog**

Setting Up and Configuring User Security

Refer to the Configuring User Security section in the *Oracle Utilities Advanced Spatial and Operational Analytics Administrator's Guide* for details on configuring user security.

Managing Content in the Presentation Catalog

Oracle Utilities Advanced Spatial and Operational Analytics 2.4.0 Presentation Catalog has a different folder for each of the analytics.

The following folders are available on the Shared Folders

- About
- Administration
- Common
- Credit & Collections Analytics
- Customer analytics
- Distribution Analytics
- Meter Data Analytics
- Mobile Workforce Analytics
- Outage Analytics
- Revenue Analytics
- Shared Objects
- Work & Asset Analytics

For more information on User Security and Managing Catalog objects, refer to the *Oracle Business Intelligence Presentation Services Administration Guide*.

Managing Folders and Content

New folders can be created by the customer if new Answers or modifications to existing ones are needed.

To create new folders (or Development Folders), log on to the Presentation Services as an Administrator and access:

Catalog -> New Folder

Once a new folder is created, the following values can be set:

- Properties
- Name
- Delete

- Permissions
- Copy/Move

The customer can save new Answers onto the development folders, thereby leaving the out-of-box folders as is. Once the Answer is created, the report is written and unit testing is complete, the request can be moved to the common folder.

Default folders are loaded during the install of OBIEE. These folder, such as 00 Overview, 01 Ranks & Toppers, or 02 History & Benching, can be removed from view by navigating to Catalog, and then deleting the dashboards that you do not want displayed from the list.

Editing Names and Descriptions of Objects

To edit names and descriptions of objects, log on to the Presentation Services as an Administrator and access:

Catalog -> Shared Folders

Supported Customizations

The following customizations are supported:

- Customizations of the Web catalog
- Customizations of the RPD file
- Customizations of Oracle Warehouse Builder (OWB) mappings
- Customizations of the File Processor Mappings

Customizations of the Web Catalog

It is required that all customizations are done in a separate folder in order for those customizations to be preserved during the upgrade.

Please note that dashboards would still be overwritten during the upgrade and any mappings between dashboards and custom (CM) answers will be lost and would need to be re-mapped manually.

Therefore, we recommend that the customer uses a staging (CM) environment for upgrade and manual re-mapping of dashboards before moving the upgraded CM content into the production environment.

Customizations of the Repository

It is required that all customizations are done in a separate repository (RPD) file, separated from the product's out-of-the-box RPD file. Any CM changes will be merged into the upgraded RPD file through the Merge utility of the OBIEE tool, together with the product's out-of-the-box RPD file. We recommend that the customer uses a staging (CM) environment for the RPD upgrade.

Customizations of the Oracle Warehouse Builder Mappings

OWB mappings can be modified by updating the OUBI Metadata in the Table Mapping screen, and running the OWB Generator for the Fact or Dimension table that was modified, to generate TCL scripts that can then be loaded into OWB and deployed to the run-time database.

After an upgrade, the OWB Generator would need to be rerun for any modified fact and dimension tables again, since the OWB Mappings will be overwritten by the default mappings in an upgrade. We recommend that the customer user a staging (CM) environment to test the OWB upgrade and mapping redeployment prior to loading the OWB mappings in a production environment.

For other supported OWB modifications, refer to this support document in Oracle Support:

Supported Oracle Warehouse Builder Changes for BI Oracle Utilities Business Intelligence [ID 877966.1]

Customizations of the File Processor Mappings

For adding new mappings so that they can be processed by the File Processor perform the following steps:

1. Create the "cm_schedulerParm.properties.exit_1.include" file under templates folder.

Unix:

```
$SPLEBASE/templates
```

Windows:

```
%SPLEBASE%\templates
```

2. Add the following entry in "cm_schedulerParm.properties.exit_1.include" in the file:

```
extract.file.mapping.override.count = <COUNT_NUMBER>
```

Where COUNT_NUMBER is scheduler parameter mapping count from source parameter file (viz. extract.file.mapping.count) + user configurable mappings count.

Example:

```
extract.file.mapping.override.count = 251
```

3. Add the new user parameter mappings in "cm_schedulerParm.properties.exit_1.include" file.

Example:

```
extract.file.mapping250 = <MAPPING1>
extract.file.mapping251 = <MAPPING2>
```

Note: Refer to *Oracle Utilities Advanced Spatial and Operational Analytics Administrator's Guide* for mapping format.

4. Run the initialSetup command:

Unix:

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

Windows:

```
%SPLEBASE%\initialSetup.sh
```

5. Start File Processor

Unix:

```
cd $SPLEBASE/bin
nohup ksh ./startFileprocessordaemon.sh > ../tmp/
consoleFileprocessordaemon.log 2>&1 &
```

Windows:

```
startFileprocessordaemon.cmd
```

Appendix A

License and Copyright Notices

Third Party Products

Notice Concerning Usage of Mapping Data

Digital Map Data Provider

Oracle Utilities Advanced Spatial and Operational Analytics require digital map data for providing the mapping functionality. This data could be obtained by licensing eLocation (<http://elocation.oracle.com>), Oracle's Location Services. eLocation is a comprehensive location mapping tool that comprises a number of components including geo-coding, mapping and a routing engine. It uses Navigation Technologies Corporation's (NAVTEQ) data.

eLocation's Regional Coverage

eLocation is currently licensed for background maps in Western Europe and North America. Refer <http://elocation.oracle.com/elocation/legal.html> for more information on eLocation's regional coverage and Terms and Conditions.

Customers outside the eLocation covered region or who don't license eLocation can license map data from Navteq or any other third party map data providers such as

1. Google Maps
2. Bing Maps

Oracle Utilities Advanced Spatial and Operational Analytics provide an easy plug-in feature to enable Google or Bing maps. (For more information on map data configuration, refer to **Setting up a Third-Party Base Map** on page 1-32).

