

Oracle® Life Sciences Data Hub

Installation Guide

Release 2.1.4

E18152-05

March 2011

This guide has been updated with additional requirements for using Informatica PowerCenter with Oracle Life Sciences Data Hub Release 2.1.4 and with corrections and clarifications on running the post-installation program, editing listener_ifile.ora, and other sections.

Oracle Life Sciences Data Hub Installation Guide Release 2.1.4

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Contents

Preface	xi
Audience	xi
Documentation Accessibility	xii
Finding Information and Patches on My Oracle Support	xiii
Finding Oracle Documentation	xv
How to Use AutoPatch	xv
Oracle CPU Security Updates	xvii
Related Documents	xvii
Conventions	xvii
1 Before You Begin	
1.1 Get Your Company ID from Oracle	1-1
1.2 Check My Oracle Support	1-2
1.3 Assemble the Software	1-2
1.3.1 Get the Oracle Life Sciences Data Hub 2.1.4 Media Pack	1-2
1.3.2 Set Up a Staging Area	1-3
1.4 Assemble the Documentation	1-3
1.4.1 Books	1-3
1.4.2 My Oracle Support Articles	1-4
1.4.2.1 System Requirements and Technology	1-4
1.4.2.2 Installing Oracle Applications	1-4
1.4.2.3 Upgrading the Database and Patching Applications	1-4
1.4.2.4 Installing the Oracle Thesaurus Management System	1-5
1.4.2.5 Installing the Oracle Life Sciences Data Hub	1-5
1.4.2.6 Installing Real Application Clusters (RAC)	1-5
1.4.2.7 Configuration Information	1-5
2 System Requirements and Technology Stack	
2.1 System Requirements	2-1
2.1.1 Operating Systems	2-1
2.1.2 Hardware	2-2
2.2 Technology Stack	2-2
2.3 Integrated External Systems	2-3
2.4 Character Encoding Settings	2-4

3 Installing Oracle Applications

3.1	Install Oracle Applications 11.5.10.2	3-1
3.1.1	Oracle LSH UTF8 Requirements	3-1
3.2	Edit oraenv (HP-UX Only)	3-2
3.3	Increase JVM Memory.....	3-2
3.4	Migrate from JInitiator to J2SE 5.....	3-3

4 Upgrading the Database and Patching Oracle Applications

4.1	Upgrade the Database to 9.2.0.8.....	4-1
4.2	Apply Required Oracle Applications Patches	4-1
4.3	Upgrade to J2SE 6	4-2
4.4	Upgrade the Database to 11.2.0.1.....	4-3
4.5	Apply Database Patches	4-3
4.6	Edit listener_ifile.ora.....	4-3
4.7	Change Default Password Settings	4-4
4.8	Clone the Environment (Optional).....	4-4

5 Patching Oracle Warehouse Builder

5.1	Apply OWB Patches	5-1
5.2	Create Tablespaces.....	5-2
5.3	Create the OWBSYS Schema	5-2
5.4	Point to the 11gR2 Oracle Home.....	5-2
5.5	Create New OWB Workspace for CDR_RTREPOS	5-3
5.6	Set Up Your Environment	5-3
5.7	(Optional) Install Oracle Warehouse Builder 10.2.0.1	5-3

6 Installing Oracle Thesaurus Management System

6.1	Set Up a Windows Computer for Launching the TMS Installation	6-1
6.2	Setting up the SQL*Net Connections for Existing Databases.....	6-2
6.3	Install the TMS Server	6-2
6.4	Install the TMS Database	6-2
6.5	Apply TMS Patch	6-3
6.6	Check the def_instance_name Column Value	6-3

7 Installing the Oracle Life Sciences Data Hub

7.1	Install the AD Splicer.....	7-2
7.1.1	Check for the APPS_TS_TOOLS Tablespace	7-2
7.1.2	Apply the AD Splicer Patch	7-2
7.2	Install Oracle LSH Release 2.1.4	7-2
7.3	Install Online Help	7-2
7.4	Grant Execute Privileges to the APPS Schema	7-2
7.5	Integrate Oracle LSH with the Oracle Warehouse Builder.....	7-3
7.5.1	Set Up Your Environment	7-3
7.5.1.1	Ensure that Oracle SID and Short Global Names Match.....	7-3
7.5.1.2	Edit init.ora	7-3

7.5.1.3	Restart the Database and Listener	7-4
7.5.1.4	Test Database Connectivity	7-4
7.5.2	Create Directories and Copy Files	7-4
7.5.3	Disable Application Server Authentication	7-5
7.5.4	Edit run_service.sh	7-5
7.5.5	Edit Runtime.properties	7-6
7.5.6	Edit owb.classpath	7-6
7.5.7	Edit Shell Scripts to Match Directory Structure	7-7
7.5.8	Run OWB Shell Scripts	7-8
7.5.9	Stop and Start the OWB Service	7-8
7.5.9.1	Stop the OWB Service	7-8
7.5.9.2	Starting the OWB Service	7-8
7.5.10	Edit listener_ifile.ora	7-9
7.6	Create System Administrator and Security Administrator Users	7-9
7.6.1	Log on as sysadmin	7-9
7.6.2	Create a User Account for the Administrator	7-9
7.6.3	Assign a Role	7-10
7.7	Run Script	7-11
7.8	Run the Post-Installation Programs	7-11
7.8.1	Check That OWB Is Running Without Errors	7-11
7.8.2	Log On to Oracle Applications	7-12
7.8.3	Load the Adapter Files	7-12
7.8.4	Run the Post-Installation Program	7-13
7.8.4.1	If You Must Change a Post-Installation Job Parameter Value	7-16
7.8.5	Synchronize the OWB Password	7-17
7.9	Schedule the Context Index Refresh Program	7-17
7.10	Start Journaling Internal Tables	7-17
7.10.1	Set AuditTrail:Activate Profile to Yes	7-18
7.10.2	Define the Audit Installation	7-18
7.10.3	Run the Audit Trail Concurrent Program	7-19
7.11	Increase Memory Available for MetaData Reports	7-19
7.12	Grant Security Rights to Seeded Adapters	7-20
7.13	Set Up the Notification Mailer	7-20
7.14	Set Up the Distributed Processing Server	7-20
7.14.1	Create the Distributed Processing Server User Account	7-21
7.14.2	Install the Distributed Processing Server	7-21
7.14.3	Set NLS_LANG to UTF8	7-22
7.14.3.1	Windows	7-22
7.14.3.2	UNIX	7-23
7.14.4	Copy and Edit Files	7-23
7.14.4.1	Copy DP Server Files	7-23
7.14.4.2	Edit the DP Server Start Script	7-23
7.14.4.3	Copy RTF Template Files for XML Publisher	7-24
7.14.4.4	Copy and Edit Execution Command Files for Processing Engines	7-24
7.14.5	Define Service Locations and Services	7-25
7.14.6	Start the DP Server	7-26
7.15	Set Up Client Computers	7-27

7.15.1	Consumers and Administrators	7-28
7.15.2	Application Developers	7-28
7.15.2.1	Install the Client Plug-In.....	7-28
7.15.2.2	Set NLS_LANG to UTF8.....	7-29
7.15.2.3	Set Up Development Environments	7-29

8 Integrating Other Systems

8.1	Integrating Oracle Clinical with the Oracle Life Sciences Data Hub	8-1
8.2	Integrating SAS with the Oracle Life Sciences Data Hub	8-2
8.2.1	SAS Compatibility	8-2
8.2.2	Set Up SAS Job Execution	8-2
8.2.2.1	Integrate the SAS Server with Oracle LSH	8-2
8.2.2.2	Start SAS in UTF8 Mode.....	8-3
8.2.3	Set Up Loading Data from SAS	8-3
8.2.4	Set Up SAS as an Integrated Development Environment	8-3
8.3	Installing Oracle Discoverer 10.1.2.3.....	8-4
8.4	Integrating Informatica with the Oracle Life Sciences Data Hub	8-5
8.4.1	Install Informatica PowerCenter	8-6
8.4.2	Set Up Informatica Job Execution.....	8-7
8.4.3	Set Up User Accounts.....	8-7
8.4.4	Create a Remote Location and Connection for the LSHAdmin User	8-8
8.4.5	Set Up Informatica PowerCenter Designer as an Integrated Development Environment (IDE) 8-8	
8.5	Integrating Oracle SQL Developer or Oracle SQL*Plus with the Oracle Life Sciences Data Hub 8-8	
8.5.1	Set the NLS_LANG Environment Variable to UTF8.....	8-9
8.5.1.1	Windows.....	8-9
8.5.1.2	UNIX.....	8-9
8.6	Integrating Oracle Business Intelligence with the Oracle Life Sciences Data Hub	8-9
8.6.1	Install Oracle Business Intelligence Enterprise Edition	8-10
8.6.1.1	Install OBIEE	8-10
8.6.1.2	Install the Oracle LSH DP Server	8-10
8.6.2	Set Up Oracle Business Intelligence Publisher (Oracle BIP) Programs	8-10
8.6.2.1	Enable Program Execution	8-11
8.6.2.2	Set Up Security.....	8-11
8.6.2.3	Set Up Business Intelligence Publisher Definer Tools	8-11
8.6.3	Set Up OBIEE Visualizations	8-11
8.6.3.1	Install Presentation Services on the Same Computer.....	8-12
8.6.3.2	(Optional) Install Presentation Services on Another Computer.....	8-12
8.6.3.3	Set Up OBIEE Service Locations and Services	8-13
8.6.3.4	Set Up Database Connectivity	8-14
8.6.3.5	Assign Repository Filename(s) to each Oracle BI Presentation Services Instance.....	8-14
8.6.3.6	Set Up Oracle Business Intelligence Administration Tool	8-15

9 Upgrading to Oracle Life Sciences Data Hub Release 2.1.4

9.1	Supported Upgrade Paths	9-1
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9.2	Stop Server Processes	9-2
9.3	Patch Oracle Applications	9-2
9.3.1	Apply Oracle Applications 11i Rollup Patch 7.....	9-2
9.3.2	Apply Oracle Applications Patches	9-2
9.4	Upgrade the Database to 11.2.0.1.....	9-3
9.5	Change Default Password Settings	9-3
9.6	Upgrade Oracle Warehouse Builder	9-4
9.7	Upgrade Oracle Thesaurus Management System to 4.6.1	9-4
9.8	(Optional) Upgrade Informatica PowerCenter to 8.6.1, Hotfix 11.....	9-5
9.9	(Optional) Install OBIEE 10.1.3.4.1	9-5
9.10	Migrate the Oracle Warehouse Builder Repository	9-5
9.10.1	Create the OWBSYS Schema and Grant Privileges.....	9-6
9.10.1.1	Create the Schema	9-6
9.10.1.2	Grant Required Privileges	9-6
9.10.2	Point to the 11gR2 Oracle Home	9-6
9.10.3	Create New OWB Workspace for CDR_RTREPOS	9-7
9.11	Upgrade Oracle Life Sciences Data Hub	9-7
9.12	Integrate Oracle LSH with the 11gR2 Oracle Warehouse Builder.....	9-7
9.12.1	Set Up Your Environment	9-8
9.12.1.1	Ensure that Oracle SID and Short Global Names Match.....	9-8
9.12.1.2	Edit init.ora	9-8
9.12.1.3	Restart the Database and Listener.....	9-9
9.12.1.4	Test Database Connectivity.....	9-9
9.12.2	Create Directories and Copy Files.....	9-9
9.12.3	Disable Application Server Authentication	9-10
9.12.4	Edit run_service.sh	9-10
9.12.5	Edit runtime.properties.....	9-11
9.12.6	Edit owb.classpath	9-11
9.12.7	Edit Shell Scripts to Match Directory Structure	9-12
9.12.8	Run OWB Shell Scripts.....	9-12
9.12.9	Stop and Start the OWB Service	9-13
9.12.9.1	Stop the OWB Service	9-13
9.12.9.2	Start the OWB Service.....	9-13
9.12.10	Run the Migration Script	9-13
9.12.11	Export the OWB Repository Owned by User CDR_RTREPOS	9-13
9.12.12	Stop the 10g OWB Service	9-14
9.12.13	Import the OWB Repository	9-14
9.13	Migrate the Oracle Warehouse Builder Stores	9-15
9.13.1	Migrate the Store Passwords and Audit Task ID.....	9-15
9.13.2	Upgrade the Workflow Store.....	9-15
9.13.3	Upgrade Other OWB Stores.....	9-16
9.13.4	Edit listener_ifile.ora	9-16
9.14	Upgrade the Distributed Processing Server.....	9-16
9.15	Do the Remaining Post-Installation Tasks	9-17
9.16	Start Server Processes	9-17

10 What's Next

A Architecture Overview

A.1	Client Tier	A-2
A.2	Application Tier	A-3
A.3	Database Tier	A-4
A.4	Adapters to External Systems	A-4
A.4.1	Source Data Systems	A-5
A.4.2	Data Transformation and Reporting Tools	A-6
A.4.3	Visualization Tools	A-6
A.4.4	Data Export Tools	A-6

B Patching the OWB Service

C Installing Real Application Clusters (RAC)

C.1	Required Setup	C-1
C.2	Installing RAC	C-1

Preface

This preface contains the following topics:

- [Audience](#) on page xi
- [Documentation Accessibility](#) on page xii
- [Finding Information and Patches on My Oracle Support](#) on page xiii
- [Finding Oracle Documentation](#) on page xv
- [How to Use AutoPatch](#) on page xv
- [Oracle CPU Security Updates](#) on page xvii
- [Related Documents](#) on page xvii
- [Conventions](#) on page xvii

This book describes how to install Oracle Life Sciences Data Hub (Oracle LSH) Release 2.1.4.

Audience

This manual is written for people with the skill set and education described below. If your staff lacks these skills, Oracle recommends that you engage Oracle Consulting.

Required Course

Oracle recommends that you take the 5-day Oracle University course "11i Install, Patch, and Maintain Oracle Applications." This course provides students with a basic understanding of the architecture, database and file system used in Oracle Applications Release 11i. Students learn about the multi-tier architecture used to provide user access over the Internet or an intranet and the relationship between Oracle Applications and the Oracle database.

Students also learn how to:

- Use Rapid Install to perform both single- and multi-node installations of Oracle Applications
- Use the AD utilities to maintain Oracle Applications
- Patch Oracle Applications using Autopatch
- Use Rapid Clone to clone an Oracle Applications system

At the time of publication of this document, further information about this course was available at:

http://education.oracle.com/pls/web_prod-plq-dad/show_desc.redirect?dc=D17423GC51&p_org_id=1001&lang=US&source_call=
and from Oracle University by telephone at (USA) 800 529 0165.

Recommended Course for IT System Administrators

The person responsible for installing Oracle LSH needs support from IT/System Administrators. Oracle recommends that these administrators take the 5-day Oracle University course "11i System Administrator Fundamentals." In this course students learn concepts and functions that are critical to the System Administrator role, including information useful for implementing and managing the 11i E-Business Suite. Tasks covered include setting up security and user management, concurrent processing, profiles, and workflows; students also learn how to personalize Oracle E-Business Suite Forms and HTML pages. In addition, students learn how to monitor and audit an E-Business Suite system.

The System Administrator Fundamentals course provides the foundation needed to effectively control security and ensure smooth operations for an E-Business Suite installation. Demonstrations and hands-on practice reinforce the fundamental concepts.

At the time of publication of this document, further information about this course was available at:

http://education.oracle.com/pls/web_prod-plq-dad/show_desc.redirect?dc=D14411GC30&p_org_id=1001&lang=US&source_call=
and from Oracle University by telephone at (USA) 800 529 0165.

Required Skills

Installing Oracle LSH requires a level of knowledge equivalent to having mastered the material in Oracle's DBA Architecture and Administration courses.

You must be able to do the following in SQL*Plus:

- Read and edit scripts
- Run scripts and review log files for Oracle errors

You must be able to do the following in UNIX:

- Install Oracle software and patches
- Identify space on a file system for Oracle database tablespaces
- Set and use environment variables
- Edit files using vi or another editor
- Run scripts and review log files

You also need expertise in:

- Network administration
- Cluster file systems—when not using Oracle Automated Storage Manager (ASM) or Oracle Cluster File System (OCFS)

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our

documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit

<http://www.oracle.com/us/support/contact-068555.html> or visit <http://www.oracle.com/us/corporate/accessibility/support/index.html> if you are hearing impaired.

Finding Information and Patches on My Oracle Support

Your source for the latest information about Oracle Life Sciences Data Hub is Oracle Support's self-service Web site My Oracle Support (formerly MetaLink).

Before you install and use an Oracle software release, always visit the My Oracle Support Web site for the latest information, including alerts, release notes, white papers, and patches.

Creating a My Oracle Support Account

You must register at My Oracle Support to obtain a user name and password account before you can enter the Web site.

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To register for My Oracle Support:

1. Open a Web browser to <https://support.oracle.com>.
2. Click the **Register** link to create a My Oracle Support account. The registration page opens.
3. Follow the instructions on the registration page.

Signing In to My Oracle Support

To sign in to My Oracle Support:

1. Open a Web browser to <https://support.oracle.com>.
2. Click **Sign In**.

3. Enter your user name and password.
4. Click **Go** to open the My Oracle Support home page.

Searching for Knowledge Articles by ID

The fastest way to search for information, including alerts, White Papers, installation verification (smoke) tests, and bulletins is by the article ID number, if you know it.

To search by article ID:

1. Sign in to My Oracle Support at <https://support.oracle.com>.
2. Locate the Search box in the upper right corner of the My Oracle Support page.
3. Click the sources icon to the left of the search box, and then select **Article ID** from the list.
4. Enter the article ID number in the text box.
5. Click the magnifying glass icon to the right of the search box (or press the Enter key) to execute your search.

The Knowledge page displays the results of your search. If the article is found, click the link to view the abstract, text, attachments, and related products.

In addition to searching by article ID, you can use the following My Oracle Support tools to browse and search the knowledge base:

- **Product Focus** — On the Knowledge page, you can drill into a product area through the Browse Knowledge menu on the left side of the page. In the **Browse any Product, By Name** field, type in part of the product name, and then select the product from the list. Alternatively, you can click the arrow icon to view the complete list of Oracle products and then select your product. This option lets you focus your browsing and searching on a specific product or set of products.
- **Refine Search** — Once you have results from a search, use the Refine Search options on the right side of the Knowledge page to narrow your search and make the results more relevant.
- **Advanced Search** — You can specify one or more search criteria, such as source, exact phrase, and related product, to find knowledge articles and documentation.

Searching by Product and Topic

You can use the following My Oracle Support tools to browse and search the knowledge base:

- **Product Focus** — On the Knowledge page under Select Product, type part of the product name and the system immediately filters the product list by the letters you have typed. (You do not need to type "Oracle.") Select the product you want from the filtered list and then use other search or browse tools to find the information you need.
- **Advanced Search** — You can specify one or more search criteria, such as source, exact phrase, and related product, to find information. This option is available from the **Advanced** link on almost all pages.

Finding Patches on My Oracle Support

Be sure to check My Oracle Support for the latest patches, if any, for your product. You can search for patches by patch ID or number, or by product or family.

To locate and download a patch:

1. Sign in to My Oracle Support at <https://support.oracle.com>.
2. Click the **Patches & Updates** tab. The Patches & Updates page opens and displays the Patch Search region. You have the following options:
 - In the **Patch ID or Number** field, enter the number of the patch you want. (This number is the same as the primary bug number fixed by the patch.) This option is useful if you already know the patch number.
 - To find a patch by product name, release, and platform, click the **Product or Family** link to enter one or more search criteria.
3. Click **Search** to execute your query. The Patch Search Results page opens.
4. Click the patch ID number. The system displays details about the patch. In addition, you can view the Read Me file before downloading the patch.
5. Click **Download**. Follow the instructions on the screen to download, save, and install the patch files.

Finding Oracle Documentation

The Oracle Web Site contains links to all Oracle user and reference documentation. You can view or download a single document or an entire product library.

Finding Oracle Health Sciences Documentation

To get user documentation for Oracle Health Sciences applications, go to the Oracle Health Sciences documentation page at:

<http://www.oracle.com/technetwork/documentation/hsgbu-154445.html>

Note: Always check the Oracle Health Sciences Documentation page to ensure you have the latest updates to the documentation.

Finding Other Oracle Documentation

To get user documentation for other Oracle products:

1. Go to the following Web page:

<http://www.oracle.com/technology/documentation/index.html>

Alternatively, you can go to <http://www.oracle.com>, point to the Support tab, and then click **Documentation**.

2. Scroll to the product you need and click the link.
3. Click the link for the documentation you need.

How to Use AutoPatch

For complete information on using AutoPatch and an explanation of the Oracle Applications patching system and terminology, see:

- *Oracle Applications Maintenance Utilities Release 11i (11.5.10.2)*
- *Oracle Applications Maintenance Processes Release 11i (11.5.10.2)*

AutoPatch has a command prompt interface.

The basic steps required to apply a patch using AutoPatch are as follows. See the books mentioned above for detailed instructions.

1. **Set the environment.** You must set the environment to apply the configuration parameters that define your system. See *Oracle Applications Maintenance Utilities Release 11i (11.5.10.2)* for further information.
2. **Unzip patches.** Create a patch top directory, if it doesn't already exist. Download the patch and unzip it into this directory.
3. **Review information in the readme file.** The readme file contains instructions for applying the patch, including any prerequisite patches and/or manual steps.
4. **Shut down services.** If you are applying the patch to a node that contains the Concurrent Processing Server, Web Server, or Forms Server, you must shut down the Concurrent Managers, Web Server Listeners, or Forms Server Listeners respectively.
5. **Enable Maintenance Mode.** Use the Change Maintenance Mode option in AD Administration to enable maintenance mode. See "Change Maintenance Mode" in *Oracle Applications Maintenance Utilities*.

Note: Maintenance mode enhances patching performance but restricts users' access to Oracle Applications.

6. **Start AutoPatch.** AutoPatch is located in the AD_TOP/bin directory. However, you start it from the directory that contains the unzipped patch files. Use the following command:

```
$ adpatch
```

You can customize the way AutoPatch runs by adding arguments to the command line. See "Command Line Arguments" in *Oracle Applications Maintenance Utilities*.
7. **Respond to prompts.** Respond to the AutoPatch prompts for information about your system.
8. **Apply driver.** Patches contain a single unified driver (u).
9. **Exit AutoPatch.** When the patching process is complete, AutoPatch displays a message informing you that the process has been completed successfully. If the process did not run to completion, check the log file(s) and determine what caused the problem.

The primary log file is located in APPL_TOP/admin/*Oracle SID*/log *default name* adpatch.log. In addition, some patch tasks may create separate log files in the same directory. If the patching process used multiple workers, each worker creates its own log file.
10. **Disable Maintenance Mode.** Use the Change Maintenance Mode menu of AD Administration to disable maintenance mode. See "Change Maintenance Mode" in *Oracle Applications Maintenance Utilities*.
11. **Restart server processes.** After verifying that the patch was applied successfully, start all server processes and allow users to access the system.
12. **Pre-allocate space for packages, functions, and sequences (optional).** If AutoPatch has modified Oracle Applications database objects, you may want to run ADXGNPIN.sql and ADXGNPNS.sql to allocate space ("pin") for new packages and sequences in the Oracle System Global Area. These scripts are

located in AD_TOP/sql. See "Pre-allocating Space for Packages and Functions" in *Oracle Applications Maintenance Processes*.

13. **Delete or archive AutoPatch backup files.** Once you have tested the patched system, you can delete the backup copies of files from the patch top directories to recover disk space, as necessary. Oracle recommends archiving these files if you have space available.

Oracle CPU Security Updates

Oracle Corporation publishes a CPU Security Update patch quarterly. Install these patches on every computer with an Oracle Home. Check My Oracle Support's Oracle Clinical Knowledge page for information on the latest patch tested with Oracle Health Sciences applications.

Related Documents

This section lists the documents in the Oracle Life Sciences Data Hub documentation set, followed by their part number. The most recent version of each guide is posted on Oracle Technology Network; see "[Finding Oracle Documentation](#)" on page xv.

- *Oracle Life Sciences Data Hub Installation Guide* (Part E18152-01)
- *Oracle Life Sciences Data Hub Implementation Guide* (Part E18308-01)
- *Oracle Life Sciences Data Hub System Administrator's Guide* (Part E18305-01)
- *Oracle Life Sciences Data Hub Application Developer's Guide* (Part E18306-01)
- *Oracle Life Sciences Data Hub User's Guide* (Part E18307-01)

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.

Before You Begin

This section includes the following topics:

- [Section 1.1, "Get Your Company ID from Oracle"](#)
- [Section 1.2, "Check My Oracle Support"](#)
- [Section 1.3, "Assemble the Software"](#)
- [Section 1.4, "Assemble the Documentation"](#)

Note: If you are upgrading from a previous release, read:

- [Section 1.2, "Check My Oracle Support"](#)
 - [Section 1.3, "Assemble the Software"](#)
 - [Chapter 9, "Upgrading to Oracle Life Sciences Data Hub Release 2.1.4"](#)
-
-

See also:

- **Required Expertise.** For information on the expertise required to install Oracle Life Sciences Data Hub, see "[Audience](#)" on page xi.
- **New Features and Fixes.** For information on what is included in Oracle LSH Release 2.1.4 see the About Doc, which is My Oracle Support document 1138601.1.
- **Known Installation and Configuration Issues.** For up-to-date information, see My Oracle Support document 1138053.1, *Oracle Life Sciences Data Hub and Oracle Clinical Development Analytics Known Install and Configuration Issues*; see "[Searching for Knowledge Articles by ID](#)" on page xiv.

1.1 Get Your Company ID from Oracle

When you install the Oracle Life Sciences Data Hub (Oracle LSH Release 2.1.4), you will need to enter a parameter value for Company ID. The company ID serves as part of the primary key for all the Oracle LSH objects you define in this instance of Oracle LSH. If your company ever merges with another company and your Oracle LSH data and meta-data are merged with the other company's, the company ID distinguishes the objects created in each original company and prevents duplicate object primary keys.

In order to ensure that you have a unique number relative to other Oracle LSH customers, Oracle recommends that you use a number assigned to you by Oracle. Company IDs are tracked in an Oracle bug that is not publicly viewable. Contact

Oracle Support or ask your consultant to reserve a range of ten numbers for your company. You can use these numbers for:

- Your company ID. If you have multiple instances of Oracle LSH, Oracle recommends using a different company ID for each instance.
- The tech type ID of any adapters your company may create.

1.2 Check My Oracle Support

This document includes information on all upgrades and patches required as of the data of publication. Check My Oracle Support to see if there are any updates. See "[Searching for Knowledge Articles by ID](#)" on page xiv.

To be sure you have the most recent version of this installation guide, download it from Oracle Technology Network. See "[Finding Oracle Documentation](#)" on page xv.

1.3 Assemble the Software

Note: It is important to get the technology stack products from the Oracle LSH 2.1.4 media pack because, although newer versions of the technology stack products may have become available, they may not be compatible with Oracle LSH.

1.3.1 Get the Oracle Life Sciences Data Hub 2.1.4 Media Pack

Oracle LSH 2.1.4 and its technology stack are contained on the Oracle LSH 2.1.4 media pack.

To receive a physical media pack with all the required DVDs, contact Oracle Support. To expedite your request you can either call Oracle Support directly or open a Service Request (SR) selecting problem category: **Version Update Request**.

To download the media pack from eDelivery:

1. Go to <http://edelivery.oracle.com> and log on.
2. From the **Select a Product Pack** drop-down list, select **Health Sciences**.
3. From the **Platform** drop-down list, select the appropriate operating system.
4. Click **Go**.

Note: If this media pack is the only one available in Health Sciences for the platform you selected, the system takes you immediately to the media pack page from which you can download the software disk by disk.

5. Select **Oracle Life Sciences Data Hub 2.1.4 Media Pack for *Your_Operating_System*** and click **Continue**.
6. Download the software. See "[Set Up a Staging Area](#)" on page 1-3.

Note: Oracle Clinical Development Analytics is a separately licensed product.

1.3.2 Set Up a Staging Area

Creating a staging area is recommended but not required.

To set up the staging area successfully, create a directory for each disk in the media pack and then download and expand all the files that comprise a single disk in the media pack to the same location.

The media pack contains:

- Oracle Life Sciences Data Hub Disk 1 includes Oracle LSH 2.1.4 itself and all required patches for the technology stack, including Oracle 9i Database patch set 9.2.0.8 (patch 4547809), Oracle Applications ATG RUP7 (patch 6241631), and other required patches.
- Oracle Clinical 4.6 (optional and separately licensed) and Oracle Thesaurus Management System 4.6.1 (for internal Oracle LSH use).
- Oracle Applications 11.5.10.2. Start with Disk 1.
- Oracle 11gR2 Database
- Oracle Business Intelligence 10g (10.1.2.3) for Microsoft Windows; this includes the standalone version of Oracle Discoverer. Optional and separately licensed.
- Oracle Business Intelligence Suite Enterprise Edition 10.1.3.4.1 for Microsoft Windows; this includes the Oracle BI Server and other components required for Oracle LSH OBIEE Business Areas and visualizations, as well as Oracle Business Intelligence Publisher, required for Oracle LSH Programs of type BIP. Optional and separately licensed.

1.4 Assemble the Documentation

Installing Oracle LSH is a complex process because it includes installing, upgrading, and patching a number of other products. This book guides you through the whole process, but refers you to the documentation for these other products along the way.

Oracle recommends that you gather all the documentation you will need and read it before you begin the process of installing Oracle LSH.

1.4.1 Books

The books you need to install the technology stack are included in the Oracle Life Sciences Data Hub media pack.

You can also find PDF copies online; see "[Finding Oracle Documentation](#)" on page xv.

You need the following books:

- *Oracle Life Sciences Data Hub Installation Guide Release 2.1.4* (this book)
- *Oracle Life Sciences Data Hub System Administrator's Guide Release 2.1.4*
- *Installing Oracle Applications: A Guide to Using Rapid Install Release 11i (11.5.10.2)*
- *Oracle Warehouse Builder Installation and Administration Guide 11g Release 2 (11.2)*
- *Oracle Thesaurus Management System Release 4.6.1 Installation Guide*
- *Oracle Applications Maintenance Utilities Release 11i (11.5.10.2)*; part number B19300-01 for information on the AD Splicer utility
- *Oracle Applications System Administrator's Guide - Maintenance, Release 11i*

- *Oracle Applications System Administrator's Guide—Security*, Oracle Part Number B13923-02
- *Oracle Business Intelligence Installation Guide* for Oracle Discoverer
- *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* for Oracle Business Intelligence Publisher and the rest of OBIEE

In addition, if you plan to integrate Oracle Life Sciences Data Hub with any of the systems listed in [Chapter 8, "Integrating Other Systems,"](#) you need the installation guide and user documentation for those systems.

1.4.2 My Oracle Support Articles

The My Oracle Support Web site, formerly known as MetaLink, contains links to the most recent patches and updates for Oracle products. This section lists all the My Oracle Support articles listed in subsequent sections of this guide so that you can copy all of them to one place. See ["Searching for Knowledge Articles by ID"](#) on page xiv.

They are organized by the chapter where they are required. [Section 1.4.2.7, "Configuration Information"](#) lists documents with information that is not referenced elsewhere in this book but may be helpful.

1.4.2.1 System Requirements and Technology

[Chapter 2, "System Requirements and Technology Stack"](#) references the following My Oracle Support articles:

- 180430.1, *Oracle Life Sciences Applications Supported Technology Stacks*
- 316806.1, *Oracle Applications Installation Update Notes, Release 11i (11.5.10.2)*
- 316803.1, *Oracle Applications Release Notes, Release 11i (11.5.10.2)*

1.4.2.2 Installing Oracle Applications

[Chapter 3, "Installing Oracle Applications"](#) references the following My Oracle Support articles:

- 316803.1, *Oracle Applications Release Notes, Release 11i (11.5.10.2)*
- 316806.1, *Oracle Applications Installation Update Notes, Release 11i (11.5.10.2)*
- 275875.1, *Oracle Application Framework Troubleshooting Release 11i (11.5.10)*
- 946413.1, *Using Oracle E-Business Suite with a Split Configuration Database Tier on Oracle 11g Release 2 (if you are using a split configuration)*
- 119163.1, *How to Set the Heap Size for the Jserv JVM*
- 304099.1, *Using J2SE Version 5.0 with Oracle E-Business Suite 11i*

1.4.2.3 Upgrading the Database and Patching Applications

[Chapter 4, "Upgrading the Database and Patching Oracle Applications"](#) references the following My Oracle Support articles:

- 216550.1, *Interoperability Notes: Oracle Applications Release 11i with Oracle9i Release 2 (9.2.0)*
- 783600.1, *About Oracle Applications Technology 11i.ATG_P.F.H.delta.7 (RUP 7)*
- 1138053.1, *Oracle Life Sciences Data Hub and Oracle Clinical Development Analytics Known Install and Configuration Issues*

- 858801.1, *Known Issues On Top of 11i.ATG_PF.H.delta.7 (RUP7)*
- 394587.1, *Access Denied With Code 400 When Starting Forms or Calling MOD_PLSQL*
- 421923.1, *How To Prevent Adstrtal.Sh From Trying To Start/Stop Discoverer 4i*
- 401561.1, *Using JDK Version 6 with Oracle E-Business Suite 11i, Releases 11.5.10*
- 290807.1, *Deploying Sun JRE (Native Plug-in) for Windows Clients in Oracle E-Business Suite 11i*
- 1265268.1, *Interoperability Notes Oracle E-Business Suite Release 11i with Oracle Database 11g Release 2 (11.2.0)*
- 230672.1, *Cloning Oracle Applications Release 11i with Rapid Clone (Optional)*

1.4.2.4 Installing the Oracle Thesaurus Management System

[Chapter 6, "Installing Oracle Thesaurus Management System"](#) references the My Oracle Support article 333701.1 *Oracle Life Sciences Applications Windows 2003 Support Notice*.

1.4.2.5 Installing the Oracle Life Sciences Data Hub

[Chapter 7, "Installing the Oracle Life Sciences Data Hub"](#) references My Oracle Support article 164871.1 *Configuring the Workflow Notification Mailer in Oracle Applications Manager 11i*.

1.4.2.6 Installing Real Application Clusters (RAC)

[Appendix C, "Installing Real Application Clusters \(RAC\)"](#) references My Oracle Support article 823586.1, *Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 11i*.

1.4.2.7 Configuration Information

- For information on load balancing, see My Oracle Support article 217368.1 *Advanced Configurations and Topologies for Enterprise Deployments of E-Business Suite 11i*.
- 165195.1 *Using AutoConfig to Manage System Configurations with Oracle Applications 11i*
- 946413.1, *Using Oracle E-Business Suite with a Split Configuration Database Tier on Oracle 11g Release 2*

For information on Maximum Availability Architecture (MAA) see the documentation in the Oracle Technology Network at <http://www.oracle.com/technology/deploy/availability/htdocs/maa.htm>.

System Requirements and Technology Stack

This section contains the following topics:

- [Section 2.1, "System Requirements"](#)
- [Section 2.2, "Technology Stack"](#)
- [Section 2.3, "Integrated External Systems"](#)
- [Section 2.4, "Character Encoding Settings"](#)

See also [Appendix A, "Architecture Overview."](#)

Note: If you install Oracle Life Sciences Data Hub (Oracle LSH) for the first time or upgrade to a new version after December 31, 2010 and are using Oracle Enterprise Manager (OEM) 10.2.0.4 or 10.2.0.5 with Oracle LSH, apply OEM patch 8350262.

For further information see My Oracle Support article number 1217493.1.

2.1 System Requirements

This section includes some general requirements for your Oracle Life Sciences Data Hub (Oracle LSH) installation. Additional details are available in the documentation for each product you must install.

2.1.1 Operating Systems

To get the most current information on the Oracle LSH technology stack, including optional systems integrated with Oracle LSH, see My Oracle Support document 180430.1, *Oracle Life Sciences Applications Supported Technology Stacks*.

Note: Oracle LSH supports HP-UX Itanium and Linux x86-64 only on the database tier.

Read My Oracle Support document 316806.1, *Oracle Applications Installation Update Notes, Release 11i (11.5.10.2)*, to make sure that your environment meets all hardware- and platform-specific requirements.

2.1.2 Hardware

Not all technology stack components and integrated external systems are supported on the same operating systems so you may need multiple computers on the same network; see My Oracle Support document 180430.1, *Oracle Life Sciences Applications Supported Technology Stacks* and [Chapter 8, "Integrating Other Systems."](#) for further information.

Oracle recommends installing all the middle tier services, including the Concurrent Manager, on the same computer as the application server but on a different computer from the database server.

In addition, you need one computer running on Windows for use in installing TMS. You will not need this computer after installing TMS except to install any TMS patches that may be required in the future. See [Chapter 6, "Installing Oracle Thesaurus Management System."](#) You need at least one Windows computer if you plan to use Oracle Business Intelligence Enterprise Edition (OBIEE) to define Business Areas and create data visualizations (OBIEE Answers); see [Section 8.6, "Integrating Oracle Business Intelligence with the Oracle Life Sciences Data Hub."](#) You can use the same Windows computer for OBIEE and TMS.

In a typical installation, application- and database-tier computers are connected by a local area network (LAN), while application-tier computers are connected to clients in a wide area network (WAN).

Using Real Application Clusters (RAC) to install the database over several nodes is optional; see [Appendix C, "Installing Real Application Clusters \(RAC\)"](#) for further information.

Oracle LSH uses Oracle XML Publisher (which is bundled with Oracle Applications) to generate PDF-format Report Sets. If you plan to use this feature and if your Report Sets are very large, you may want to dedicate one node to Oracle XML Publisher processing.

For system hardware requirements see the documentation for each component; see [Section 1.4, "Assemble the Documentation."](#)

In addition:

- The TCP/IP network connection between the server should be at least at 1 GB.
- Be sure to allow for growth in database storage capacity.
- Oracle recommends installing a test environment as similar as possible to the production environment, including all OS and other patches and updates.

2.2 Technology Stack

To get the most current information on the Oracle LSH technology stack, see My Oracle Support document 180430.1. At the time of publication of this document, the required technology stack for Oracle LSH consists of the following products:

- **Oracle Applications 11.5.10.2** and required patches, including ATG RUP7. See [Section 3.1, "Install Oracle Applications 11.5.10.2."](#)

Note: Oracle LSH Release 2.1.4 has been tested ONLY on Release 11.5.10.2 of Oracle Applications. Do NOT install more recent releases unless explicitly instructed to do so by an Oracle LSH-specific note or alert on My Oracle Support.

- **XML Publisher 5.6.3**, which is bundled with ATG RUP7 (6241631).

Note: Do not apply any higher version of Oracle XML Publisher that may become available, unless explicitly instructed to do so by an Oracle LSH-specific note or alert on My Oracle Support. Oracle LSH Release 2.1.4 has been tested only with XML Publisher Release 5.6.3.

- **Oracle Workflow FND.H** is shipped and installed with Oracle Applications 11.5.10.2.
- **JDK** The Java Developer Kit is shipped and installed with Oracle Applications 11.5.10.2.
- **Oracle Database 11.2.0.1.** You must upgrade the database that is shipped and installed with Oracle Applications 11.5.10 to 11.2.0.1.
- **XML DB**, which is included with the 11.2.0.1 database, is required for Oracle LSH.
- **Oracle Warehouse Builder 10.2.0.1 and 11.2.0.1** OWB 11.2.0.1 with required patches is required for Oracle LSH 2.1.4's execution system. In addition, if you use Oracle Discoverer for data visualizations you must install OWB 10.2.0.1.
- **Oracle Thesaurus Management System 4.6.1** is used internally for Oracle LSH's classification system.
- **Oracle Reports 6.0.8.28** is included with Oracle Developer 6i patch set 19, which is a prerequisite for Oracle Database 11gR2. It is required for Oracle LSH Programs of type Oracle Reports.
- A **Zip utility** is required on the Oracle LSH Distributed Processing Server.
- For IDE launch (client), **Winzip**—Winzip Pro 11.2 SR-1, Winzip 8.1, or any other Winzip version that includes the WZUNZIP.exe—is required. It is separately licensed and not included on the media pack.

2.3 Integrated External Systems

Oracle LSH includes adapters to support integration with the following external systems.

- **Oracle Clinical 4.5.1** (Optional and licensed separately) with Oracle Clinical patch 4.5.1.14 or its successor, 4.5.1.75.
- **Oracle Clinical 4.6** (Optional and licensed separately.)
- **Oracle Discoverer 10.1.2.3** Optional. Do not use the version shipped and installed with Oracle Applications 11.5.10. Instead, use the standalone version in the Oracle LSH media pack.
- **SAS 8.2, SAS 9.1.3, SAS 9.2** Optional and licensed separately.
- **Informatica PowerCenter 8.6.1 with Hotfix 11** Optional and licensed separately.
- **Oracle Business Intelligence Enterprise Edition (OBIEE) 10.1.3.4.1** with patch 7642637. Optional and licensed separately but included in the media pack.
- **Oracle BI Publisher 10.1.3.4.1** (Included with OBIEE). Optional and licensed separately but included in the media pack.

2.4 Character Encoding Settings

The data loaded into Oracle Life Sciences Data Hub (LSH) may originate in many systems, and these systems may use different encodings for special characters, including characters used in languages other than English. Special characters encoded in a coding system other than the one used by Oracle LSH may not be stored or displayed correctly in Oracle LSH.

If your data includes special characters, follow the steps in the sections listed here to adjust the many settings that determine the encoding used by various processes.

Make changes only after carefully analyzing the potential impact on your own data.

- Set the database character set when installing Oracle Applications; see [Section 3.1.1, "Oracle LSH UTF8 Requirements"](#).
- Leave `NLS_LENGTH_SEMANTICS` set to its default value, which is `BYTE`. To use character semantics, which is required, see the next point.
- Set the LHS profile `Use Character Semantics for Workarea Installation` to **Yes**. See the chapter on setting profile values in the *Oracle Life Sciences Data Hub System Administrator's Guide* for information.
- Set environment variables on each computer where you install the Oracle LSH Distributed Processing (DP) Server; see [Section 7.14.3, "Set NLS_LANG to UTF8"](#).
- Add a JVM argument to the DP Server Start script; see [Section 7.14.4.2, "Edit the DP Server Start Script"](#).
- If you are running SAS programs from Oracle LSH, see [Section 8.2.2.2, "Start SAS in UTF8 Mode"](#).
- Definers who have a SAS or Oracle client such as SQL Developer or SQL*Plus installed as a development environment on their PC should follow instructions in [Section 8.5.1, "Set the NLS_LANG Environment Variable to UTF8"](#).

Installing Oracle Applications

This section includes the following topics:

- [Section 3.1, "Install Oracle Applications 11.5.10.2"](#)
- [Section 3.2, "Edit oraenv \(HP-UX Only\)"](#)
- [Section 3.3, "Increase JVM Memory"](#)
- [Section 3.4, "Migrate from JInitiator to J2SE 5"](#)

Note: Before installing Oracle Applications, read My Oracle Support document 316806.1 to check that your environment meets all hardware- and platform-specific requirements.

If necessary, consult the Oracle Application Framework installation troubleshooting guide, which is My Oracle Support document 275875.1.

3.1 Install Oracle Applications 11.5.10.2

To install Oracle Applications 11.5.10.2, use the following documentation:

- *Installing Oracle Applications: A Guide to Using Rapid Install Release 11i (11.5.10.2)*
- My Oracle Support document 316803.1, *Oracle Applications Release Notes, Release 11i (11.5.10.2)*
- My Oracle Support document 316806.1, *Oracle Applications Installation Update Notes, Release 11i (11.5.10.2)*, for platform-specific information

If you are using a split configuration database tier, read My Oracle Support document 946413.1, *Using Oracle E-Business Suite with a Split Configuration Database Tier on Oracle 11g Release 2*.

Note: Oracle LSH has been tested ONLY on Release 11.5.10.2 of Oracle Applications. If more recent releases have become available, do NOT install them unless explicitly instructed to do so by an Oracle LSH-specific note or alert on My Oracle Support.

3.1.1 Oracle LSH UTF8 Requirements

Oracle LSH has the following character set-related required settings:

- **Database character set=UTF8.** Oracle Applications Rapid Install prompts you for the database character set. **You MUST set this value to UTF8. A value of UTF8 is**

REQUIRED. This is the ONLY opportunity you have to set this value, and you CANNOT change it later.

- **NLS_CHARACTERSET=UTF8.** When you set the database character set to UTF8 during Oracle Applications Rapid Install, it automatically sets NLS_CHARACTERSET to UTF8 as well, which is correct.
- **NLS_LENGTH_SEMANTICS=BYTE.** The default value for NLS_LENGTH_SEMANTICS is BYTE. **Do not change this value.** To use character semantics, set the LHS profile Use Character Semantics for Workarea Installation to **Yes**. See the chapter on setting profile values in the *Oracle Life Sciences Data Hub System Administrator's Guide* for information.

3.2 Edit oraenv (HP-UX Only)

If and only if you are installing Oracle LSH on HP-UX you must edit the **oraenv** file on the 806 Oracle Home.

One `fi` is missing. You must add one `fi` in the following section of the file so that it appears as follows:

```
if [ $? = 0 -a "$ULIMIT" != "unlimited" ] ; then
  if [ "$ULIMIT" -lt 2113674 ] ; then
    if [ -f $ORACLE_HOME/bin/osh ] ; then
      exec $ORACLE_HOME/bin/osh
    else
      for D in `echo $PATH | tr : " "`
      do
        if [ -f $D/osh ] ; then
          exec $D/osh
        fi
      done
    fi
  fi
fi
```

3.3 Increase JVM Memory

Oracle recommends a minimum Java Virtual Machine (JVM) setting of 2048M instead of the default size of 256M. See My Oracle Support document 119163.1, *How to Set the Heap Size for the Jserv JVM*.

You must make this change through Oracle Applications Manager. If you do it manually, your changes will be lost when you run AutoConfig.

To increase this setting, do the following:

1. Open your web browser.
2. Enter the eBusiness Suite SSWA (Self-Service Web Application) URL as follows:

`http://<host name>.<domain name>:<HTTP port>/oa_servlets/AppsLogin`

For example:

`http://oraapps1.oracle.com:8000/oa_servlets/AppsLogin`

The Applications Login screen appears.

3. Log in as `sysadmin`, created in the 11.5.10.2 installation.

An E-Business Suite screen opens.

4. Click **System Administration** in the left-hand column under Navigator. The system refreshes the page and adds a column of links on the right.
5. Under **Oracle Applications Manager** in the right-hand column, click **Dashboard**. The Applications Dashboard screen opens.
6. Click **Sitemap** to go to the Sitemap tab.
7. Under **System Configuration**, click **AutoConfig**. The AutoConfig screen opens.
8. Under **Context Files**, click the **Edit Parameters** icon for the Application Tier. The Context File Parameters screen opens.
9. From the **Search** drop-down list, select **OA_VAR** and click **Go**.
10. In the field next to the Search drop-down list, enter the parameter name `s_jvm_options` and click **Go**.
11. In the Value field for `s_jvm_options`, change the value from:


```
-Xmx256M -Xms128M -XX:MaxPermSize=128M -XX:NewRatio=2
-XX:+PrintGCTimeStamps -XX:+UseTLAB
```

 to:


```
-Xmx2048M -Xms128M -XX:MaxPermSize=128M -XX:NewRatio=2
-XX:+PrintGCTimeStamps -XX:+UseTLAB
```

 Note the changed value is in **bold** above.
12. Run AutoConfig. See My Oracle Support document number 165195.1.
You should now be able to see in `jsrv.properties` that JVM has changed from 256M to 2048M.
13. Stop and start the Apache server for the new value to take effect.

3.4 Migrate from JInitiator to J2SE 5

Some Oracle LSH installation and administrative functions require the use of Oracle Forms, which no longer support JInitiator. J2SE includes JDK. To migrate to J2SE 5, as required by ATG RUP7, follow instructions in My Oracle Support article 304099.1, *Using J2SE Version 5.0 with Oracle E-Business Suite 11i*; see "[Finding Information and Patches on My Oracle Support](#)" on page xiii.

For J2SE client deployment, use document 290807.1, *Deploying Sun JRE (Native Plug-in) for Windows Clients in Oracle E-Business Suite 11i*

Upgrading the Database and Patching Oracle Applications

This section contains the following topics:

- [Section 4.1, "Upgrade the Database to 9.2.0.8"](#)
- [Section 4.2, "Apply Required Oracle Applications Patches"](#)
- [Section 4.4, "Upgrade the Database to 11.2.0.1"](#)
- [Section 4.5, "Apply Database Patches"](#)
- [Section 4.6, "Edit listener_ifile.ora"](#)
- [Section 4.7, "Change Default Password Settings"](#)
- [Section 4.8, "Clone the Environment \(Optional\)"](#)

Oracle Applications includes the Oracle 9.2.0.6 (9i) Database. However, Oracle Life Sciences Data Hub (Oracle LSH) 2.1.4 requires the Oracle 11gR2 Database Server, which requires Oracle Applications ATG RUP7, which is not supported on Oracle Database 9.2.0.6 but is supported on 9.2.0.8. Therefore you must upgrade the Oracle Database you installed during the Oracle Applications Rapid Install and Oracle Applications itself **in the order given**.

Note: Oracle recommends that you make a backup of Oracle Applications and the existing database before you upgrade the database.

4.1 Upgrade the Database to 9.2.0.8

To upgrade the 9.6.0.6 database you installed during the Oracle Applications installation, apply patch set 9.2.0.8 (4547809) for your operating system, using the instructions in My Oracle Support document 216550.1, *Interoperability Notes: Oracle Applications Release 11i with Oracle9i Release 2 (9.2.0)*.

Note: There is no need to run Autoconfig as described in document 216550.1 because you will immediately upgrade the database.

4.2 Apply Required Oracle Applications Patches

Install the following patches using Autopatch (see ["How to Use AutoPatch"](#) on page xv).

- 6241631 (11i.ATG_PFH.RUP7) with all its prerequisite and required post-installation patches.
Follow instructions in My Oracle Support document 783600.1, *About Oracle Applications Technology 11i.ATG_PFH.delta.7 (RUP 7)* very carefully, being sure to install every prerequisite and required post-installation patch and its prerequisites, if any.
- 4477329 issue while extracting FND lookup data
- 7456837 required for 11g JDBC driver compatibility
- 7605820 Binder utility shows bookmarks in merged document
- 8506761 PDFBookbinder update for XML Publisher 5.6.3
- 9655837 to fix a problem with the Rich Text Editor that prevents manually entering Oracle LSH source code

Note: Check My Oracle Support article 1138053.1, *Oracle Life Sciences Data Hub and Oracle Clinical Development Analytics Known Install and Configuration Issues* to see if any other patches have become required. **Do not apply additional patches** unless they have been tested with Oracle LSH and listed in article 1138053.1. See "[Searching for Knowledge Articles by ID](#)" on page xiv.

See also My Oracle Support article 858801.1, *Known Issues On Top of 11i.ATG_PFH.delta.7 (RUP7)*.

Note: Oracle recommends taking a full backup at this point.

Note: If you are running on Solaris and get an error when starting Forms (required for some Oracle LSH system administration tasks), see My Oracle Support document 394587.1, *Access Denied With Code 400 When Starting Forms or Calling MOD_PLSQL*.

If the Oracle Discoverer release that comes with Oracle Applications fails on startup, see My Oracle Support document 421923.1, *How To Prevent Adstrtal.Sh From Trying To Start/Stop Discoverer 4i*. However, this version of Oracle Discoverer is not used for Oracle LSH; see [Section 8.3, "Installing Oracle Discoverer 10.1.2.3"](#).

4.3 Upgrade to J2SE 6

After applying 11i.ATG_PFH.RUP7 ([Section 4.2](#)) you can upgrade to J2SE 6, which includes JDK. Use My Oracle Support article 401561.1, *Using JDK Version 6 with Oracle E-Business Suite 11i, Releases 11.5.10*; see "[Searching for Knowledge Articles by ID](#)" on page xiv.

For J2SE client deployment, use My Oracle Support article 290807.1, *Deploying Sun JRE (Native Plug-in) for Windows Clients in Oracle E-Business Suite 11i*.

4.4 Upgrade the Database to 11.2.0.1

Follow instructions for upgrading the database in My Oracle Support article 1265268.1, *Interoperability Notes Oracle E-Business Suite Release 11i with Oracle Database 11g Release 2 (11.2.0)*. The following steps are not required for Oracle LSH:

- Migrating Oracle Portal
- Installing Data Mining and OLAP

Notes: Be sure to install the Oracle 11g Example CD. Oracle Text is included on this CD and is required for Oracle LSH.

Note: My Oracle Support article 881505.1 states that Oracle Warehouse Builder 11gR2 is not yet certified for use with EBS11i. You can disregard this statement in the context of Oracle Life Sciences Data Hub.

4.5 Apply Database Patches

In addition, install the following patches using AutoPatch (see "[How to Use AutoPatch](#)" on page xv).

- 6880880 the latest patch for the Universal Installer.
- 9580062 is required for bulk loading.

Check My Oracle Support article 1265268.1, *Interoperability Notes Oracle E-Business Suite Release 11i with Oracle Database 11g Release 2 (11.2.0)* to see if your environment requires any database patches.

Note: Oracle recommends taking a full backup at this point.

4.6 Edit listener_ifile.ora

You need to configure the database TNS listener to allow OWB to communicate with the database. Instead of making all the required changes in the listener.ora file, which is overwritten when you run Autoconfig, make the changes in the listener_ifile.ora file.

Check variable \$TNS_ADMIN for the location of listener.ora. The file listener_ifile.ora is in the same location.

Edit listener_ifile.ora to make TNS listener-related changes. For example, if the database SID is ildv214:

```
SID_LIST_ildv214 =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = ildv214)
      (ORACLE_HOME= /slot/ems6636/oracle/ildv214db/11.2.0)
      (SID_NAME = ildv214)
    )
  )
  (SID_DESC =
    (GLOBAL_DBNAME = ildv214.us.oracle.com)
    (ORACLE_HOME= /slot/ems6636/oracle/ildv214db/11.2.0)
    (SID_NAME = ildv214)
  )
)
```

```
(SID_DESC =  
  (SID_NAME = PLSExtProc)  
  (ORACLE_HOME = /slot/ems6636/oracle/ildv214db/11.2.0)  
  (PROGRAM = extproc)  
)  
)
```

4.7 Change Default Password Settings

Oracle 11g includes new default password-related settings.

- Edit `init.ora` to turn off case-sensitive database logon as follows:

```
sec_case_sensitive_logon=false
```

- To prevent database password expiration, log in to SQL*Plus as a superuser and enter:

```
ALTER PROFILE DEFAULT LIMIT PASSWORD_LIFE_TIME UNLIMITED;
```

4.8 Clone the Environment (Optional)

If you plan to create another Oracle LSH environment on the same platform, you can clone your installation at this point. You cannot clone it after you have installed OWB, TMS, or iAD. Refer to My Oracle Support document 230672.1, *Cloning Oracle Applications Release 11i with Rapid Clone*.

Patching Oracle Warehouse Builder

This section includes the following topics:

- [Section 5.1, "Apply OWB Patches"](#)
- [Section 5.2, "Create Tablespaces"](#)
- [Section 5.3, "Create the OWBSYS Schema"](#)
- [Section 5.4, "Point to the 11gR2 Oracle Home"](#)
- [Section 5.5, "Create New OWB Workspace for CDR_RTREPOS"](#)
- [Section 5.6, "Set Up Your Environment"](#)
- [Section 5.7, "\(Optional\) Install Oracle Warehouse Builder 10.2.0.1"](#)

Oracle Life Sciences Data Hub (Oracle LSH)'s internal processing is based on Oracle Warehouse Builder (OWB). The 11gR2 database installation by default includes an installation of OWB 11gR2.

After you install both OWB and Oracle LSH you must integrate them. See [Section 7.5, "Integrate Oracle LSH with the Oracle Warehouse Builder."](#)

Note: If you are using Oracle Discoverer, you also need an installation of OWB 10.2.0.4; see [Section 5.7, "\(Optional\) Install Oracle Warehouse Builder 10.2.0.1"](#).

5.1 Apply OWB Patches

Apply OWB patches to the OWB installation that was done automatically when you installed the 11gR2 database.

1. Download the following patches from My Oracle Support (see ["Finding Patches on My Oracle Support"](#) on page xiv).
 - 9472946
 - 9584600

Note: Set the ORACLE_HOME environment variable to point to the actual Oracle Home, not the OWB Home as currently directed in the patch readme files. In Oracle 11g, **the OWB Home and the Oracle Home are the same.**

2. Apply the patches using instructions in the readme files.

5.2 Create Tablespaces

To maximize performance, Oracle recommends that you create three new 500MB tablespaces in which to install Oracle Warehouse Builder.

To create tablespaces for OWB data files, OWB index files, and OWB snapshot files, do the following:

1. Log in to the server as the owner of the RDBMS ORACLE_HOME.
2. Set the env variables by running the env file, <sid>_<server name>.env, in the RDBMS ORACLE_HOME directory.

3. Enter:

```
Sqlplus "/ as sysdba"
```

```
CREATE TABLESPACE OWB_DATA datafile '<datafile location>/owb_data01.dbf' SIZE  
500M EXTENT MANAGEMENT LOCAL AUTOALLOCATE;
```

```
CREATE TABLESPACE OWB_IDX datafile '<datafile location>/owb_idx01.dbf' SIZE  
500M EXTENT MANAGEMENT LOCAL AUTOALLOCATE;
```

```
CREATE TABLESPACE OWB_SNAP datafile '<datafile location>/owb_snap01.dbf' SIZE  
500M EXTENT MANAGEMENT LOCAL AUTOALLOCATE;
```

5.3 Create the OWBSYS Schema

Create the OWBSYS schema in the database.

Note: Running this script also creates the user OWBSYS_AUDIT. Oracle LSH does not use this account and you do not need to unlock it.

1. Log on to the computer where Oracle LSH is installed.
2. Change directories to <OWB_HOME>/owb/UnifiedRepos.
3. Log in to SQL*Plus as a database user with SYSDBA privileges.
4. Run the following script to create the OWBSYS schema:

```
@cat_owb.sql
```

This script creates and locks the user OWBSYS.

5. Enter the following command to unlock the OWBSYS user:

```
alter user owbsys account unlock
```

Note: Oracle recommends changing the default password for this account. You will need the password later.

5.4 Point to the 11gR2 Oracle Home

1. Log in to SQL*Plus as the OWBSYS user.
2. Reset the OWB Home to the new 11gR2 OWB Home:

```
@reset_owbcc_home;
```

At the prompt, enter the full path of the 11gR2 Oracle Home. If you are installing in a Windows environment, be sure to match the case of the path exactly, including the drive letter.

5.5 Create New OWB Workspace for CDR_RTREPOS

To create a new OWB Workspace for the existing user (CDR_RTREPOS):

1. Change directory to <OWB_HOME>/owb/bin/unix.
2. Run the script reposinst.sh to launch the Repository Assistant.
3. Follow instructions on screen. Enter the database connection information and click **Next**.
4. In the Choose Operation screen, select **Manage Warehouse Builder workspaces** and click **Next**.
5. In the Choose Workspace Operations screen, select **Create a new Warehouse Builder Workspace** and click **Next**.
6. In the New or Existing User screen, select **Create a workspace with a new user as workspace owner** and click **Next**.
7. In the DBA Information screen, in the **User Name** field enter `system`. In the **Password** field enter the password you created for the system account and click **Next**.
8. In the Workspace Owner (New) screen:
 - Enter CDR_RTREPOS in the Workspace Owner's User Name field.
 - Enter a password for the CDR_RTREPOS account and confirm the password.
 - Enter CDR_RTREPOS in the Workspace Name field and click **Next**.
9. In the OWBSYS Information screen, enter the password you created for the OWBSYS account and click **Next**.
10. In the Select Tablespaces screen, accept the default OWBSYS tablespaces by clicking **Next**.
11. In the Select Languages screen, accept the default setting American English by clicking **Next**.
12. Skip the optional Workspace Users by clicking **Next**.
13. In the Summary screen, click **Finish**.

5.6 Set Up Your Environment

After you install Oracle LSH itself you must set up your environment so that it is possible to integrate Oracle LSH with OWB. This process is covered in [Section 7.5.1, "Set Up Your Environment."](#)

5.7 (Optional) Install Oracle Warehouse Builder 10.2.0.1

If you are using Oracle Discoverer to create data visualizations, you must install the standalone version of Oracle Warehouse Builder 10.2.0.1. This software is included on the Oracle LSH media pack.

Note: Only the software is required; do not install the 10.2.0.1 repository.

This older version of OWB is required because the newer version is now delivered as part of the database and no longer includes the middle tier components used by Oracle Discoverer.

Installing Oracle Thesaurus Management System

This section includes the following topics:

- [Section 6.1, "Set Up a Windows Computer for Launching the TMS Installation"](#)
- [Section 6.2, "Setting up the SQL*Net Connections for Existing Databases"](#)
- [Section 6.3, "Install the TMS Server"](#)
- [Section 6.4, "Install the TMS Database"](#)
- [Section 6.5, "Apply TMS Patch"](#)
- [Section 6.6, "Check the def_instance_name Column Value"](#)

The Oracle Life Sciences Data Hub (Oracle LSH) uses the Oracle Thesaurus Management System (TMS) Release 4.6.1 database tier internally for its classification system.

Users who will run Oracle LSH APIs that insert, delete, or modify Oracle LSH classification hierarchies and terms (LSH Classification Admin tasks) need security access for their Oracle LSH database account to the Oracle Thesaurus Management System (TMS) instance that is installed as part of Oracle LSH. See "Creating Database Accounts" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for further information.

Note: If you have installed RAC and you have Load Balancing and Failover enabled, the database connection may change from one node to another on the server side. To avoid this problem, shut down all but one database node for the duration of the TMS installation.

6.1 Set Up a Windows Computer for Launching the TMS Installation

Oracle LSH uses only the database portion of TMS, which you must install into the Oracle LSH database. However, you must install TMS using the Oracle Universal Installer from a Windows computer. You will not need this computer to run Oracle LSH, but you should maintain it for the purpose of applying any patches to TMS that may be required in the future.

The Windows computer should have Windows 2003 or 2008. See My Oracle Support document 333701.1, *Oracle Life Sciences Applications Windows 2003 Support Notice*.

The Windows computer must have a 11g Client Oracle Home. When you install almost any Oracle product, you establish an Oracle Home and SQL*Plus. If you

already have a Windows computer with an Oracle Home directory and SQL*Plus at Release 11g, you can proceed directly to [Section 6.3](#).

If not, install the Oracle Database 11g Release 1 Client for Microsoft Windows, which is included in the media pack in both:

- B43982-01 for Windows 2003 Server
- V15836-01 for Windows 2008 Server

6.2 Setting up the SQL*Net Connections for Existing Databases

Ensure that SQL*Net connections exist between the TMS Application Server computer and any Oracle LSH databases you have already created by modifying the file `tnsnames.ora` to include entries for all the databases and TMS Application Servers. The `tnsnames.ora` file for the 11g Client Oracle Home is located at `oracle_home\network\admin`.

Network Troubleshooting

If the system returns a connection error, you must resolve this problem before continuing. Possible causes of error include:

- The computer is not physically connected to the network.
- The network protocol software is not loaded on the computer (try a remote log-in to check).
- The SQL*Net software is not loaded on the computer.
- The database or SQL*Net listener process is not started on the server.
- An incorrect connect string, userid or password, was entered.
- The `tnsnames.ora` file is not present in the correct directory or does not contain the correct entries.

6.3 Install the TMS Server

Follow instructions in the *TMS Release 4.6.1 Installation Guide* sections specified below with the Oracle LSH specification noted. Download the most recent version of this document from My Oracle Support as document 859752.1; see "[Finding Information and Patches on My Oracle Support](#)" on page xiii.

1. Install the Oracle TMS Release 4.6.1 Server; see Section 4.5, *Installing the TMS Database Server Code*.

Specify the `$ORACLE_HOME` you created in [Section 6.1, "Set Up a Windows Computer for Launching the TMS Installation"](#) (or the most recent Oracle Home, if you are using an existing Oracle Home).

2. At the end of the installation, click **Exit** (not Next Install).

Note: Do not follow the instructions in the other sections of this chapter.

6.4 Install the TMS Database

Install the TMS database wherever you have installed the Oracle LSH database. To install the TMS database, do the following:

1. On the Windows server add the environment variable USE_DEFAULT_OUI_OH with a value of 1.
2. Add an initialization parameter db_domain to the database with a value of *your_company_name.com*.

Note: To integrate TMS with Oracle LSH, the database short global name must be the same as the Oracle SID. If they are not the same, you must change the short global name to match the Oracle SID.

For example, if the Oracle SID is LSHX2R10, the short global name must also be set to LSHX2R10.

Note: You must also add the database's tnsname (which is the same as its Oracle SID) to the tnsnames.ora file on the current server.

3. Install the Oracle TMS 4.6.1 database; in the *TMS Release 4.6.1 Installation Guide* follow instructions the following sections only.
 - Section 5.1.1.4 Setting Initialization Parameters
 - Section 5.2 Installing TMS Database Objects

Note: You are prompted to enter passwords for various accounts. Make a note of these passwords.

If you are installing on Linux, follow the UNIX-specific instructions where they are provided.

6.5 Apply TMS Patch

Apply TMS patch 4.6.1.7 (patch number 9728948) using instructions in the release notes.

6.6 Check the def_instance_name Column Value

Check the value of the def_instance_name column in the tms_def_instances table. It must have a value in all UPPERCASE in the form of *DB_NAME.DOMAINNAME*.

If necessary, in SQL*Plus, enter the following:

```
update tms_def_instances set def_instance_name='DB_NAME.DOMAIN_NAME'
```

For example, where the database name is **LSHX2R10** and the domain name is **us.oracle.com**:

```
update tms_def_instances set def_instance_name='LSHX2R10.US.ORACLE.COM'
```

Installing the Oracle Life Sciences Data Hub

This section includes the following topics:

- [Section 7.1, "Install the AD Splicer"](#)
- [Section 7.2, "Install Oracle LSH Release 2.1.4"](#)
- [Section 7.3, "Install Online Help"](#)
- [Section 7.4, "Grant Execute Privileges to the APPS Schema"](#)
- [Section 7.5, "Integrate Oracle LSH with the Oracle Warehouse Builder"](#)
- [Section 7.6, "Create System Administrator and Security Administrator Users"](#)
- [Section 7.7, "Run Script"](#)
- [Section 7.8, "Run the Post-Installation Programs"](#)
- [Section 7.9, "Schedule the Context Index Refresh Program"](#)
- [Section 7.10, "Start Journaling Internal Tables"](#)
- [Section 7.11, "Increase Memory Available for MetaData Reports"](#)
- [Section 7.12, "Grant Security Rights to Seeded Adapters"](#)
- [Section 7.13, "Set Up the Notification Mailer"](#)
- [Section 7.14, "Set Up the Distributed Processing Server"](#)
- [Section 7.15, "Set Up Client Computers"](#)

Note: \$APPL_TOP, \$CDR_TOP, and \$JAVA_TOP are all on the middle tier. <OWB_HOME> is on the database server. The DP Server Home directory is located on the DP Server. These may all be physically located on the same computer or they may be located on different computers, depending on your installation.

These instructions include copying files from one of these directories to another. Remember that you need to use FTP if they are on different computers.

Note: During its initial development, the Oracle Life Sciences Data Hub (Oracle LSH) was known as CDR. Therefore many Oracle LSH-related directories, files, scripts, parameters, and so on are named CDR or contain the string `cdr`. Please think of CDR as a synonym for Oracle LSH as you go through the installation process.

7.1 Install the AD Splicer

Because Oracle LSH is off-cycle from the rest of Oracle Applications, you must use the Applications DBA (AD) Splicer. You must apply the AD Splicer patch before you apply the Oracle LSH patch.

7.1.1 Check for the APPS_TS_TOOLS Tablespace

You must have a database tablespace named APPS_TS_TOOLS to contain the AD Splicer. This tablespace may have been created when you installed the Oracle Applications RUP7 patch. Before proceeding to the next step, check that this tablespace exists in your database:

```
select * from dba_tablespaces where tablespace_name='APPS_TS_
TOOLS'
```

7.1.2 Apply the AD Splicer Patch

The AD Splicer patch (4042214) is on the Oracle LSH media pack. Follow instructions in the readme file on how to splice Oracle LSH into your Oracle Applications instance.

For information on the AD Splicer utility, see the section on the AD Splicer in *Oracle Applications Maintenance Utilities Release 11i* (11.5.10.2); part number B19300-01. This document is on the media pack.

7.2 Install Oracle LSH Release 2.1.4

You must install the Oracle Life Sciences Data Hub Release 2.1.4 as a patch to Oracle Applications using AutoPatch. The patch, number **9781821**, is on the media pack.

1. Unzip the patch to \$APPL_TOP/patches.
2. Run AutoPatch. See "[How to Use AutoPatch](#)" on page xv for instructions.

7.3 Install Online Help

Install online help patch **9536793** to be able to access context-sensitive online help from Oracle LSH and HTML versions of the *Oracle Life Sciences Data Hub System Administrator's Guide*, *Oracle Life Sciences Data Hub Implementation Guide*, *Oracle Life Sciences Data Hub Application Developer's Guide* and the *Oracle Life Sciences Data Hub User's Guide* from the online help.

The patch includes documentation of all Oracle Applications products. The *Oracle Applications System Administrator's Guide* is available under the Applied Technology node of the online help navigation tree.

Install the patch using AutoPatch. See "[How to Use AutoPatch](#)" on page xv for instructions.

7.4 Grant Execute Privileges to the APPS Schema

In SQL*Plus, grant privileges to the apps schema as follows:

```
grant execute any procedure to apps;
```

7.5 Integrate Oracle LSH with the Oracle Warehouse Builder

After you have installed both the Oracle Warehouse Builder (OWB) and the Oracle Life Sciences Data Hub (Oracle LSH), do the following:

Note: Follow these instructions only when you first install Oracle LSH with OWB. Do not follow these instructions more than once because it may do harm. If you need to apply a patch later, follow instructions in [Appendix B, "Patching the OWB Service"](#).

- [Section 7.5.1, "Set Up Your Environment"](#)
- [Section 7.5.2, "Create Directories and Copy Files"](#)
- [Section 7.5.3, "Disable Application Server Authentication"](#)
- [Section 7.5.4, "Edit run_service.sh"](#)
- [Section 7.5.5, "Edit Runtime.properties"](#)
- [Section 7.5.6, "Edit owb.classpath"](#)
- [Section 7.5.7, "Edit Shell Scripts to Match Directory Structure"](#)
- [Section 7.5.8, "Run OWB Shell Scripts"](#)
- [Section 7.5.9, "Stop and Start the OWB Service"](#)
- [Section 7.5.10, "Edit listener_ifile.ora"](#)

7.5.1 Set Up Your Environment

You must set up your environment as follows.

7.5.1.1 Ensure that Oracle SID and Short Global Names Match

The database short global name must be the same as the Oracle SID. If they are not the same, you must change the short global name to match the Oracle SID.

For example, if the Oracle SID is LSHX2R10, the short global name must also be set to LSHX2R10.

7.5.1.2 Edit init.ora

Check the init.ora file and add the following parameters and values if they do not already exist.

Usually located in <ORACLE_HOME>/dbs on the database tier, the file is named *initOracle SID.ora*; for example, *initLSHX2R10.ora* where the database Oracle SID is LSHX2R10.

The required parameters and values are:

Utility File Directory The first value of the parameter `utl_file_dir` must match the value of the Oracle Applications variable `$APPLPTMP`. Otherwise the post-installation program will fail. For instructions on reading and modifying Oracle Applications variables, see [Section 3.3, "Increase JVM Memory."](#)

```
oa_var=s_applptmp
```

Global Names If you plan to set up a database link to one or more databases with a name different from the current database, set the Global Names parameter to FALSE

both in the current Oracle LSH database and in each database to which you create a link from Oracle LSH.

```
global_names=FALSE
```

Job Queue Processes This parameter value determines the number of job queue processes that are started. The default value is 2. Oracle recommends changing this to a minimum value of 10. If you do not have enough job queues started, OWB processes may not be able to start. However, too many job queues use resources unnecessarily.

```
job_queue_processes = 10
```

Local Listener Set as follows:

```
local_listener=" (ADDRESS= (PROTOCOL=TCP)HOST=hostname.domain) (PORT=db_port) "
```

For example:

```
local_listener=" (ADDRESS= (PROTOCOL=TCP) (HOST=apx208rt.us.oracle.com) (PORT=4321)) "
```

where the hostname is apx208rt, the domain is us.oracle.com, and the port is 4321.

Service Names Set as follows:

```
service_names=Oracle_SID, Oracle_SID.domain
```

For example:

```
service_names=LSHX2R10, LSHX2R10.us.oracle.com
```

where the Oracle SID is LSHX2R10 and the domain is us.oracle.com

Time Manager The Time Manager process is required to move deferred messages from WAIT state to READY state when the message has passed its delay time. Set the `aq_tm_processes` parameter to 1 to enable the Time Manager process.

```
aq_tm_processes = 1
```

7.5.1.3 Restart the Database and Listener

If you changed the value for the any parameter in the `init.ora` file, you must stop and start both the database and the listener for the changes to take effect.

7.5.1.4 Test Database Connectivity

Set up the environment so that you can connect to the database using SQL*Plus for the Oracle SID. This requires having values set for the following two variables in the environment:

- ORACLE_SID
- ORACLE_HOME

7.5.2 Create Directories and Copy Files

Create directories for Oracle LSH in the OWB home directory and copy files into them.

1. Go to the `<OWB_HOME>` directory.
2. Create a directory under `<OWB_HOME>` called `cdr` and run `chmod 755` to grant access permissions.
3. Copy files into the `<OWB_HOME>/cdr` directory as follows:

- From \$FND_TOP/secure copy the **.dbc** Oracle Applications database connection file.
 - From \$CDR_TOP/jar copy **cdr_owb_jars.zip**. This zip file contains the Oracle LSH/OWB integration jar files.
 - From \$CDR_TOP/admin/template copy **installOwbOperator.sh** and **installOwbAdapter.sh** and **installOwbBIPAdapter.sh**. These shell scripts integrate Oracle LSH adapters and operators with OWB.
4. Using a zip utility, unzip **cdr_owb_jars.zip** to extract the following files:
 - cdr_owb_operators.jar
 - cdr_owb_adapters.jar
 - cdr_owb_bip_adapters.jar
 5. Create a directory under <OWB_HOME>/cdr called **appslibs**.
 6. Copy the following files into <OWB_HOME>/cdr/appslibs from \$JAVA_TOP/oracle/apps/fnd/jar:
 - fndsec.jar
 - fndaolj.jar
 - fndcct.jar

7.5.3 Disable Application Server Authentication

By default when 11.5.10 CU2 is installed, the application security authentication is set to ON. To enable OWB to find the jdbc connection from the dbc file during Business Area installation, set this to OFF by doing the following:

1. Open your Oracle LSH URL and log in as sysadmin.
2. Click **System Administration** in the left-hand column under Navigator. The system refreshes the page and adds a column of links on the right.
3. Under **Oracle Applications Manager** in the right-hand column, click **Dashboard**. The Applications Dashboard screen opens.
4. Click **Sitemap** to go to the Sitemap tab.
5. Under **System Configuration**, click **AutoConfig**. The AutoConfig screen opens.
6. Under **Context Files**, click the **Edit Parameters** icon for the Application Tier. The Context File Parameters screen opens.
7. From the **Search** drop-down list, select **OA_VAR** and click **Go**.
8. In the field next to the Search drop-down list, enter the parameter name `s_appserverid_authentication` and click **Go**.
9. In the **Value** field for `s_appserverid_authentication`, change the value to **OFF**.
10. Run AutoConfig. See My Oracle Support document number 165195.1, *Using AutoConfig to Manage System Configurations with Oracle Applications 11i*.
11. Stop and start the Apache server for the new value to take effect.

7.5.4 Edit run_service.sh

Edit the **run_service.sh** file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/unix
2. Back up the `run_service.sh` as `run_service.sh.orig`
3. Open `run_service.sh`.
4. Find the command starting with: `$JAVAPATH/bin/java`
5. Modify this command by adding the `DBC_LOCATION` environment variable using the `-D` command line option. Enter the following string before the first existing `-D` parameter in the command:

```
-DDBC_LOCATION="{OWB_HOME}/cdr/DBC_file_name.dbc"
```

For example:

```
$JAVAPATH/bin/java -Xmx768M -DDBC_LOCATION="{OWB_HOME}/cdr/XYZ.dbc" -D...
```

where `XYZ.dbc` is the DBC file name.

In addition, ONLY if you are installing on an HP-UX PA-RISC (32-bit) system, change the following line for the HP-UX platform (as per My Oracle Support document 286656.1, *Error Resource File Dcesqres Library Not Found When Creating An apps-mode EUL Using eul api*):

```
LD_LIBRARY_PATH=${ORACLE_HOME}/lib
```

to:

```
LD_LIBRARY_PATH=${ORACLE_HOME}/lib32
```

7.5.5 Edit Runtime.properties

This step does two things:

- **Character Semantics Profile.** This step enables OWB to read the setting of the profile LSH: Use Character Semantics for Workarea Installation. You can then set that profile to select whether to use byte or character semantics during Work Area installation. The default setting is **byte**. If your data includes special characters, Oracle recommends using character semantics to help ensure that Oracle LSH stores and displays the characters correctly. See the *Oracle Life Sciences Data Hub System Administrator's Guide* for more information and instructions for setting the profile.
- **OWB 10g and 11g Integration.** This step tells OWB 11g, which runs internal Oracle LSH processes, where to find OWB 10g, which is required for Oracle Discoverer-related processes.

Edit the `Runtime.properties` file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/admin.
2. Edit `Runtime.properties` by adding the following lines at the end:

```
connection.init_session=apps.cdr_owb_session_setup
property.RuntimePlatform.0.DISCO_HOME= full_path_of_owb_10g_home
```

7.5.6 Edit owb.classpath

Edit the `owb.classpath` file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/admin.

2. Back up the **owb.classpath** as **owb.classpath.orig**
3. Edit **owb.classpath**. After the section on "OWB external jars" add the following lines:

```
$OWB_HOME/cdr/cdr_owb_operators.jar
$OWB_HOME/cdr/cdr_owb_adapters.jar
$OWB_HOME/cdr/appslibs/fndsec.jar
$OWB_HOME/cdr/appslibs/fndaolj.jar
$OWB_HOME/cdr/appslibs/fndcct.jar
```

If you are using or plan to use Oracle Business Intelligence Publisher, add the following lines as well:

```
$OWB_HOME/cdr/cdr_owb_bip_adapters.jar
$OWB_HOME/owb/lib/int/rtpcommon.jar
$OWB_HOME/owb/lib/int/rtpplatform.jar
$OWB_HOME/lib/xmlparserv2.jar
$OWB_HOME/lib/activation.jar
$OWB_HOME/lib/mail.jar
$OWB_HOME/oc4j/j2ee/home/lib/http_client.jar
$OWB_HOME/jdev/lib/jdev-rt.jar
$JAVA_HOME/oracle/apps/fnd/3rdparty/bc4jdomorcl.jar
```

Note: If your database and application servers are installed on different machines, you must copy this file from the application server to the \$OWB_HOME/cdr/appslibs directory on the database server and include the new path instead of the line above:

```
$OWB_HOME/cdr/appslibs/bc4jdomorcl.jar
```

In addition, for use with Oracle Business Intelligence Publisher, add the physical path for the Oracle Home:

```
ORACLE_HOME_VALUE/oc4j/webservices/lib/soap.jar
```

7.5.7 Edit Shell Scripts to Match Directory Structure

Before you run the shell scripts, edit the following values in each script to reflect your environment values:

- DB_HOST
- DB_PORT
- DB_SERVICE_NAME
- DB_SID
- OWB_HOME
- Make sure that the <OWB_HOME> directory is set up the same way as in the file pathnames in the files `installOwbOperator.sh` and `installOwbAdapter.sh`; see [Section 7.5.8, "Run OWB Shell Scripts"](#).

7.5.8 Run OWB Shell Scripts

To run the scripts:

1. Change directory to <OWB_HOME>/cdr.
2. Install the adapters by running the following scripts. The third script is required only if you are using the Oracle Business Intelligence Publisher (BIP) adapter (required for creating BIP Programs).

```
./installOwbOperator.sh
```

```
./installOwbAdapter.sh
```

```
./installOwbBIPAdapter.sh
```

No Java exceptions should occur.

Note: If you run **installOwbOperator.sh** more than once, you receive a unique constraint violation error. You can safely ignore this message.

The system creates a log file for each script in <OWB_HOME>/cdr called **installOwbOperator.log** and **installOwbAdapter.log**. The log files spool out the actual Java statement that the shell script sets up.

7.5.9 Stop and Start the OWB Service

You must stop and start the OWB service. You will need the password you created for the OWBSYS account; see [Chapter 5, "Patching Oracle Warehouse Builder."](#)

7.5.9.1 Stop the OWB Service

To stop the OWB service do the following:

1. Change directory to \$ORACLE_HOME/owb/rtp/sql
2. Log into SQL*Plus as OWBSYS.
3. At the SQL prompt, enter:

```
@stop_service.sql
```

When the system displays the words "Not Available" the service is stopped.

7.5.9.2 Starting the OWB Service

To start the OWB service do the following:

1. Change directory to \$ORACLE_HOME/owb/rtp/sql
2. Log into SQL*Plus as OWBSYS.
3. At the SQL prompt, enter:

```
@start_service.sql
```

When the system displays the word "Available" the service has been restarted.

7.5.10 Edit listener_ifile.ora

If you have not already done so, configure the database listener to allow OWB to communicate with the database by editing your listener_ifile.ora file; see [Section 4.6, "Edit listener_ifile.ora"](#).

7.6 Create System Administrator and Security Administrator Users

You must create Oracle LSH user accounts for one or more users and give them the roles required to perform Oracle LSH setup tasks:

- The **LSH System Administrator** can run the post-installation job and define service locations and services in the LSH user interface (see [Section 7.8, "Run the Post-Installation Programs"](#) and [Section 7.14.5, "Define Service Locations and Services"](#)).
- The **LSH Security Administrator** assigns other special security administrator roles (Adapter Security Administrator, Classification Administrator, Data Blind Administrator, Bootstrap Administrator, User Group Administrator) to other users and sets up the object security system (defines object subtypes, roles, and user groups).

The *Oracle Life Sciences Data Hub System Administrator's Guide* includes instructions for these and other security-related tasks. The *Oracle Life Sciences Data Hub Implementation Guide* includes information on designing an object security system for your organization.

7.6.1 Log on as sysadmin

To log on, do the following:

1. Open your web browser.
2. Enter the eBusiness Suite SSWA (Self-Service Web Application) URL as follows:

http://<host name>.<domain name>:<HTTP port>/oa_servlets/AppsLogin

For example:

http://oraapps1.oracle.com:8000/oa_servlets/AppsLogin

The Applications Login screen appears.

3. Log in as sysadmin.

An E-Business Suite screen opens.

7.6.2 Create a User Account for the Administrator

You must create a user account for each person to whom you want to assign the LSH Security Administrator or LSH System Administrator role. Oracle LSH uses the standard Oracle Applications UMX interface for creating user accounts.

Note: For complete information, see the *Oracle Applications System Administrator's Guide—Security*, Oracle Part Number B13923-02. The book is included on the media pack.

1. Select **User Management** by clicking on it in the Navigator (near the bottom of the list on the left). New links appear in the second column, including **Users**.

2. Click **Users** under User Management. The User Maintenance screen appears.
3. From the **Register** drop-down list, select **External Organization Contact** and click **Go**. The Register Business Contact screen appears.
4. Enter values in the following fields:
 - **Email Address.** Enter the user's email address. Oracle LSH uses this address for corresponding with the user.
 - **Name Fields.** Type the name of the user in the fields. The First Name and the Last Name are mandatory. Prefix, Middle Name and Suffix are optional.
 - **Organization.** If you have a multiorganizational setup, enter or search for the Organization the user belongs to.
 - **Phone Number.** The telephone contact details for the user.
 - **Extension.** The extension of the provided telephone number of the user.
 - **Account Information.** Select **Generate Automatically** for Oracle LSH to generate and email the password. Or select **Enter Manually** and type and confirm the password.
5. Click **Submit**. The Confirmation screen appears.
6. Click **OK**. Oracle LSH creates the user account and returns to the User Management screen.

7.6.3 Assign a Role

Assign administrator roles as follows:

- **LSH System Admin.** You must assign the LSH System Admin role to at least one user.
- **LSH Setup Admin.** You must assign the LSH Setup Admin responsibility to at least one user.
- **LSH Adapter Security Admin.** You must assign the LSH Adapter Security Admin role to at least one user.
- **LSH Data Security Admin.** This role allows a user to create all the objects required by the Oracle LSH object security system: object subtypes, object roles, and user groups.
- **LSH Function Security Admin.** This role allows a user to create user accounts and assign functional roles to them. Functional roles control which parts of the Oracle LSH user interface a user can view or allow special privileges.
- **LSH Security Administrator.** This role is a combination of the LSH Data Security and Functional Security Admin roles.

Note: For further information on Oracle LSH security and security roles, see "Setting Up the Security System" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

To assign a functional role to a user:

1. Go to the User Maintenance screen.

If you are already in the User Management tab, click the Users subtab.

Or log in as sysadmin, click the **User Management** responsibility in the navigator, click **Users**, and click the Users subtab.

2. Search for the user to whom you want to assign roles. The system displays the search results in the lower portion of the screen.
3. Click the Update icon corresponding to the user. The Update User screen appears.
4. Click **Assign Roles**. The Search and Select screen appears.
5. Search for all Oracle LSH predefined roles by selecting Search By **Roles and Responsibilities**, entering LSH%, and clicking **Go**. The system displays all the predefined Oracle LSH functional roles in the lower part of the screen.
6. Select each role you want to assign by checking its box. See [Section 7.6.3, "Assign a Role"](#) for further information.
7. Click **Select**. The system displays additional fields. Enter values as follows:
 - **Justification**. You must enter text in this field. Describe the reason this person needs this role.
 - **Active From**. The system automatically enters the current date. If you prefer to have the user's privileges begin at a later date, you can select the date you want by clicking the calendar icon.
 - **Active To**. Leave this field blank to avoid having the user's privileges automatically expire on the date you specify. When the user leaves the company or changes roles, you can enter an expiration date here. If you want to set an end date for the user's privileges associated with this role, use the calendar icon to specify the end date.
8. Click **Apply**. The system assigns the role(s) you specified plus any necessary base roles to the user.

7.7 Run Script

Run the following script to add the apps user to the CDR_RTREPOS OWB workspace.

1. Log in to the database as CDR_RTREPOS.
2. Run the script `$CDR_TOP/patch/115/sql/cdrowbaddappstows.sql`

7.8 Run the Post-Installation Programs

You must run the Oracle LSH LOB Loader and post-installation concurrent programs.

Note: If you are using RAC, shut down all but one database node before running the post-installation programs. If you leave more than one node up, the jobs may run successfully but you may get OWB errors.

7.8.1 Check That OWB Is Running Without Errors

You must have OWB running to run the post-installation programs; see [Section 7.5.9, "Stop and Start the OWB Service."](#) If OWB is not running when you run the LOB Loader and Post-Installation programs, some required objects may not be created and you cannot create them by rerunning the programs after restarting OWB.

To check that the OWB service is running do the following:

1. Change directory to `$ORACLE_HOME/owb/rtp/sql`
2. Log into SQL*Plus as OWBSYS.
3. At the SQL prompt, enter:
`@show_service.sql`

The system displays the word "Available" if service is running.

To check that the OWB service is running without errors do the following:

1. If necessary, change directory to `$ORACLE_HOME/owb/rtp/sql` and log into SQL*Plus as OWBSYS.
2. At the SQL prompt, enter:
`@service_doctor.sql`

The system returns a series of statements. Read them to see if any error conditions are reported. Resolve any errors.

7.8.2 Log On to Oracle Applications

To run the jobs, you must log on to Oracle Applications as an Oracle LSH user with the following roles:

- LSH Setup Admin
 - LSH Adapter Security Admin
1. Open your Web browser.
 2. Enter the eBusiness Suite SSWA (Self-Service Web Application) URL as follows:
`http://<host name>.<domain name>:<HTTP port>/oa_servlets/AppsLogin`
For example:
`http://oraapps1.oracle.com:8000/oa_servlets/AppsLogin`
The Applications Login screen appears.
 3. Log in as a user with LSH Setup Admin and LSH Adapter Security Admin privileges. An Oracle LSH page opens. Click **Home** from the links on the top right corner of the page to reach the Oracle Applications Home Page.
 4. Select the **LSH Setup Admin** Responsibility by clicking on it. **Lookups** appears in the second column.
 5. Click **Lookups**. (If necessary, click **Grant This Session** or **Grant Always**.) The Oracle Life Sciences Data Hub Lookups window opens.
 6. From the **View** menu, select **Requests**.

7.8.3 Load the Adapter Files

Oracle LSH includes predefined adapters that control the interaction between Oracle LSH and other systems. The Oracle LSH LOB Loader concurrent program finds all the adapter SQL files and loads them into a table in Oracle LSH.

To run the Oracle LSH LOB Loader:

1. Follow steps in [Section 7.8.2, "Log On to Oracle Applications."](#)
2. Click **Submit a New Request**. The Submit a New Request window opens.
3. Select **Single Request** and click **OK**. The Submit Request window opens.

4. Click the gray LOV button on the right of the **Name** field. The Reports List of Values opens.
5. Select **LSH LOB Loader Concurrent Program** and click **OK**.
6. Click **Submit**. A window pops up with the job ID and asks if you want to submit another request.
7. Click **No**.

To monitor the concurrent program's progress:

1. Click **Find**.
2. Click **Refresh Data** periodically to update the execution phase and status displayed on screen.

When the status is Complete you can view the log file by clicking the **View Log** button.

Note: Always check the log file, because the phase may be Complete and the status Normal and yet the program may not have successfully completed all its tasks.

7.8.4 Run the Post-Installation Program

Note: Read this whole section before you do this step. You must be very careful to **SET ALL PARAMETERS CORRECTLY**. You cannot change some of them after you run the job.

The Oracle LSH post-installation program takes parameter values you enter to configure your Oracle LSH instance and creates accounts and objects that Oracle LSH uses internally:

- Sets the Oracle LSH context from the parameter values you enter (listed below).
- Creates required FND Oracle Applications profiles for the company ID and owning location you specify.
- Creates the Oracle LSH instance domain. This is the parent defined object that contains all the Oracle LSH Domains and other defined objects in your Oracle LSH instance.
- Loads the predefined Oracle LSH object subtypes.
- Creates internal adapters, defined objects that store required Parameters and other elements used by Execution Setups and Oracle LSH Workflows. Oracle LSH uses these adapters as a template in creating required elements of these defined objects.
- Starts and enables the job queue. (Information on explicitly stopping and starting the job queue is available in the "Troubleshooting" chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.)
- Configures a PL/SQL service and three service instances for internal Oracle LSH use. For information on services, see "Setting Up Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.
- Deploys standard process flows to enable the Notifications feature of LSH Workflows.

In addition to the adapter files loaded by the LOB Loader, Oracle LSH's adapters are composed of metadata elements that are Oracle LSH definitional objects. The post-installation job creates and installs these objects as follows:

- For each adapter, the job creates an Adapter Domain, an Adapter Area within the Adapter Domain, and an Adapter Work Area within the Adapter Area. In the case of Oracle Clinical the job creates a single Adapter Domain containing an Adapter Area and Adapter Work Area for each of the specialized Oracle Clinical adapters.
- The job creates a Program and related object definitions in each adapter's Adapter Area and object instances in its Work Area. The job adds the adapter SQL files loaded by the Oracle LSH LOB Loader job to the Source Code definition.
- The job installs each Adapter Work Area, creating a schema dedicated to each adapter. You must assign user groups to each Adapter Area; see "Setting Up Security for Adapters" in the *Oracle Life Sciences Data Hub System Administrator's Guide*. Users in the user groups assigned to an Adapter Area can create and run Load Sets, Data Marts, Programs, or Business Areas based on that adapter.

Note: If you run the Oracle LSH post-installation job more than once, the job upgrades the adapters.

Note: The first value of the parameter `utl_file_dir` of the `init.ora` file must match the middle tier variable `$APPLPTMP`. Otherwise the post-installation program will fail. See [Section 7.5.1.2, "Edit init.ora."](#)

Run the Job To run the Oracle LSH post-installation concurrent process:

1. Click the **Submit a New Request** button either:
 - in the Requests window you used to monitor the Oracle LSH LOB Loader concurrent process
 - after following steps under [Section 7.8.2, "Log On to Oracle Applications"](#)
2. Select **Single Request** and click **OK**. The Submit Request window opens.
3. Click the gray LOV button on the right of the **Name** field. The Reports List of Values opens.
4. Select **LSH: Post Installation Program** and click **OK**. The Parameters pop-up window appears.
5. Enter values for the following Parameters:

Note: Be very careful to set these Parameters correctly. You cannot change some of them after you run the job.

See [Section 7.8.4.1, "If You Must Change a Post-Installation Job Parameter Value"](#) for details.

- **Company ID.** The company ID serves as part of the primary key for all the Oracle LSH objects you define in this instance of Oracle LSH. If your company ever merges with another company and your Oracle LSH data and metadata are merged with the other company's, the company ID distinguishes the objects created in each original company and helps prevent duplicate object primary keys.

In order to ensure that you have a unique number relative to other Oracle LSH customers, Oracle recommends that you use a number assigned to you by Oracle; see [Section 1.1, "Get Your Company ID from Oracle."](#) If you are installing multiple Oracle LSH instances, use a different Company ID for each one.

Note: Be sure to enter the correct company ID. Oracle LSH uses the company ID in the internal ID for every defined object in Oracle LSH. Changing the ID requires manually removing the data in internal tables for all objects created with the original ID.

- **Owning Location.** Enter the name of your Oracle Applications instance.
 - **Object Sequence Start Value.** Enter a single-digit number. The system will end all object IDs with this digit to further distinguish objects created in this Oracle LSH instance.
 - **Database Host Name.** Enter the machine name of the database server instance.
 - **Database Port Number.** Enter the port number of the database server instance.
6. Click **Submit**. A window pops up with the job ID and asks if you want to submit another request.
 7. Note the job ID and click **No**.

Monitor the Process To monitor the concurrent process's progress:

1. Click **Find**. Use the job ID to search for the process.
2. Click **Refresh Data** periodically to update the execution phase and status displayed on screen.
3. When the phase is Complete, click the **View Log**.

Note: Always check the log file, because the phase may be Complete and the status Normal and yet the process may not have successfully completed all its tasks.

Check the log file to make sure it did the following:

- Set the company ID
- Set the owning location
- Recreated the `cdr_object_id_seq` with the start value you provided
- Inserted one record each in the `cdr_namings` and `cdr_naming_versions` tables for the instance domain

Note: The job does the above only the first time it runs.

- Set the profile to check if the post-installation has been run for this site.

7.8.4.1 If You Must Change a Post-Installation Job Parameter Value

To create an adapter, the post-installation job creates objects—including a Work Area and Program—inside an Adapter Area in an Adapter Domain, and installs the Work Area. These objects are created using the post-installation job parameters values that you entered when you ran the job. If you change the values of some of these parameters after running the job, it may cause problems. The problems vary depending on which parameter you change, and are given for each parameter below.

However, you can call the function FND_PROFILE.SAVE in SQL*Plus to change most parameters. This function takes the following parameters. You must enter single quotes around each value.

- **x_name** is the profile name
- **x_value** is the profile value that you want to set
- **x_level_name** is the name of the level at which the value should be set

Note: You must set each value at the Site level. To do this, enter 'Site' for the function parameter x_level_name each time you call the function.

To call FND_PROFILE.SAVE:

1. Log in to SQL*Plus as apps.
2. At the SQL prompt, enter:

```
begin
FND_PROFILE.SAVE ('x_name' 'x_value' 'x_level_name');
end;
/
```

You need a line calling FND_PROFILE.SAVE for each post-installation job parameter you need to change. The function parameter values required to change each post-installation parameter are included below. When you are ready to commit the changes, enter:

```
commit;
```

The details for each post-installation job parameter are:

- **Object ID Sequence.** You cannot change this value.
- **DB Host Name.** If the Oracle LSH database moves to a different machine or the name of the current machine changes, you can call FND_PROFILE.SAVE to change the name. However, changing this value will result in subsequent adapter Work Area installations and upgrades failing when you upgrade to a new version of Oracle LSH. Provide the following function parameter values:

```
FND_PROFILE.SAVE('CDR_DBHOST_NAME', 'New_Host_Name', 'SITE');
```

- **DB Port Number.** If the DB port number changes, you can call FND_PROFILE.SAVE to change it. However, changing this value will result in subsequent adapter Work Area installations and upgrades failing when you upgrade to a new version of Oracle LSH. Provide the following function parameter values:

```
FND_PROFILE.SAVE('CDR_DBPORT_NUM', 'New_Port_Number', 'SITE');
```

- **Owning Location.** There are currently no restrictions in changing this parameter value. Provide the following function parameter values:

```
FND_PROFILE.SAVE('OWNING_LOCATION','New_Owning_Location','SITE');
```

- **Company ID.** Never change the company ID. The company ID is part of the unique key for every object in Oracle LSH, including the adapter objects that were created by running the post-installation job. Changing this value could lead to the system not working in many places, including job execution, the user interface not listing submitted jobs, and more.

7.8.5 Synchronize the OWB Password

You must synchronize the OWB password for the Workflow store using the following steps:

1. Login to the database as OWBSYS.
2. Run `$CDR_TOP/patch/115/sql/cdrowbpwsynch.sql`.
3. Enter the APPS password when prompted by the script.

7.9 Schedule the Context Index Refresh Program

The Oracle LSH Context Index Refresh Program refreshes context server indexes in Oracle LSH and TMS. You must set it up to run regularly so that user-entered metadata is continuously updated and available for use in Oracle LSH.

To schedule the Context Index Refresh Program:

1. Click the **Submit a New Request** button either:
 - in the Requests window you used to monitor the Oracle LSH Post-Installation Program
 - after following steps under [Section 7.8.2, "Log On to Oracle Applications"](#)
2. Select **Single Request** and click **OK**. The Submit Request window opens.
3. Click the gray LOV button on the right of the **Name** field. The Reports List of Values opens.
4. Select **LSH Context Index Refresh Program** and click **OK**.
5. Click **Schedule**. The Schedule pop-up opens.
6. In the Run the Job section, select **Periodically**. Additional fields appear.
7. Schedule the job to run every two minutes by typing the number **2** in the blank field and selecting **Minutes** from the drop-down list in the Run Every line.
8. Click **OK**. A warning message appears stating that selecting a schedule without an end date will result in the request's being resubmitted until cancelled.
9. Click **OK**. The Submit Request screen appears.
10. Click **Submit**.

7.10 Start Journaling Internal Tables

Oracle keeps an audit trail of all data changes in some of its internal metadata tables in shadow journaling tables. However, you must explicitly turn this feature on. Journaling tables help to satisfy regulatory requirements.

7.10.1 Set AuditTrail:Activate Profile to Yes

Set the **AuditTrail:Activate** profile to Yes at the Oracle LSH Application level.

1. Log on as sysadmin; see [Section 7.6.1, "Log on as sysadmin"](#) for details.
2. Click the **System Administrator** responsibility link. A new column of links appears.
3. Under **Profile** in the right-hand column, click **System**.
If you receive a message asking if you want to install an applet, do so.
The **Find System Profile Values** window appears.
4. In the Display section, uncheck **Site** and check **Application**.
5. In the **Application** field, enter %life% to bring up Oracle Life Sciences Data Hub.
6. In the **Profile** field, enter `AuditTrail:Activate` in the **Profile** text box at the bottom of the window.
7. Click **Find**. The system returns you to the **System Profile Values** window with `AuditTrail:Activate` displayed in the **Profile Option Name** column and `Oracle Life Sciences Data Hub` displayed in the **Application** column.
8. Select **Yes** as the value for the column **Application** and click the **Save** icon or save from the File menu (File > Save).

7.10.2 Define the Audit Installation

To start journaling, do the following:

1. Log on as sysadmin; see [Section 7.6.1, "Log on as sysadmin"](#) for details.
2. Click the **System Administrator** responsibility link. A new column of links appears.
3. In the new column of links, scroll down to **Security: Audit Trail**. In this section, click **Install**.

If you receive a message asking if you want to install an applet, do so.

The **Audit Installations** window appears.

4. Click the Search icon (flashlight/torch) in the toolbar. The **Find Audit Installations** pop-up appears.

Note: If the icon is inactive, the wrong window is in focus. If necessary, retrieve the **Audit Installations** window:

1. In the **Navigator - System Administrator** window, **Functions** tab, expand the **Security** node.
2. Expand the **Audit Trail** node.
3. Click **Install**. The **Audit Installations** window appears.

Then click the Search icon in the toolbar.

5. Click in the **Oracle Username** field to display the ellipsis (...), then click the ellipsis to display the list of values. Find and select **CDR**.
6. Click **Find**. The system returns you to the **Audit Installation** window with **CDR** displayed in the **Oracle Username** column

7. Select the **Audit Enabled** checkbox and click **Save**.

7.10.3 Run the Audit Trail Concurrent Program

After you have defined CDR as the audit installation, run the Audit Trail Concurrent Program to enable auditing.

1. From the **View** menu, select **Requests**. The **Find Requests** pop-up appears.
2. Click **Submit a New Request**. The **Submit a New Request** pop-up appears.
3. Select **Single Request** and click **OK**. The **Submit Request** pop-up appears.
4. From the **Name** drop-down list, select **AuditTrail Update Tables** and click **OK**. The system returns you to the **Submit Request** window with **AuditTrail Update Tables** displayed in the **Name** field.
5. Click **Submit**. A window pops up with the Request ID and asks if you want to submit another request.
6. Make a note of the Request ID and click **No**.

Monitor the Job To monitor the job's progress:

1. Click **Find** and use the Request ID to search for the job.
2. Click **Refresh Data** periodically to update the execution phase and status of the job displayed on screen.
3. When the phase is Complete, click the **View Log**. Always check the log file.

The log file contains a record of queries to update the FND tables, creating shadow tables, giving grants, creating triggers and procedures. At the end it should say: Concurrent Request completed successfully or, if the job did not complete successfully, an error message giving the reason for the failure.

7.11 Increase Memory Available for MetaData Reports

To allow predefined Oracle LSH metadata reports to run, you must change the Options setting for each of the concurrent programs that runs a set of reports. In addition, you may want to change the Priorities setting to the highest possible setting for the quickest display of the reports. The short names of the concurrent programs, with the type of reports they run, are:

- CDR_MDATA_DEFN_CP (Definitions reports)
- CDR_MDATA_INST_CP (Instances reports)
- CDR_MDATA_LIBR_CP (Library reports)
- CDR_MDATA_SECU_CP (Security reports)
- CDR_MDATA_WA_CP (Work Area reports)

See the *Oracle Clinical Administrator's Guide* chapter on System Reports for information on the reports.

To change the setting, do the following for each set of reports:

1. Log on as sysadmin; see [Section 7.6.1, "Log on as sysadmin"](#) for details.
2. Click the **System Administrator** responsibility link. A new column of links appears.

3. In the new column of links, scroll down to **Concurrent: Program**. In this section, click **Define**.

If you receive a pop-message asking if you want to install an applet, do so.

The **Concurrent Programs** window appears.

4. Press the F11 key to enter Query mode.
5. In the **Short Name** field, enter the short name of one of the sets of meta-data reports (see list above). For example, enter: CDR_MDATA_DEFN_CP
6. Press Ctrl+F11 to enter the query. The system populates all the fields with the current information for that set of reports.
7. In the **Options** field, enter: -Xmx512M
8. (Optional) In the **Priority** field, enter: 1
1 is the highest possible setting and 100 is the lowest possible setting.
9. From the **File** menu, select **Save**.
10. Repeat the procedure until you have changed the setting(s) for all meta-data report sets.

7.12 Grant Security Rights to Seeded Adapters

In order to ensure that seeded adapters have the security rights they need to call APIs, do the following:

1. Make sure that no LSH session is up and running.
2. Log in to SQL*Plus as apps.
3. Run `$CDR_TOP/patch/115/sql/cdradaptergrants.sql`

7.13 Set Up the Notification Mailer

To enable Oracle LSH to send Notifications to users' email address (as well as their Oracle LSH My Home page) you must set up an email account for the purpose of handling Notification responses and configure the Notification Mailer in the Oracle Workflow user interface. Follow instructions in My Oracle Support document 164871.1, *Configuring the Workflow Notification Mailer in Oracle Applications Manager 11i*.

For information on the Notification Mailer, see the *Oracle Applications System Administrator's Guide - Maintenance*, Release 11i.

7.14 Set Up the Distributed Processing Server

The Distributed Processing (DP) Server is the mechanism Oracle LSH uses to communicate with the external processing engines that run some Oracle LSH jobs.

Install the DP Server on each computer where you have installed an external processing engine (such as SAS) and where you have installed XML Publisher. If you install multiple external processing engines on the same computer, you can install the DP Server once on that computer.

For information about the DP Server, see "Setting Up Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide*. For information on integrating particular external systems with Oracle LSH, see [Chapter 8, "Integrating Other Systems."](#)

Setting up the DP Server includes the following steps. You must do them in the following order:

1. [Section 7.14.1, "Create the Distributed Processing Server User Account"](#)
2. [Section 7.14.2, "Install the Distributed Processing Server"](#)
3. [Section 7.14.3, "Set NLS_LANG to UTF8"](#)
4. [Section 7.14.4, "Copy and Edit Files"](#)
5. [Section 7.14.5, "Define Service Locations and Services"](#)
6. [Section 7.14.6, "Start the DP Server"](#)

7.14.1 Create the Distributed Processing Server User Account

You must run a script to create the Distributed Processing (DP) Server database account `cdr_dpserver` and set its password. You need to use this account to start the DP Server. Information about the Distributed Processing (DP) Server is included in "Setting Up Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

To run the script:

1. Go to `$CDR_TOP/patch/115/sql`
2. Log in to SQL*Plus as apps:
3. Run the script:

```
cdrcreatedpserveruser.sql
```

At the prompt, enter the password you want to use for the `cdr_dpserver` account.

4. Exit from SQL*Plus.

7.14.2 Install the Distributed Processing Server

On each computer where you have installed one or more processing engines for use with Oracle LSH, do the following to install the Oracle LSH Distributed Processing (DP) Server:

1. Create a home directory for the DP Server. It can be located anywhere on the computer where the DP Server resides. Oracle recommends naming it `DPServer_Home`.
2. In the DP Server Home directory, create two subdirectories: **lib** and **log**.
The `lib` directory will hold the jar files the DP Server uses. The `log` directory will hold DP Server log files. Each time you start the DP Server it creates one log file. The DP Server adds log information to that log file each time it runs a job.
3. Change to the `lib` directory.
4. Copy **DPServer.zip** from `$CDR_TOP/jar` to the `lib` directory.
5. Using GNU zip or another utility, unzip the `DPServer.jar` from the zip file into the `lib` directory. This extracts `DPServer.jar`.
6. Copy `aqapi.jar` from `$IAS_ORACLE_HOME/rdbms/jlib` to the DP Server Home `lib` directory. Overwrite the existing `aqapi.jar` file.
7. Copy the following files from the `$JAVA_TOP` directory to the `lib` directory:
 - `xmlparserv2.zip`
 - `nls_charset12.zip`

- jdbc12.zip
8. Copy **jmscommon.jar** from the \$IAS_ORACLE_HOME/rdbms/jlib directory to the lib directory.
 9. Change directories to the DP Server Home directory.
 10. Create a working directory with a meaningful name for each service that will run on this machine. For example, if you will run SAS jobs on this computer, create a directory such as SASWORK. If you will also run Oracle Reports jobs on this computer, create another directory with a name like REPWORK.

Each time one of these engines runs a job, the DP Server creates a directory containing the files required for the job and gives the directory the job ID as a name. When you define services in the Oracle LSH user interface (see [Section 7.14.5, "Define Service Locations and Services"](#)) specify that you want the DP Server to create these job directories in the working directories you have created.

11. Set the TNS alias in the tnsnames.ora file to the global_name of the database server. This is required because the DP server runs jobs, such as SAS programs, that connect to the database server using the global_name.

Note: If you need to set up the DP Server outside the firewall, make sure the computer outside the firewall can connect to the database server inside the firewall. To do this, change a firewall setting to allow external access to the TNS listener port on the database server.

7.14.3 Set NLS_LANG to UTF8

On each Server where you install the DP Server, set the computer's NLS_LANG environment variable to UTF8.

7.14.3.1 Windows

Check and set your NLS_LANG environment variable:

1. Right-click the **My Computer** icon on your desktop, then click **Properties**.
2. Click the **Advanced** tab, then click **Environment Variables**.
3. In **User Variables** and **System Variables**, check if there is a variable named NLS_LANG.
4. If there is an NLS_LANG variable, highlight it and click **Edit**.
5. Set the variable value to UTF8; for example: AMERICAN_AMERICA.UTF8

If you do not have the NLS_LANG environment variable, change your registry settings:

1. Click **Start**, then **Run**.
2. In the Run window, enter `regedit` and click **OK**.
3. Locate one of the following registry key entries:
 - HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE
 - HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\HOME x
where x is the unique number identifying the Oracle home
4. Add a new key named NLS_LANG with a value including UTF8; for example:

```
NLS_LANG=AMERICAN_AMERICA.UTF8
```

7.14.3.2 UNIX

Do the following:

1. Check the environment variable NLS_LANG:

```
echo $NLS_LANG
```

2. Set the environment variable NLS_LANG to UTF8; for example:

```
% setenv NLS_LANG American_America.UTF8
```

7.14.4 Copy and Edit Files

This section contains the following topics:

- [Section 7.14.4.1, "Copy DP Server Files"](#)
- [Section 7.14.4.2, "Edit the DP Server Start Script"](#)
- [Section 7.14.4.3, "Copy RTF Template Files for XML Publisher"](#)
- [Section 7.14.4.4, "Copy and Edit Execution Command Files for Processing Engines"](#)

7.14.4.1 Copy DP Server Files

1. Go to the DP Server home directory you created when you installed the DP Server code.
2. Copy the following files from \$CDR_TOP/admin/template to the DP Server home directory:
 - cdr_apps_dpserver.sh (or cdr_apps_dpserver.cmd for running Windows services such as OBIEE)
 - checkJSapps.sh
 - stopJSapps.sh
 - killproc.sh

Note: Do not copy **killproc.sh** if the DP server is running on a Windows computer, for example, running the OBIEE server.

7.14.4.2 Edit the DP Server Start Script

You must add local values to **cdr_apps_dpserver.sh** (or **cdr_apps_dpserver.cmd** on Windows) before you can start the DP Server.

1. Log in as the owner of the DP Server Home Directory.
2. Go to the DP Server home directory.
3. Edit cdr_apps_dpserver.sh (or cdr_apps_dpserver.cmd). Enter the actual value for each of the following:
 - **\$DPSEVER_HOME**. Enter the full path for the DP Server home on this computer.
 - **SVC**. Enter the Service Location Name (not a Service name) that you defined or will define (see [Section 7.14.5, "Define Service Locations and Services"](#) in the

Service Location subtab for the Service Location that corresponds to this computer. The name is case-sensitive. For example:

```
SVC=JS_OPASUN4
```

- **JDK Location (JDK_LOC).** Enter the full path to the JDK 1.3 or JDK 1.4 executable.

For example:

```
JDK_LOC=/u01/app/oracle/product/JDev9i_9_0_3/j2sdk1_4_1_02/bin
```

- **JVM Arguments.** Add the following line immediately after the Java command (COMMANDLINE=java), which follows the RAC flag setting:

```
-DFile.encoding=UTF8 -Duser.language=en -Duser.country=US
```

You can accept the default values for all other variables.

7.14.4.3 Copy RTF Template Files for XML Publisher

The following steps are required only on the computer where you are running XML Publisher:

1. In the DP Server home directory, create a directory called **cdrtemplates**.
2. Copy the following files from `$CDR_TOP/patch/115/publisher/templates` to the new **cdrtemplates** directory:
 - `cdr_output_summ_cs.rtf`
 - `lsh-title-page.rtf`
 - `lsh-toc-template.rtf`
 - `lsh-pagenum.rtf`
 - `lsh-template.rtf`
 - `lsh-blank-page.pdf`

7.14.4.4 Copy and Edit Execution Command Files for Processing Engines

Do the following on each computer where you have installed a processing engine:

1. From `$CDR_TOP/admin/template`, copy the sample execution command script for each processing engine installed on the computer. You can copy the scripts directly into the DP Server Home directory or create a subdirectory for them.

Note: Keep a record of the absolute location of these scripts. You will need it when you define a service location for the computer; see [Section 7.14.5, "Define Service Locations and Services."](#)

The scripts include:

- **cdrzip-1.sh** for Text Data Marts
- **sasNormal.sh** for SAS Programs
- **oraexp.sh** for Oracle Export Data Marts
- **orareprunner.sh** for Oracle Reports Programs
- **sqlplus** for PL/SQL Programs

- **txtNormal** for Text Load Sets
- **xmlprunner.sh** for post-processing Report Sets
- **xmlpreprunner.sh** for the Oracle LSH system reports and for coversheets for outputs
- **obieeinstall.cmd** for Oracle Business Intelligence Business Areas—required only on the BI Server
- **obieedeploy.cmd** for Oracle Business Intelligence Business Areas— required only on the BI Server
- **obieepsrestart.cmd** for Oracle Business Intelligence Business Areas—required only on computers where a Presentation Service instance is installed but the BI Server is not installed
- **infarunner.sh** for Informatica Programs

Note: For Informatica programs, copy the script `infa.env` to the same location as `infarunner.sh` and edit it to include the location of the Informatica Home and the Informatica executables on the same computer. Refer [Section 8.4.1, "Install Informatica PowerCenter"](#) for details.

- **infa.env** for Informatica Programs. Copy this script to the same location as **infarunner.sh** and edit it to include the location of the Informatica Home and the Informatica executables on the same computer.
 - **obieepsrestart.sh** for Oracle Business Intelligence Business Areas—required only on Unix computers where a Presentation Service instance is installed but the BI Server is not installed.
2. Edit each script with information specific to the computer, for example:
- the Oracle SID
 - the location of the technology server
 - the location of Oracle setup script `coraenv`
 - paths

Ensure that environment variables are accessible to the DP server. For example, if the script refers to the variable `$ORACLE_HOME`, either define the variable or provide the full path in the script.

Note: If you run SAS programs, add instructions to `sasNormal.sh` to start SAS in UTF8 mode; see [Section 8.2.2.2, "Start SAS in UTF8 Mode."](#)

7.14.5 Define Service Locations and Services

You must define Service Locations and Services in the Oracle LSH user interface for each computer where the Oracle LSH Distributed Processing (DP) Server will run. You define one service location for each computer, and at least one service for each engine or development environment that you want to run on that computer.

To define service locations and services you must have a user account with the LSH System Admin role assigned to it; see [Section 7.6, "Create System Administrator and Security Administrator Users."](#)

To log into Oracle LSH, do the following:

1. Open your web browser.
2. Enter the eBusiness Suite SSWA (Self-Service Web Application) URL as follows:
http://<host name>.<domain name>:<HTTP port>/oa_servlets/AppsLogin
For example:
http://oraapps1.oracle.com:8000/oa_servlets/AppsLogin
The Applications Login screen appears.
3. Enter the username and password associated with the LSH System Admin responsibility and click **Login**.
4. Under Navigator, click **Life Sciences Data Hub**. The system displays the list of Oracle LSH user interface locations to which you have access.
5. Click **Service Location**. The Service Location screen opens.

To define service locations and services in the Oracle LSH user interface, follow instructions in "Setting Up Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

7.14.6 Start the DP Server

To start the DP Server, do the following:

1. Log on as the owner of the DP Server Home Directory.
2. Run the script by entering the following command for UNIX:

```
./cdr_apps_dpserver.sh ORACLE_SID DB_HOST DB_PORT RAC_TNS RAC_FLAG
```

or for Windows:

```
c:> cdr_apps_dpserver.cmd ORACLE_SID DB_HOST DB_PORT RAC_TNS RAC_FLAG
```

where:

- *ORACLE_SID* is the Oracle SID of the database

Note: The Oracle SID is case-sensitive.

- *DB_HOST* is the name of the computer where the Oracle_SID resides.
- *DB_PORT* is the SQL*Net Listener port for the Oracle_SID.
- *RAC_TNS* is the JDBC connection string of the database server.
- *RAC_FLAG* indicates whether you are using an Oracle RAC (Real Application Cluster) database installation. Set to RAC if you have a RAC installation. Set to NO-RAC if you do not.

The RAC_FLAG setting determines which input parameter values the script uses when starting the DP Server.

- If RAC_FLAG is set to RAC, the script uses only the value for RAC_TNS.

- If RAC_FLAG is set to NO-RAC, the script uses the values for ORACLE_SID, DB_HOST, and DB_PORT.

In either case, it does not matter what value you enter for the unused parameters.

Example when RAC_FLAG is set to NO-RAC:

```
./cdr_apps_dpserver.sh CDRD6X10 ad986sdb.us.oracle.com 20502 NA NO-RAC
```

where:

- CDRD6X10 is the Oracle SID
- ad986sdb.us.oracle.com is the host
- 20502 is the port
- You may enter NA (Not Applicable) or any other value for RAC_TNS.
- NO-RAC is the setting for RAC_FLAG

Example when RAC_FLAG is set to RAC:

```
./cdr_apps_dpserver.sh NA NA NA 'jdbc:oracle:thin:@(DESCRIPTION=(LOAD_
BALANCE=YES) (FAILOVER=YES) (ADDRESS_
LIST=(ADDRESS=(PROTOCOL=tcp) (HOST=AP6010RAC.us.oracle.com) (PORT=1521)) (ADDRESS=
(PROTOCOL=tcp) (HOST=AP6009RAC.us.oracle.com) (PORT=1521))) (CONNECT_
DATA=(SERVICE_NAME=CDRXXX)))' RAC
```

where:

- You may enter NA (Not Applicable) or any other value for ORACLE_SID.
 - You may enter NA (Not Applicable) or any other value for DB_PORT.
 - You may enter NA (Not Applicable) or any other value for DB_HOST.
 - 'jdbc:oracle:thin:@(DESCRIPTION=(LOAD_BALANCE=YES) (FAILOVER=YES) (ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp) (HOST=AP6010RAC.us.oracle.com) (PORT=1521)) (ADDRESS=(PROTOCOL=tcp) (HOST=AP6009RAC.us.oracle.com) (PORT=1521))) (CONNECT_DATA=(SERVICE_NAME=CDRXXX)))' is the JDBC connection string of the database server
 - RAC is the setting for RAC_FLAG
3. The script prompts you for a password. Enter the password for the cdr_dpserver user.

Note: Do not change the value of DB_USER.

7.15 Set Up Client Computers

There are two types of client setups depending on the role of the Oracle LSH user:

- [Consumers and Administrators](#)
- [Application Developers](#)

For information on supported operating systems and browsers for the client, see My Oracle Support document 180430.1, *Oracle Life Sciences Applications Supported Technology Stacks*.

7.15.1 Consumers and Administrators

Oracle LSH Consumers, who retrieve information in the form of reports and visualizations, and Oracle LSH Administrators, who perform administrative tasks within Oracle LSH, require the following on their personal computers:

- A Web browser (one of those supported by Oracle Applications)
- Java Virtual Machine (JVM)

Consumers require JVM if they are using Oracle Discoverer Plus to create data visualizations. Administrators require either JInitiator or JVM to use any of the Oracle Forms screens related to security, to run the post-installation jobs or to set up user accounts or functional roles.

The first time a user opens one of the Oracle Forms screens or Oracle Discoverer Plus, the user is prompted to download and install JVM if it is not already installed.

Note: If you are currently using JInitiator, you can continue to do so.

7.15.2 Application Developers

An Oracle LSH Application Developer (also called a Definer) writes source code on his or her personal computer in an integrated development environment (IDE) and then uploads the source code file to Oracle LSH.

An Oracle LSH Definer client requires:

- A Web browser (one of those supported by Oracle Applications)
- Java Virtual Machine (JVM)
- Winzip Pro 11.2 SR-1, Winzip 8.1, or any other Winzip version that includes the WZUNZIP.exe
- Oracle LSH client plug-in (see [Section 7.15.2.1, "Install the Client Plug-In"](#))
- NLS_LANG environment variable set to UTF8 (see [Section 7.15.2.2, "Set NLS_LANG to UTF8"](#))
- One or more IDE clients (see [Section 7.15.2.3, "Set Up Development Environments"](#))

7.15.2.1 Install the Client Plug-In

Oracle LSH files contained in **CdrClientInstall.zip** handle the integration of the IDEs with Oracle LSH.

System Administrator Tasks To prepare these files for installation by developers, do the following:

1. Download **CdrClientInstall.zip** from \$CDR_TOP/plugin/sas.
2. Unzip **CdrClientInstall.zip**. One of the files unzipped is **cdrconfig.xml**.
3. (Optional) Edit **cdrconfig.xml** to add a directory path for each IDE developers may use, including the IDEs mentioned in [Chapter 8, "Integrating Other Systems."](#) and any other IDEs that your company is using with Oracle LSH, either by buying a third party adapter or developing your own adapter.
4. Write the unzipped contents of **CdrClientInstall.zip** to a CD-ROM.

5. Give the CD-ROM to each Oracle LSH Definer who will use an IDE, with instructions for where to install the IDE software so that the directory paths you entered in `cdrconfig.xml` are correct.

Note: Alternatively, do not edit `cdrconfig.xml` before writing it to the CD-ROM and tell each Definer to edit his or her own copy.

Oracle LSH Definer Task On each Definer's personal computer, load the CD-ROM that contains the unzipped files. InstallShield automatically runs `setup.exe`, which loads `cdrconfig.xml` and `cdrclient.exe` to a location the Definer specifies on his or her local computer. The default location is `ProgramFilesDir\oracle\cdr` where `ProgramFilesDir` is the registry entry for the value name `ProgramFilesDir`. If the specified location does not exist, the InstallShield creates it.

In addition, it sets the location for the CDR Work directory. By default this location is `%USERPROFILE%/Application Data/CDR`. Oracle recommends using this setting if you are installing the client IDE on a server for access by multiple users. It creates a separate work space for each user so they do not overwrite each other's files.

7.15.2.2 Set NLS_LANG to UTF8

Check and set your NLS_LANG environment variable:

1. Right-click the **My Computer** icon on your desktop, then click **Properties**.
2. Click the **Advanced** tab, then click **Environment Variables**.
3. In **User Variables** and **System Variables**, check if there is a variable named NLS_LANG.
4. If there is an NLS_LANG variable, highlight it and click **Edit**.
5. Set the variable value to UTF8; for example: `AMERICAN_AMERICA.UTF8`

If you do not have the NLS_LANG environment variable, change your registry settings:

1. Click **Start**, then **Run**.
2. In the Run window, enter `regedit` and click **OK**.
3. Locate one of the following registry key entries:
 - `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE`
 - `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\HOME x`
where x is the unique number identifying the Oracle home
4. Add a new key named NLS_LANG with a value including UTF8; for example:
`NLS_LANG=AMERICAN_AMERICA.UTF8`

7.15.2.3 Set Up Development Environments

Oracle LSH supports several integrated development environments (IDEs). For information on configuring these for use with Oracle LSH, see:

- [Section 8.2.4, "Set Up SAS as an Integrated Development Environment"](#)
- [Section 8.4.5, "Set Up Informatica PowerCenter Designer as an Integrated Development Environment \(IDE\)"](#)

- [Section 8.5, "Integrating Oracle SQL Developer or Oracle SQL*Plus with the Oracle Life Sciences Data Hub"](#)
- [Section 8.6.2.3, "Set Up Business Intelligence Publisher Definer Tools"](#)
- [Section 8.6.3.6, "Set Up Oracle Business Intelligence Administration Tool"](#)

Integrating Other Systems

This section contains the following topics:

- [Section 8.1, "Integrating Oracle Clinical with the Oracle Life Sciences Data Hub"](#)
- [Section 8.2, "Integrating SAS with the Oracle Life Sciences Data Hub"](#)
- [Section 8.3, "Installing Oracle Discoverer 10.1.2.3"](#)
- [Section 8.4, "Integrating Informatica with the Oracle Life Sciences Data Hub"](#)
- [Section 8.5, "Integrating Oracle SQL Developer or Oracle SQL*Plus with the Oracle Life Sciences Data Hub"](#)
- [Section 8.6, "Integrating Oracle Business Intelligence with the Oracle Life Sciences Data Hub"](#)

The Oracle Life Sciences Data Hub (Oracle LSH) supports integration with other systems as sources of data, as means of visualizing and reporting on Oracle LSH data, and as processing engines for transforming Oracle LSH data. Oracle LSH handles integration with such systems with adapters custom made for each external system. Adapters for the systems included in this chapter are included with Oracle LSH.

You must install the adapters and grant them security privileges. These tasks are covered in [Section 7.8.3, "Load the Adapter Files"](#) and [Section 7.12, "Grant Security Rights to Seeded Adapters."](#)

Each external system you choose to integrate with Oracle LSH requires installation and some additional setup, described here. The exception is Oracle Reports, which is installed as part of Oracle Applications and requires no further setup.

For information on supported versions of these products, see [Section 2.3, "Integrated External Systems"](#) or for the most current information, see My Oracle Support document 180430.1.

8.1 Integrating Oracle Clinical with the Oracle Life Sciences Data Hub

Oracle LSH 2.1.4 is compatible with the following Oracle Clinical releases:

- Oracle Clinical 4.5.1 with Oracle Clinical patch 4.5.1.14 or its successor, 4.5.1.75
- Oracle Clinical 4.6

Oracle LSH includes a set of adapters custom-designed for the purpose of loading data and metadata from Oracle Clinical into Oracle LSH.

To load data and metadata from Oracle Clinical into Oracle LSH you must do the following:

1. In the Oracle LSH user interface, define a remote location and connection to each Oracle Clinical location from which you want to load data. See "Registering Locations and Connections" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for further information.
2. Define, check in, install, and run one or more Oracle Clinical Load Sets in Oracle LSH. See "Defining Load Sets" in the *Oracle Life Sciences Data Hub Application Developer's Guide* for further information.

You can also use APIs to create Load Sets. These packages are documented in the Oracle Integration Repository at <http://irep.oracle.com>. In addition, see "Using APIs" in the *Oracle Life Sciences Data Hub Application Developer's Guide*.

8.2 Integrating SAS with the Oracle Life Sciences Data Hub

This section includes the following topics:

- [Section 8.2.1, "SAS Compatibility"](#)
- [Section 8.2.2, "Set Up SAS Job Execution"](#)
- [Section 8.2.3, "Set Up Loading Data from SAS"](#)
- [Section 8.2.4, "Set Up SAS as an Integrated Development Environment"](#)

Oracle LSH is designed for close integration with SAS at several levels. You can load SAS data set files into Oracle LSH, use SAS as an integrated development environment to create Oracle LSH Programs with SAS source code, and use the SAS engine to run these Programs on Oracle LSH data.

Oracle LSH supports integration with SAS 8.2, SAS 9.1.3, and SAS 9.2.

8.2.1 SAS Compatibility

SAS with connectivity to Oracle LSH requires an Oracle 9i library. Oracle recommends installing an Oracle 9i Client on the same machine where SAS is installed. To install Oracle LSH and SAS as a processing engine on the same computer you can do the following:

1. Create a 9i Oracle Home by installing the Oracle Client 9i or Discoverer Administrator, for example.
2. Install SAS.
3. Set the UNIX environment variable LD_LIBRARY_PATH to `9i_ORACLE_HOME/lib`.

8.2.2 Set Up SAS Job Execution

To enable running SAS jobs from Oracle LSH, you must integrate the SAS server with Oracle LSH and start the server in UTF8 mode.

8.2.2.1 Integrate the SAS Server with Oracle LSH

Do each of the following:

1. Install SAS Access to Oracle on the SAS server.
2. Install the Oracle LSH Distributed Processing (DP) Server on the computer where the SAS server is installed. See [Section 7.14, "Set Up the Distributed Processing Server."](#)

3. Define a service location in Oracle LSH for the computer where the SAS server is installed. See "Defining Service Locations" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.
4. Define one or more services for the service location. See "Defining Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.

8.2.2.2 Start SAS in UTF8 Mode

To help ensure that Oracle LSH stores and displays special characters in your data correctly, start SAS in UTF8 mode by editing the DP Server execution command file `sasNormal.sh`, which you copied and edited in [Section 7.14.4.4, "Copy and Edit Execution Command Files for Processing Engines"](#).

If you are using SAS 9.2, add lines to `sasNormal.sh` as in the following examples:

- In UNIX:

```
sas -encoding UTF8
```

- In Windows, specify the version of SAS you are using. For example, for SAS 9.2:

```
C:\Program Files\SAS\SASFoundation\9.2\sas.exe" -CONFIG C:\Program
Files\SAS\SASFoundation\9.2\nls\u8\SASV9.CFG"
```

Note: The example above should not contain any line breaks. It is not possible to display it on one line.

If you are using SAS 9.1.3, install SAS with the DBCS option and add lines to `sasNormal.sh` as follows (in UNIX):

```
/user/local/SAS/SAS_9.1/bin/sas_dbcs -encoding UTF-8 $*
```

For further information, see SAS Paper 1036, *Multilingual Computing with the 9.1 SAS Unicode Server* at:

<http://support.sas.com/rnd/papers/sugi28/unicodeserver.pdf>

8.2.3 Set Up Loading Data from SAS

Oracle LSH includes an adapter custom-designed for the purpose of loading data from SAS database into Oracle LSH.

To enable loading data from SAS into Oracle LSH you must do the following:

1. Complete all steps listed in [Section 8.2.2, "Set Up SAS Job Execution"](#) above.
2. Make sure that the LOB Loader Oracle LSH post-installation job has been run; this job creates the SAS adapter. This is a required step in the installation of Oracle LSH; see [Section 7.8.3, "Load the Adapter Files."](#)
3. Make sure that you have followed instructions in [Section 7.12, "Grant Security Rights to Seeded Adapters."](#)
4. Assign at least one user group to the SAS adapter. See "Setting Up Adapters to External Systems" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

8.2.4 Set Up SAS as an Integrated Development Environment

To use SAS as an integrated development environment (IDE) each Definer must do the following on his or her local PC:

- Install SAS in the location specified by the system administrator.
- Install the Oracle LSH client plug-in by inserting the CD-ROM supplied by the system administrator (see [Section 7.15.2.1, "Install the Client Plug-In"](#)).
InstallShield runs **cdrclient.exe**, which loads **cdrconfig.xml** and **cdrclient.exe** either to the default location or to a location the Definer specifies on his or her local computer; see [Section 7.15, "Set Up Client Computers"](#).
- Ensure that **cdrconfig.xml** has the correct directory path for the SAS executable.
- Set the user preference for the SAS connection mode (details below). Instructions are in the "SAS Connection Type" section of the Getting Started chapter of the *Oracle Life Sciences Data Hub User's Guide*.
- Install any software required to support the preferred connection mode (details below).
- Set the NLS_LANG environment variable or registry settings to support UTF8 character encoding; see [Section 8.5.1, "Set the NLS_LANG Environment Variable to UTF8"](#).

SAS Connection Modes SAS can work as an integrated development environment (IDE) in different ways. Each user must set a preference for the way he or she wants to work. Oracle LSH Release 2.1.4 supports the following connection modes:

- **Connected Mode.** The Definer has the SAS client installed on his or her personal computer. When he or she launches SAS as an IDE from an Oracle LSH Program, Oracle LSH downloads views based on the source Table Descriptors defined in the Program. The Definer works locally on the SAS client, using the views to read current data in Oracle LSH. The Definer's SAS program can write to local SAS data sets. When the SAS program is ready, the Definer goes into the Oracle LSH Program and uploads the SAS source code as an Oracle LSH Source Code file.
The client must use the SAS Access to Oracle tool to connect to Oracle LSH.
- **SAS Connected Mode with Work Area Data.** This mode is the same as Connected mode except that it connects to the Work Area schema in the database. From SAS, the user can browse views of current data in all Table instances in the Work Area, not just the Table instances linked to Table Descriptors of the Program.
The client must use the SAS Access to Oracle tool to connect to Oracle LSH.
- **Disconnected Mode.** The Definer has the SAS client installed on his or her personal computer. When the Definer launches SAS as an IDE, Oracle LSH uses the Distributed Processing Server to download the current data in the Table instances mapped to source Table Descriptors in the Program into the Definer's local SAS environment, creating data sets with the same structure as the Oracle LSH Table Descriptors. The Definer's SAS program can read from and write to local SAS data sets. When the SAS program is ready, the Definer goes into the Oracle LSH Program and uploads the SAS source code as an Oracle LSH Source Code file.
No connection other than a network is required to the Oracle LSH Distributed Processing Server.

8.3 Installing Oracle Discoverer 10.1.2.3

Oracle LSH requires Oracle Discoverer 10.1.2.3, which is a more recent version of Oracle Discoverer than is shipped with Oracle Applications. **Do not upgrade the**

version installed with Oracle Applications. Instead, use the standalone version included in the Oracle LSH 2.1.3 media pack.

You can install Oracle Discoverer 10.1.2.3 on one of the application tier nodes or on a separate computer. If you install it on an application tier node, however, it must be installed in a different Oracle Home from the rest of Oracle Applications but access the same database.

Note: Oracle Discoverer 10.1.2.3 requires Oracle Warehouse Builder 10.2.0.1, which is different from the OWB version—11.2.0.1—that is required for Oracle LSH 2.1.4.

To install Oracle Discoverer 10.1.2.3:

1. Follow installation instructions in the *Oracle Business Intelligence Installation Guide* for your operating system. This manual is included in the media pack. You can also download it from Oracle Technology Network:
<http://www.oracle.com/technology/documentation/bi.html>.
2. Follow instructions in these sections of My Oracle Support document 313418.1; to download this document, see "Searching for Knowledge Articles by ID" on page xiv:
 - Section 5, Step 1.4, *Copy Database Connection file*
 - Section 5, Step 1.4, *Update tnsnames.ora file* (yes, both these sections are numbered 1.4 at the time of publication of this document)
 - Section 5, Step 1.5, *Enable access to the Oracle E-Business Suite Release 11i Database*
3. Upgrade to Oracle Discoverer 10.1.2.3 by applying the following patches:
 - 5983622
 - 7111842

Oracle LSH Requirement

Edit `pref.txt` and reapply the preference as follows:

1. In the file `<ORACLE_HOME>/discoverer/util/pref.txt`, set the parameter `QPPObtainCostMethod=0`
2. Run `<ORACLE_HOME>/discoverer/util/applypreferences.sh`
3. Stop and start middle tier services.

8.4 Integrating Informatica with the Oracle Life Sciences Data Hub

This section includes the following topics:

- [Section 8.4.1, "Install Informatica PowerCenter"](#)
- [Section 8.4.2, "Set Up Informatica Job Execution"](#)
- [Section 8.4.3, "Set Up User Accounts"](#)
- [Section 8.4.4, "Create a Remote Location and Connection for the LSHAdmin User"](#)
- [Section 8.4.5, "Set Up Informatica PowerCenter Designer as an Integrated Development Environment \(IDE\)"](#)

You can use Informatica PowerCenter as an integrated development environment (IDE) and processing engine for Oracle LSH Programs of type Informatica. Informatica is required if you are installing Oracle Clinical Development Analytics with Oracle LSH.

Informatica is licensed separately. You must buy it from Informatica and follow installation instructions from Informatica.

8.4.1 Install Informatica PowerCenter

Requirements The following are requirements for using Informatica with Oracle LSH:

- The LSH System Admin user must have administration rights on the Informatica integration services used for Oracle LSH during installation and setup.
- The Informatica repository used for LSH must be used only for LSH or LSH/OCDA.
- When you create the Informatica repository to be used for Oracle LSH, set the following two parameters to False: Versioning and Global Repository.
- Point the following Informatica integration service properties to valid directories on which the operating system account that starts the Informatica integration service has read/write permissions:

```
$PMSessionLogDir  
$PMBadFileDir  
$PMCacheDir  
$PMTargetFileDir  
$PMSourceFileDir  
$PMExtProcDir  
$PMTempDir  
$PMWorkflowLogDir  
$PMLookupFileDir  
$PMStorageDir
```

Tip: Find the Informatica environment file, `infaenv.sh`, which contains information on the locations of your Oracle Home, Informatica Home, and other information about this computer. When you set up the Oracle LSH Distributed Processing Server you will need this information.

To install and patch Informatica PowerCenter.

1. Install Informatica PowerCenter 8.6.1 using Informatica installation documentation.
2. Apply 8.6.1 Hotfix 11.

Note: Oracle LSH 2.1.4 has been tested ONLY with **Informatica PowerCenter 8.6.1 with Hotfix 11**. If more recent releases have become available, do NOT install them unless explicitly instructed to do so by an Oracle LSH-specific note or alert on My Oracle Support.

You can get Hotfix 11 even if it has been superseded by a later version by logging a Service Request with Informatica.

3. Create an environment file `infa.env` under `$INFA_HOME` (Informatica Installation Directory) and set the following environment variables:

```
INFA_HOME=<Informatica Installation Directory>
LANG=C
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:<Informatica Installation
Directory>/server/bin
```

On a Linux platform, add this extra line to the file:

```
unset LD_ASSUME_KERNEL
```

8.4.2 Set Up Informatica Job Execution

To enable running Informatica Programs from Oracle LSH, integrate Informatica PowerCenter with Oracle LSH:

- Install the Oracle LSH Distributed Processing (DP) Server on the computer where the Informatica server is installed. See [Section 7.14, "Set Up the Distributed Processing Server"](#) for instructions.
- Create a symbolic link to the file `impcntl.dtd` and place it in the DP Server's Informatica working directory (for instructions on setting up this directory see [Section 7.14.2, "Install the Distributed Processing Server"](#)). This file is typically located in the `server/bin` directory of the Informatica installation.
- Define a service location in Oracle LSH for the computer where the Informatica server is installed. See "Defining Service Locations" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.
- Define one or more services for the Informatica service type in the service location. See "Defining Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.

8.4.3 Set Up User Accounts

Set up an Informatica administrator account and accounts for each Oracle LSH Definer who needs to work in Informatica, following instructions in the Informatica chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.

Note: The administrator account name must be exactly `LSHAdmin`, including upper- and lowercase as written. For more information on all the required accounts, see the *Oracle Life Sciences Data Hub System Administrator's Guide*.

8.4.4 Create a Remote Location and Connection for the LSHAdmin User

Define a Remote Location and Remote Connection for Informatica, following instructions in the Informatica chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.

8.4.5 Set Up Informatica PowerCenter Designer as an Integrated Development Environment (IDE)

To use Informatica PowerCenter Designer as an IDE for creating mappings and workflows from within Oracle LSH, each Oracle LSH Definer must do the following on his or her local PC:

- Install the Informatica client in the location specified by the system administrator.
- Install the Oracle LSH client plug-in by inserting the CD-ROM supplied by the system administrator (see [Section 7.15.2.1, "Install the Client Plug-In"](#)).
- Ensure that **cdrconfig.xml** has the correct directory path for the Informatica executable.
- Create a system environment variable in Windows with the name **INFA_DOMAINS_FILE** and set its value to the full path of the Informatica Home; that is, the **domains.infa** file; for example: `INFA_DOMAINS_FILE=C:\Informatica\PowerCenter8.1.1\domains.infa`
- Set up a user Data Source Name (DSN) with the name **LSHModel** for the Definer's Oracle LSH database account. See Microsoft Windows online help or documentation on setting up ODBC Data Source Names.
- Install Winzip Pro 11.2 SR-1, Winzip 8.1, or any other Winzip that includes the **WZUNZIP.exe**

8.5 Integrating Oracle SQL Developer or Oracle SQL*Plus with the Oracle Life Sciences Data Hub

To use Oracle SQL Developer or SQL*Plus as an IDE for Oracle LSH PL/SQL Programs, each Definer must do the following on his or her local PC:

- Install Oracle SQL Developer or SQL*Plus in the location specified by the system administrator.
- Install the Oracle LSH client plug-in by inserting the CD-ROM supplied by the system administrator (see [Section 7.15.2.1, "Install the Client Plug-In"](#)).
- Ensure that **cdrconfig.xml** has the correct directory path for the Oracle SQL Developer (or SQL*Plus) executable.

Note: If the Definer has both Oracle SQL Developer and SQL*Plus installed on the local computer, he or she can switch between the two IDEs by changing the executable directory path in **cdrconfig.xml**.

- Start Oracle SQL Developer or SQL*Plus and create a connection to the Oracle LSH database. The username and password for this connection must be those of an Oracle LSH database user account.
- [Set the NLS_LANG Environment Variable to UTF8.](#)

- Install Winzip Pro 11.2 SR-1, Winzip 8.1, or any other Winzip that includes the WZUNZIP.exe

8.5.1 Set the NLS_LANG Environment Variable to UTF8

To set an Oracle client application like SQL*Plus to use the right encoding, you must set the environment variables on the client machine to UTF8. The required settings vary, depending on the operating system.

8.5.1.1 Windows

Check and set your NLS_LANG environment variable:

1. Right-click the **My Computer** icon on your desktop, then click **Properties**.
2. Click the **Advanced** tab, then click **Environment Variables**.
3. In **User Variables** and **System Variables**, check if there is a variable named NLS_LANG.
4. If there is an NLS_LANG variable, highlight it and click **Edit**.
5. Set the variable value to UTF8; for example: AMERICAN_AMERICA.UTF8

If you do not have the NLS_LANG environment variable, change your registry settings:

1. Click **Start**, then **Run**.
2. In the Run window, enter `regedit` and click **OK**.
3. Locate one of the following registry key entries:
 - HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE
 - HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\HOME x
where x is the unique number identifying the Oracle home
4. Add a new key named NLS_LANG with a value including UTF8; for example:
NLS_LANG=AMERICAN_AMERICA.UTF8

8.5.1.2 UNIX

Do the following:

1. Check the environment variable NLS_LANG:

```
echo $NLS_LANG
```
2. Set the environment variable NLS_LANG to UTF8; for example:

```
% setenv NLS_LANG American_America.UTF8
```

8.6 Integrating Oracle Business Intelligence with the Oracle Life Sciences Data Hub

This section includes the following topics:

- [Section 8.6.1, "Install Oracle Business Intelligence Enterprise Edition"](#)
- [Section 8.6.2, "Set Up Oracle Business Intelligence Publisher \(Oracle BIP\) Programs"](#)
- [Section 8.6.3, "Set Up OBIEE Visualizations"](#)

Oracle Business Intelligence Enterprise Edition (OBIEE) includes components that are used for two different purposes in Oracle LSH:

- **Programs.** You can create Oracle LSH Programs of type Oracle Business Intelligence Publisher (BIP) to generate reports on Oracle LSH data.
- **Visualizations.** You can create Oracle LSH Business Areas of type OBIEE to make data available to visualizations in OBIEE Answers. Definers can install the Administrator's Tool on their PC to develop more complex OBIEE Repository (.rpd) files to support more complex data visualizations.

For both purposes, you must install the BI Server on your network. See the Note below on supported operating systems.

OBIEE 10.1.3.4.1 is included in the media pack and is a required technology stack component for Oracle Clinical Development Analytics (Oracle CDA). However, if you are using OBIEE without Oracle CDA, you must purchase an OBIEE license separately.

8.6.1 Install Oracle Business Intelligence Enterprise Edition

OBIEE components are required as follows:

- Oracle BI Server is required for both Oracle LSH BIP Programs and Oracle LSH Business Areas (for data visualizations).

Note on Supported Operating Systems: For BIP Programs purposes, Oracle LSH supports installing the BI Server on either UNIX or Windows. However, for OBIEE visualization purposes, Oracle LSH supports the BI Server **only on Windows**. If you install the BI Server on Windows, you can use it for both purposes. See My Oracle Support document 180430.1 for the latest information on which operating systems are supported.

- Oracle Business Intelligence Publisher (BIP) is required for developing and executing Oracle LSH BIP Programs.
- OBI Administration Tool is required on the BI Server and on Definers' PCs for developing complex .rpd files for use with Oracle LSH OBIEE visualizations.

8.6.1.1 Install OBIEE

Read the introduction in the *Oracle Business Intelligence Infrastructure Quick Installation Guide* to determine if you can use that guide to install OBIEE or if you need to use the detailed *Oracle Business Intelligence Infrastructure Installation Guide* instead.

8.6.1.2 Install the Oracle LSH DP Server

You must install the Oracle LSH DP Server on the same machine; see "[Set Up the Distributed Processing Server](#)" on page 7-20.

8.6.2 Set Up Oracle Business Intelligence Publisher (Oracle BIP) Programs

On the Oracle BI Server, do the following after installing OBIEE:

- [Section 8.6.2.1, "Enable Program Execution"](#)
- [Section 8.6.2.2, "Set Up Security"](#)

8.6.2.1 Enable Program Execution

To enable running Oracle Business Intelligence Publisher Programs from Oracle LSH, you must:

- Install the Oracle LSH Distributed Processing (DP) Server on the computer where the Oracle Business Intelligence Server is installed. See the [Section 7.14, "Set Up the Distributed Processing Server"](#) for instructions.
- Define a service location in Oracle LSH for Oracle BIP. See "Defining Service Locations" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.
- Define one or more BIP-type services for each service location. See "Defining Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.
- Define a remote location and remote connection in Oracle LSH for Oracle BIP. See "Setting Up Security for Oracle Business Intelligence Publisher" in the *Oracle Life Sciences Data Hub System Administrator's Guide* for instructions.

8.6.2.2 Set Up Security

You must complete a number of security-related tasks, including creating an Oracle Applications responsibility for each person who will use BIP with Oracle LSH. See "Setting Up Security for Oracle Business Intelligence Publisher" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

8.6.2.3 Set Up Business Intelligence Publisher Definer Tools

Oracle BIP has two tools that Definers may need in order to work on BIP Programs. The integrated development environment (IDE) for report logic design is web-based. The Template Builder for Word is used for developing layout templates. Definers can download this tool the first time they launch Oracle BIP or later from the web-based integrated development environment (IDE).

8.6.3 Set Up OBIEE Visualizations

This section contains the following topics:

- [Section 8.6.3.1, "Install Presentation Services on the Same Computer"](#)
- [Section 8.6.3.2, "\(Optional\) Install Presentation Services on Another Computer"](#)
- [Section 8.6.3.3, "Set Up OBIEE Service Locations and Services"](#)
- [Section 8.6.3.4, "Set Up Database Connectivity"](#)
- [Section 8.6.3.5, "Assign Repository Filename\(s\) to each Oracle BI Presentation Services Instance"](#)
- [Section 8.6.3.6, "Set Up Oracle Business Intelligence Administration Tool"](#)

Definers can create OBIEE Answers and Dashboards (visualizations) on Oracle LSH data by:

- Defining an Oracle LSH Business Area of type OBIEE that determines the data that users will be able to view through OBIEE visualizations.
- Installing the Business Area to automatically generate a Repository (.rpd) file and deploy it to the Oracle BI Server. The Definer can refine this default file through the OBI Administration Tool installed on his or her PC, upload it back to Oracle LSH, and reinstall the Business Area to deploy the revised file. For details, see the

Business Area chapter of the *Oracle Life Sciences Data Hub Application Developer's Guide*.

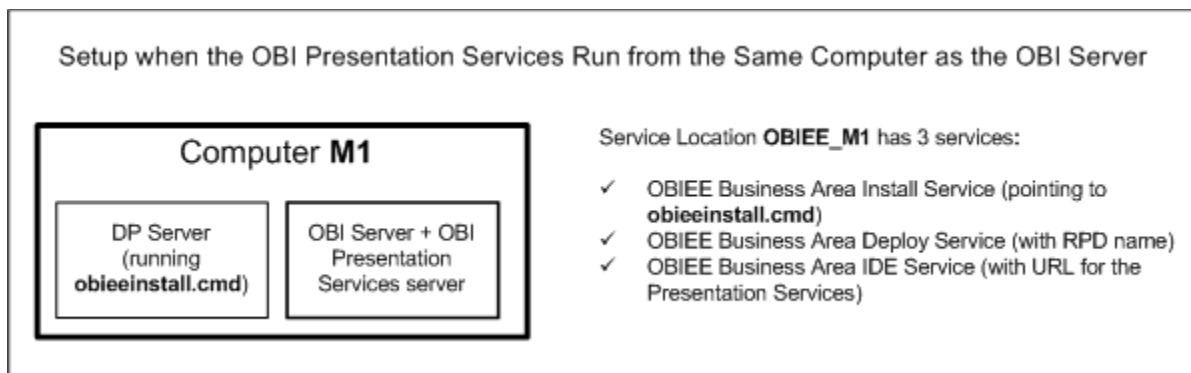
Users can then launch the Oracle Business Intelligence Dashboard either through Oracle LSH or through a URL to see data visualizations.

For more information on configuring OBIEE with Oracle LSH for visualizations, see the chapter on Oracle Business Intelligence in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

8.6.3.1 Install Presentation Services on the Same Computer

By default, when you install the BI Server a Presentation Services Server is also installed on the same computer. See the chapter on Oracle Business Intelligence visualizations in the *Oracle Life Sciences Data Hub System Administrator's Guide* for further information.

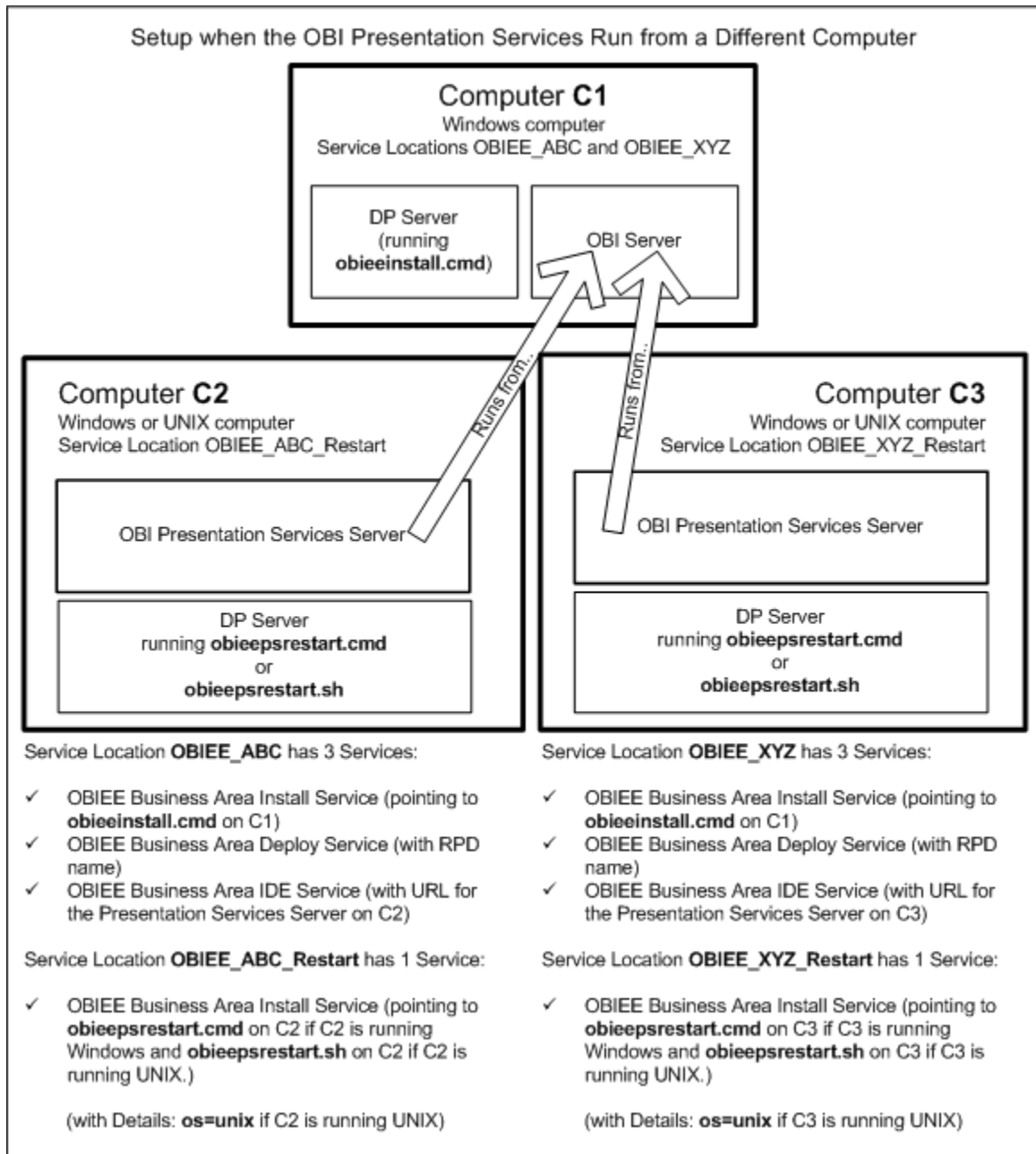
Figure 8–1 Configuration on a Single Computer



8.6.3.2 (Optional) Install Presentation Services on Another Computer

If you want to use a UNIX computer for hosting OBIEE visualizations, or if you want to use a second Windows computer, you can install just the OBIEE Presentation Services—without the BI Server—on either a Windows or UNIX machine. For more information, see the chapter on Oracle Business Intelligence visualizations in the *Oracle Life Sciences Data Hub System Administrator's Guide*.

Figure 8–2 Configuration on Multiple Computers



8.6.3.3 Set Up OBIEE Service Locations and Services

To enable defining Oracle LSH OBIEE-type Business Areas, you must do the following. There are several requirements specific to OBIEE services. See the chapter on Oracle Business Intelligence visualizations in the *Oracle Life Sciences Data Hub System Administrator's Guide* for information.

- Define a service location in Oracle LSH for the Oracle BI Server and for each computer where another Oracle Business Intelligence Presentation Services instance is installed, if any.
- Define services for each service location.

8.6.3.4 Set Up Database Connectivity

To run Oracle Business Intelligence visualizations through Oracle LSH, you must set up connectivity between the Oracle LSH database and the BI Server database. You can use a system ODBC DSN or the Oracle Call Interface (OCI10g) to connect the Oracle BI Server to the Oracle LSH database server.

Set Up Database Connectivity Using a System DSN Create a valid Oracle driver-based System Data Source Name (DSN) on the computer where the Oracle Business Intelligence server is installed.

Consult Microsoft Windows online help for instructions on creating the System DSN.

Use the Test Connection button to test the connection.

Set Up Database Connectivity Using OCI 10g/11g Create an entry in the BI Server's tnsnames.ora file with the name and connection details for the LSH database server.

Test the connection by trying to connect to the Oracle LSH database using SQL*Plus as apps.

Note: You must have an entry for the Oracle LSH database in the tnsnames.ora file in your Oracle Home.

8.6.3.5 Assign Repository Filename(s) to each Oracle BI Presentation Services Instance

Do the following on each computer with a Presentation Services instance installed:

- [Section 8.6.3.5.1, "Add an Entry to the NQSCONFIG File for Each Repository File"](#)
- [Section 8.6.3.5.2, "Set up the Analytics Web DSN to Use the Repository File"](#)

8.6.3.5.1 Add an Entry to the NQSCONFIG File for Each Repository File Each time the BI Server is restarted, all the .rpd files defined in NQSCONFIG.INI are loaded and one of them is defaulted. If an .rpd file is not defined in NQSCONFIG.INI, it is not available for visualizations.

If you are using a single-computer configuration, you have only one .rpd file. If you are using a multi-computer configuration, you can choose to use one .rpd file for all Presentation Services Servers or a different .rpd file for each one by entering the same or different value in the Details field of the Deploy service for the relevant OBIEE service location; see the chapter on Oracle Business Intelligence visualizations in the *Oracle Life Sciences Data Hub System Administrator's Guide*. This value determines which .rpd file is used for which Presentation Services Server.

On the Oracle BI server computer, open the NQSCONFIG.INI file and make an entry for each repository file under the REPOSITORY section that includes both a logical name and the .rpd file name. You must designate one .rpd file as the default, as shown in the following example. Oracle recommends setting the .rpd for the Presentation Services Server installed on the BI Server as the default. For example:

```
REPOSITORY
logical_name1 = RPD_name1.rpd, DEFAULT;
logical_name2 = RPD_name2.rpd
```

Each .rpd file name must exactly match the .rpd file name defined in the Details field of the Deploy service for one of the OBIEE service locations.

Note: Neither the logical name nor the .rpd file name is displayed in OBIEE Answers or in Oracle LSH. The Subject Area's name in OBIEE Answers is populated with the Business Area's name.

8.6.3.5.2 Set up the Analytics Web DSN to Use the Repository File On each computer with the Presentation Services Server installed, set up the Analytics Web DSN to use the Oracle LSH Repository file.

The Presentation Services will try to find its .rpd file during this process, and setup will not succeed if it does not find an .rpd file with the same name that you entered in the NQSConfig.ini file on the Oracle BI server computer and in the Details field of the service location Deploy service definition.

1. Do one of the following:
 - Define and install a Business Area in Oracle LSH; see the *Oracle Life Sciences Data Hub Application Developer's Guide*. This deploys a default .rpd file for the Business Area generated in Oracle LSH.
 - Put a dummy .rpd file in the Server\Repository folder under the Oracle BI installation folder (for example, D:\OracleBI\Server\Repository). You can rename and use the file paint.rpd that comes with OBIEE.
2. In Windows, go to Control Panel, then Administrative Tools, then Data Sources (ODBC), then System DSN, and open the Analytics Web DSN Configuration screen.
3. Enter the name of the Oracle BI Server computer in the Server field of the Analytics Web DSN configuration screen. Click **Next**.
4. Check **Change the default repository to** and enter the logical name of the .rpd file that you set as the default in the NQSConfig.ini file on the Oracle BI server computer.
5. Check **Connect to Oracle BI Server to obtain default settings for the additional configuration options** and supply the Oracle BI Server login ID and password.
6. Click **Next**. The Presentation Services Server tries to connect to the BI Server and looks for the .rpd file.
7. If the connection succeeds, you can see the name of the Oracle LSH Business Area instance under the Database column. Click **Finish**.

8.6.3.6 Set Up Oracle Business Intelligence Administration Tool

To use the Oracle Business Intelligence Administration Tool, each Definer must do the following on his or her local PC:

- Install Oracle Business Intelligence Client Tools in the location specified by the system administrator.
- Install the Oracle LSH client plug-in by inserting the CD-ROM supplied by the system administrator (see [Section 7.15.2.1, "Install the Client Plug-In"](#)).
InstallShield runs **cdrclient.exe**, which loads **cdrconfig.xml** and **cdrclient.exe** either to the default location or to a location the Definer specifies on his or her local computer; see [Section 7.15, "Set Up Client Computers"](#).
- Ensure that **cdrconfig.xml** has the correct directory path for the Oracle BI Administration tool.

- In the Oracle BI Administration Tool, set up connectivity with the Oracle LSH database. See [Section 8.6.3.4, "Set Up Database Connectivity"](#) for information.
- Install Winzip Pro 11.2 SR-1, Winzip 8.1, or any other Winzip that includes the WZUNZIP.exe

Upgrading to Oracle Life Sciences Data Hub Release 2.1.4

This section includes the following topics:

- Section 9.1, "Supported Upgrade Paths"
- Section 9.2, "Stop Server Processes"
- Section 9.3, "Patch Oracle Applications"
- Section 9.4, "Upgrade the Database to 11.2.0.1"
- Section 9.5, "Change Default Password Settings"
- Section 9.6, "Upgrade Oracle Warehouse Builder"
- Section 9.7, "Upgrade Oracle Thesaurus Management System to 4.6.1"
- Section 9.8, "(Optional) Upgrade Informatica PowerCenter to 8.6.1, Hotfix 11"
- Section 9.9, "(Optional) Install OBIEE 10.1.3.4.1"
- Section 9.10, "Migrate the Oracle Warehouse Builder Repository"
- Section 9.11, "Upgrade Oracle Life Sciences Data Hub"
- Section 9.12, "Integrate Oracle LSH with the 11gR2 Oracle Warehouse Builder"
- Section 9.13, "Migrate the Oracle Warehouse Builder Stores"
- Section 9.14, "Upgrade the Distributed Processing Server"
- Section 9.15, "Do the Remaining Post-Installation Tasks"
- Section 9.16, "Start Server Processes"

Note: If you upgrade to a newer version of Oracle LSH after December 31, 2010 and are using Oracle Enterprise Manager with Oracle LSH, apply OEM patch 8350262.

For further information see My Oracle Support article number 1217493.1.

9.1 Supported Upgrade Paths

Upgrading to Oracle Life Sciences Data Hub (Oracle LSH) is supported from the following releases. Each section begins with information on which upgrade paths require the steps in the section.

- Oracle LSH Release 2.1.2

- Oracle LSH Release 2.1.3 on Oracle Database 10gR2
- Oracle LSH Release 2.1.3 on Oracle Database 11gR2

If you have already upgraded to Oracle RDBMS 11gR2 (11.2.0.1) and Oracle Applications ATG RUP7 with Oracle LSH 2.1.3, you need to follow instructions in the following sections only:

- [Section 9.2, "Stop Server Processes"](#)
- [Section 9.11, "Upgrade Oracle Life Sciences Data Hub"](#)
- [Section 9.14, "Upgrade the Distributed Processing Server"](#)
- [Section 9.15, "Do the Remaining Post-Installation Tasks"](#)
- [Section 9.16, "Start Server Processes"](#)

9.2 Stop Server Processes

This step is required for all upgrade paths.

Before you begin the upgrade, stop the following servers:

- Oracle Life Sciences Data Hub (Oracle LSH) Distributed Processing (DP) Server (see [Section 7.14.6, "Start the DP Server"](#))
- Application Server

9.3 Patch Oracle Applications

These steps are required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2 with ATG RUP5

9.3.1 Apply Oracle Applications 11i Rollup Patch 7

If you have not already done so, install Oracle Applications 11i ATG rollup patch (RUP) 7 (patch 6241631):

1. Apply the patch using Autopatch (see ["How to Use AutoPatch"](#) on page xv).
2. Follow instructions in My Oracle Support article 783600.1, *About Oracle Applications Technology 11i.ATG_PF.H.delta.7 (RUP 7)*.

9.3.2 Apply Oracle Applications Patches

If you have not already done so, apply the following patches using Autopatch (see ["How to Use AutoPatch"](#) on page xv).

- 4477329 to fix an issue while extracting FND lookup data
- 7456837 required for 11gR2 JDBC driver compatibility
- 7605820 Binder utility shows bookmarks in merged document
- 8506761 PDFBookbinder update for XML Publisher 5.6.3
- 9655837 to fix a problem with the Rich Text Editor that prevents manually entering Oracle LSH source code

9.4 Upgrade the Database to 11.2.0.1

This step is required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

Note: This upgrade includes an automatic upgrade of Oracle Warehouse Builder (OWB) to 11.2.0.1, which is required for Oracle LSH 2.1.4. However, **do not delete your installation of OWB 10gR2** if you use Oracle Discoverer for data visualizations.

To upgrade from Oracle Database Server 10.2.0.3 or 10.2.0.4 to Oracle Database Server 11.2.0.1:

1. Follow instructions in My Oracle Support article 881505.1, *Interoperability Notes: Oracle E-Business Suite Release 11i with Oracle Database 11g Release 2 (11.2.0)*. The following steps are not required for Oracle LSH:
 - Migrating Oracle Portal
 - Installing Data Mining and OLAP

Notes: Be sure to install the Oracle 11gR2 Example DVD. Oracle Text is included on this DVD. It is required by Oracle Thesaurus Management System for the Oracle LSH classification system.

Note: My Oracle Support article 881505.1 states that Oracle Warehouse Builder 11gR2 is not yet certified for use with EBS11i. You can disregard this statement in the context of Oracle Life Sciences Data Hub.

2. Apply patch 6880880, the latest patch for the Universal Installer.
3. (Optional) Apply patch 9580062. This is required for bulk loading if you are planning to use the Oracle LSH Informatica adapter to develop and execute Oracle LSH Programs of type Informatica.

9.5 Change Default Password Settings

This step is required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

Oracle 11gR2 includes new default password-related settings.

- Edit `init.ora` to turn off case-sensitive database logon as follows:

```
sec_case_sensitive_logon=false
```

- To prevent database password expiration, log in to SQL*Plus as a superuser and enter:

```
ALTER PROFILE DEFAULT LIMIT PASSWORD_LIFE_TIME UNLIMITED;
```

9.6 Upgrade Oracle Warehouse Builder

The 11gR2 database installation by default includes an installation of OWB 11gR2. Apply OWB patches to this OWB installation.

Note: Do not delete your installation of OWB 10gR2. It is required for Oracle Discoverer.

1. Download the following patches from My Oracle Support (see ["Finding Patches on My Oracle Support"](#) on page xiv).
 - 9472946 PSE for bug 9402928 on top of 11.2.0.1
 - 9584600 PSE for base bug 9583823 on top of 11.2.0.1

Note: Set the ORACLE_HOME environment variable to point to the actual Oracle Home, not the OWB Home as currently directed in the patch readme files.

Note: Do not run the post-installation steps as directed in both patch readme files. You will do this later; see [Section 9.12.10, "Run the Migration Script"](#).

2. Apply the patches using instructions in the readme files.

9.7 Upgrade Oracle Thesaurus Management System to 4.6.1

This step is required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

To install TMS 4.6.1:

1. Follow instructions in [Section 6.1, "Set Up a Windows Computer for Launching the TMS Installation"](#).
2. Follow upgrade instructions in the *Oracle Thesaurus Management System 4.6.1 Installation Guide* in the following sections:
 - Section 6.3.1 "Launch the Installer"
 - Section 6.3.2 "Attend to the Installer"

Note: In the Installer screen **Select a product to install**, be sure to select **TMS Database Upgrade**.

3. Apply TMS patch 4.6.1.7, which is patch number 9728948, using instructions in the release notes.

9.8 (Optional) Upgrade Informatica PowerCenter to 8.6.1, Hotfix 11

If you use Informatica PowerCenter as an integrated development environment in Oracle LSH, this step is required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

You must buy this software from Informatica.

If you are using Informatica as an integrated development environment (IDE) and processing engine, upgrade from release 8.1.1 to 8.6.1:

1. Run the installer, selecting the option to upgrade from the previous version.
2. Apply 8.6.1 Hotfix 11.

Note: Oracle LSH has been tested ONLY with Informatica PowerCenter 8.6.1 with Hotfix 11. If more recent releases have become available, do NOT install them unless explicitly instructed to do so by an Oracle LSH-specific note or alert on My Oracle Support.

You can get Hotfix 11 even if it has been superseded by a later version by logging a Service Request with Informatica.

3. Create an environment file `infa.env` under `$INFA_HOME` (Informatica Installation Directory) and set the following environment variables:

```
INFA_HOME=<Informatica Installation Directory>
LANG=C
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:<Informatica Installation
Directory>/server/bin
```

On a Linux platform, add this extra line to the file:

```
unset LD_ASSUME_KERNEL
```

9.9 (Optional) Install OBIEE 10.1.3.4.1

This step is required if you plan to use OBIEE either for visualizations or for Business Intelligence Publisher (BIP) reports and are upgrading from Oracle LSH 2.1.2. You cannot upgrade your current installation; you must reinstall the product.

The installation process uses the Oracle Universal Installer. See OBIEE 10.1.3.4.1 documentation for instructions.

If you are using OBIEE only for BIP, you can install the BI Server on either UNIX or Windows. If you are installing OBIEE for visualizations, you must install the BI Server on Windows. The Windows installation can serve both purposes. See [Section 8.6, "Integrating Oracle Business Intelligence with the Oracle Life Sciences Data Hub"](#) for further information.

9.10 Migrate the Oracle Warehouse Builder Repository

This is required if you are upgrading from:

- Oracle LSH 2.1.2

- Oracle LSH 2.1.3 on 10gR2

The steps in this section are required to migrate the OWB repository residing in the CDR_RTREPOS schema to the 11gR2 unified repository in the OWBSYS schema. All steps are required on the new 11gR2 OWB Home created during the database upgrade.

9.10.1 Create the OWBSYS Schema and Grant Privileges

Create the OWBSYS schema in the database and grant it required privileges.

9.10.1.1 Create the Schema

Note: Running this script also creates the user OWBSYS_AUDIT. Oracle LSH does not use this account and you do not need to unlock it.

1. Log on to the computer where Oracle LSH is installed.
2. Change directories to <OWB_HOME>/owb/UnifiedRepos.
3. Log in to SQL*Plus as a database user with SYSDBA privileges.
4. Run the following script to create the OWBSYS schema:

```
@cat_owb.sql
```

This script creates and locks the user OWBSYS.

5. Enter the following command to unlock the OWBSYS user:

```
alter user owbsys account unlock
```

Note: Oracle recommends changing the default password for this account. You will need the password later.

9.10.1.2 Grant Required Privileges

1. Log in to SQL*Plus as the user CDR_RTREPOS. Check that you are properly logged in:

```
show user;
```

The system returns: CDR_RTREPOS

2. Grant privilege to owbsys:

```
grant owb_o_cdr_rtrepos to owbsys with admin option;
```

9.10.2 Point to the 11gR2 Oracle Home

1. Log in to SQL*Plus as the OWBSYS user.
2. Reset the OWB Home to the new 11gR2 OWB Home:

```
@reset_owbcc_home;
```


At the prompt, enter the full path of the 11gR2 Oracle Home. If you are installing in a Windows environment, be sure to match the case of the path exactly, including the drive letter.

9.10.3 Create New OWB Workspace for CDR_RTREPOS

To create a new OWB Workspace for the existing user (CDR_RTREPOS):

1. Change directory to <OWB_HOME>/owb/bin/unix.
2. Run the script reposinst.sh to launch the Repository Assistant.
3. Follow instructions on screen. Enter the database connection information and then choose the Manage Warehouse Building Workspace option to create a new Warehouse Builder workspace for the existing user (CDR_RTREPOS).

9.11 Upgrade Oracle Life Sciences Data Hub

These steps are required for all upgrade paths.

Follow the instructions in the following sections of [Chapter 7, "Installing the Oracle Life Sciences Data Hub."](#)

- [Section 7.2, "Install Oracle LSH Release 2.1.4"](#)
- [Section 7.3, "Install Online Help"](#)
- [Section 7.4, "Grant Execute Privileges to the APPS Schema"](#)

9.12 Integrate Oracle LSH with the 11gR2 Oracle Warehouse Builder

These steps are required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

Except for the steps in [Section 9.12.12, "Stop the 10g OWB Service"](#), all steps must be performed on the 11g OWB Home created during the database upgrade.

This section contains the following topics:

- [Section 9.12.1, "Set Up Your Environment"](#)
- [Section 9.12.2, "Create Directories and Copy Files"](#)
- [Section 9.12.3, "Disable Application Server Authentication"](#)
- [Section 9.12.4, "Edit run_service.sh"](#)
- [Section 9.12.5, "Edit runtime.properties"](#)
- [Section 9.12.6, "Edit owb.classpath"](#)
- [Section 9.12.7, "Edit Shell Scripts to Match Directory Structure"](#)
- [Section 9.12.8, "Run OWB Shell Scripts"](#)
- [Section 9.12.9, "Stop and Start the OWB Service"](#)
- [Section 9.12.10, "Run the Migration Script"](#)
- [Section 9.12.11, "Export the OWB Repository Owned by User CDR_RTREPOS"](#)
- [Section 9.12.12, "Stop the 10g OWB Service"](#)
- [Section 9.12.13, "Import the OWB Repository"](#)

Follow these steps to install OWB Adapters and Operators in the new 11gR2 OWB Home. Except for the steps in [Section 9.12.12, "Stop the 10g OWB Service"](#), all steps must be performed on the 11gR2 OWB Home created during the database upgrade.

9.12.1 Set Up Your Environment

You must set up your environment as follows.

9.12.1.1 Ensure that Oracle SID and Short Global Names Match

The database short global name must be the same as the Oracle SID. If they are not the same, you must change the short global name to match the Oracle SID.

For example, if the Oracle SID is LSHX2R10, the short global name must also be set to LSHX2R10.

9.12.1.2 Edit init.ora

Check the init.ora file and add the following parameters and values if they do not already exist.

Usually located in <ORACLE_HOME>/dbs on the database tier, the file is named *initOracle SID.ora*, (for example, *initLSHX2R10.ora* where the database Oracle SID is LSHX2R10).

The required parameters and values are:

Utility File Directory The first value of the parameter `utl_file_dir` must match the value of the Oracle Applications variable `$APPLPTMP`. Otherwise the post-installation program will fail. For instructions on reading and modifying Oracle Applications variables, see [Section 3.3, "Increase JVM Memory."](#)

```
oa_var=s_applptmp
```

Global Names If you plan to set up a database link to one or more databases with a name different from the current database, set the Global Names parameter to `FALSE` both in the current (Oracle LSH) database and in each database to which you create a link from Oracle LSH.

```
global_names=FALSE
```

Job Queue Processes This parameter value determines the number of job queue processes that are started. The default value is 2. Oracle recommends changing this to a minimum value of 10. If you do not have enough job queues started, OWB processes may not be able to start. However, too many job queues use resources unnecessarily.

```
job_queue_processes = 10
```

Local Listener Set local listener as follows:

```
local_listener="(ADDRESS=(PROTOCOL=TCP)(HOST=hostname.domain)(PORT=db_port))"
```

For example:

```
local_listener="(ADDRESS=(PROTOCOL=TCP)(HOST=apx208rt.us.oracle.com)(PORT=4321))"
```

where the hostname is `apx208rt`, the domain is `us.oracle.com`, and the port is `4321`.

Note: It is not possible to display the above strings on one line in this document. They should not contain any hard returns.

Service Names Set service names as follows:

```
service_names=Oracle_SID, Oracle_SID.domain
```

For example:

```
service_names=LSHX2R10, LSHX2R10.us.oracle.com
```

where the Oracle SID is LSHX2R10 and the domain is us.oracle.com

Time Manager The Time Manager process is necessary to move deferred messages from WAIT state to READY state when the message has passed its delay time. Set the `aq_tm_processes` parameter to 1 to enable the Time Manager process.

```
aq_tm_processes = 1
```

9.12.1.3 Restart the Database and Listener

If you changed the value for any parameter in the `init.ora` file, you must stop and start both the database and the listener for the changes to take effect.

9.12.1.4 Test Database Connectivity

Set up the environment so that you can connect to the database using SQL*Plus for the Oracle SID. This requires having values set for the following two variables in the environment:

- ORACLE_SID
- ORACLE_HOME

9.12.2 Create Directories and Copy Files

Create directories for Oracle LSH in the OWB home directory and copy files into them.

Note: Copy all files from the locations given in the instructions. **DO NOT copy the files from your old 10g OWB installation to the 11gR2 OWB installation.**

1. Go to the <OWB_HOME> directory.
2. Create a directory under <OWB_HOME> called `cdr` and run `chmod 755` to grant access permissions.
3. Copy files into the <OWB_HOME>/`cdr` directory as follows:
 - From `$FND_TOP/secure` copy the `.dbc` Oracle Applications database connection file.
 - From `$CDR_TOP/jar` copy `cdr_owb_jars.zip`. This zip file contains the Oracle LSH/OWB integration jar files.
 - From `$CDR_TOP/admin/template` copy `installOwbOperator.sh` and `installOwbAdapter.sh` and `installOwbBIPAdapter.sh`. These shell scripts integrate Oracle LSH adapters and operators with OWB.
4. Using a zip utility, unzip `cdr_owb_jars.zip` to extract the following files:
 - `cdr_owb_operators.jar`
 - `cdr_owb_adapters.jar`
 - `cdr_owb_bip_adapters.jar`

5. Create a directory under <OWB_HOME>/cdr called **appslibs**.
6. Copy the following files into <OWB_HOME>/cdr/appslibs from \$JAVA_TOP/oracle/apps/fnd/jar:
 - fndsec.jar
 - fndaolj.jar
 - fndcct.jar

9.12.3 Disable Application Server Authentication

By default when Oracle Applications 11.5.10 CU2 is installed, the application security authentication is set to **ON**. To enable OWB to find the JDBC connection from the DBC file during Business Area installation, set this to **OFF**:

1. Open your Oracle LSH URL and log in as sysadmin.
2. Click **System Administration** in the left-hand column under Navigator. The system refreshes the page and adds a column of links on the right.
3. Under **Oracle Applications Manager** in the right-hand column, click **Dashboard**. The Applications Dashboard screen opens.
4. Click **Sitemap** to go to the Sitemap tab.
5. Under **System Configuration**, click **AutoConfig**. The AutoConfig screen opens.
6. Under **Context Files**, click the **Edit Parameters** icon for the Application Tier. The Context File Parameters screen opens.
7. From the **Search** drop-down list, select **OA_VAR** and click **Go**.
8. In the field next to the Search drop-down list, enter the parameter name `s_appserverid_authentication` and click **Go**.
9. In the **Value** field for `s_appserverid_authentication`, change the value to `OFF`.
10. Run AutoConfig. See My Oracle Support document number 165195.1.
11. Stop and start the Apache server for the new value to take effect.

9.12.4 Edit run_service.sh

Edit the `run_service.sh` file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/unix
2. Back up the `run_service.sh` as `run_service.sh.orig`
3. Open `run_service.sh`.
4. Find the command starting with: `$JAVAPATH/bin/java`
5. Modify this command by adding the `DBC_LOCATION` environment variable using the `-D` command line option. Enter the following string before the first existing `-D` parameter in the command:

```
-DDBC_LOCATION="${OWB_HOME}/cdr/DBC_file_name.dbc"
```

For example:

```
$JAVAPATH/bin/java -Xmx768M -DDBC_LOCATION="${OWB_HOME}/cdr/XYZ.dbc" -D...
```

where XYZ.dbc is the DBC file name.

In addition, ONLY if you are installing on an HP-UX PA-RISC (32-bit) system, change the following line for the HP-UX platform (as per My Oracle Support document 286656.1, *Error Resource File Dcesqres Library Not Found When Creating An apps-mode EUL Using eul api*):

```
LD_LIBRARY_PATH=${ORACLE_HOME}/lib
```

to:

```
LD_LIBRARY_PATH=${ORACLE_HOME}/lib32
```

9.12.5 Edit runtime.properties

This step does two things:

- **Character Semantics Profile.** This step enables OWB to read the setting of the profile LSH: Use Character Semantics for Workarea Installation. You can then set that profile to select whether to use byte or character semantics during Work Area installation. The default setting is **byte**. If your data includes special characters, Oracle recommends using character semantics to help ensure that Oracle LSH stores and displays the characters correctly. See the *Oracle Life Sciences Data Hub System Administrator's Guide* for more information and instructions for setting the profile.
- **OWB 10g and 11gR2 Integration.** This step tells OWB 11gR2, which runs internal Oracle LSH processes, where to find OWB 10g, which is required for Oracle Discoverer-related processes.

Edit the Runtime.properties file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/admin.
2. Edit Runtime.properties by adding the following lines at the end:


```
connection.init_session=apps.cdr_owb_session_setup
property.RuntimePlatform.0.DISCO_HOME= full_path_of_owb_10g_home
```

9.12.6 Edit owb.classpath

Edit the owb.classpath file as follows:

1. Go to the directory <OWB_HOME>/owb/bin/admin.
2. Back up the **owb.classpath** as **owb.classpath.orig**
3. Edit **owb.classpath**. After the section on "OWB external jars" add the following lines:

```
$OWB_HOME/cdr/cdr_owb_operators.jar
```

```
$OWB_HOME/cdr/cdr_owb_adapters.jar
```

```
$OWB_HOME/cdr/appslibs/fndsec.jar
```

```
$OWB_HOME/cdr/appslibs/fndaolj.jar
```

```
$OWB_HOME/cdr/appslibs/fndcct.jar
```

If you are using or plan to use Oracle Business Intelligence Publisher, add the following lines as well:

```
$OWB_HOME/cdr/cdr_owb_bip_adapters.jar
```

```
$OWB_HOME/owb/lib/int/rtpcommon.jar
```

```
$OWB_HOME/owb/lib/int/rtpplatform.jar
$OWB_HOME/lib/xmlparserv2.jar
$OWB_HOME/lib/activation.jar
$OWB_HOME/lib/mail.jar
$OWB_HOME/oc4j/j2ee/home/lib/http_client.jar
$OWB_HOME/jdev/lib/jdev-rt.jar
$JAVA_HOME/oracle/apps/fnd/3rdparty/bc4jdomorcl.jar
```

Note: If your database and application servers are installed on different machines, you must copy this file from the application server to the `$OWB_HOME/cdr/appslibs` directory on the database server and include the new path instead of the line above:

```
$OWB_HOME/cdr/appslibs/bc4jdomorcl.jar
```

In addition, for use with Oracle Business Intelligence Publisher, add the physical path for: `ORACLE_HOME_VALUE/oc4j/webservices/lib/soap.jar`.

Note: The last two locations listed above are different in the 11gR2 installation than they were in the 10g installation.

9.12.7 Edit Shell Scripts to Match Directory Structure

Before you run the shell scripts, edit the following values in each script to reflect your environment values:

- DB_HOST
- DB_PORT
- DB_SERVICE_NAME
- DB_SID
- OWB_HOME
- Make sure that the `<OWB_HOME>` directory is set up the same way as in the file pathnames in the files `installOwbOperator.sh` and `installOwbAdapter.sh`

9.12.8 Run OWB Shell Scripts

Do the following:

1. Change directory to `<OWB_HOME>/cdr`.
2. Install the adapters by running the following scripts. The third script is required only if you are using the Oracle Business Intelligence Publisher (BIP) adapter (required for creating BIP Programs).

```
./installOwbOperator.sh
./installOwbAdapter.sh
./installOwbBIPAdapter.sh
```

No Java exceptions should occur.

Note: If you run **installOwbOperator.sh** more than once, you receive a unique constraint violation error. You can safely ignore this message.

The system creates a log file for each script in <OWB_HOME>/cdr called **installOwbOperator.log** and **installOwbAdapter.log**. The log files spool out the actual Java statement that the shell script sets up.

9.12.9 Stop and Start the OWB Service

You must stop and start the OWB service.

9.12.9.1 Stop the OWB Service

To stop the OWB service do the following:

1. Change directory to \$OWB_HOME/owb/rtp/sql
2. Log into SQL as OWBSYS.
3. At the SQL prompt, enter:

```
@stop_service.sql
```

When the system displays the words "Not Available" the service is stopped.

9.12.9.2 Start the OWB Service

To start the OWB service do the following:

1. Change directory to \$OWB_HOME/owb/rtp/sql
2. Log into SQL as OWBSYS.
3. At the SQL prompt, enter:

```
@start_service.sql
```

When the system displays the word "Available" the service has been restarted.

9.12.10 Run the Migration Script

Run the OWB migration script to migrate the OWB repository residing in the CDR_RTREPOS schema to the unified repository in OWBSYS schema.

1. Log in to the computer where OWB is installed.
2. Go to the directory <OWB_HOME>/owb/rtsast.
3. Log in to SQL*Plus as the OWBSYS user.
4. Run the migration scripts:
 - wb_rt_upgrade_actions.pls
 - wb_rt_upgrade_actions.plb
 - wb_rt_upgrade.plb
 - wb_rti_object_catalog.plb

9.12.11 Export the OWB Repository Owned by User CDR_RTREPOS

Export the old OWB repository:

1. In your 11gR2 OWB Home, change directories to <OWB_HOME>/owb/bin/unix.
2. Run the script `reposinst.sh` to launch the Repository Assistant.
 - a. Choose the option **Upgrade Repository to Current Release of OracleWarehouseBuilder**.
 - b. Choose the option **Export Entire Repository to File**.
 - c. Enter username `CDR_RTREPOS` and its password.
 - d. Export the repository.

9.12.12 Stop the 10g OWB Service

You do not need the OWB service to run after upgrading to 11gR2, even if you are using Oracle Discoverer and need to keep your OWB 10g installation. Oracle Discoverer has only a file dependency on 10g OWB.

Note: These are the only steps that you perform on your 10g OWB Home. All other OWB steps, including the Export step, are on the 11gR2 Home.

To stop the 10g OWB process:

1. Go to `10g_OWb_HOME/owb/bin/unix`.
2. Rename `run_service.sh` as `run_service_temp.sh`.
3. Log in to SQL*Plus as the user `CDR_RTREPOS`. Check that you are properly logged in:

```
show user;
```

The system returns: `CDR_RTREPOS`

4. Run the Stop Service script:

```
@OWB_HOME/owb/rtp/sql/stop_service.sql
```

9.12.13 Import the OWB Repository

Import the old OWB repository to the new unified repository:

1. In <OWB_HOME>/owb/bin/unix, run the script `reposinst.sh` to launch the Repository Assistant.
 - a. Choose the option **Upgrade Repository to Current Release of OracleWarehouseBuilder**.
 - b. Choose the option **Import Entire Repository to file**.
 - c. Enter username `OWBSYS` and its password.
 - d. Specify the export dump file created in [Section 9.12.11, "Export the OWB Repository Owned by User CDR_RTREPOS"](#) and import the file.
2. The system displays a message that the import is successful or not.

If the import is not successful:

1. Log in to SQL*Plus as a database user with `SYSDBA` privileges.
2. Change directories to <OWB_HOME>/owb/UnifiedRepos.

3. Run the script `clean_owbsys.sql`.
4. Repeat all the steps beginning with running `cat_owb.sql` in [Section 9.10.1, "Create the OWBSYS Schema and Grant Privileges."](#)

9.13 Migrate the Oracle Warehouse Builder Stores

These steps are required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2

9.13.1 Migrate the Store Passwords and Audit Task ID

No input is required to migrate the Audit Task ID.

1. Log in to the database as `CDR_RTREPOS`.
2. Run the script `$CDR_TOP/patch/115/sql/cdrowbstoreupdate.sql`.
The script prompts you for the passwords to the following accounts:
 - `OWBSYS`
 - `APPS`

9.13.2 Upgrade the Workflow Store

Start the OWB Browser Listener

1. Log in to the computer where OWB is installed.
2. Go to the directory `<OWB_HOME>/owb/bin/unix`.
3. Run the script `startOwbbInst.sh`.

At the prompt, enter the `oc4j` password.

Upgrade the Workflow Store

1. Launch the OWB repository through its URL:
`https://<DB_Host_Name>.<domain>:<port>/owbb/RABLogin.uix?mode=runtime`
For example:
`https://rws60008rems.us.oracle.com:8999/owbb/RABLogin.uix?mode=runtime`
2. In the Login screen, enter:
 - User name `CDR_RTREPOS` and its password
 - The Host, Port, and Service Name of the database
3. Select the **Control Center** radio button and click **Login**.
4. For Workspace, select **CDR_RTREPOS.CDR_RTREPOS** and click **Go**.
5. Click **Locations Report**.
6. On the Location screen, order by store name.
7. Click on the hyperlink in the **Validation** column (the rightmost column) for the **APPS_MODULE_LOCATION1** store.

8. Update the Netservice name to null and click **Update**.
9. Check that the host, port and SID of the store are the same as that of the control center which is displayed at the top of the screen.
10. Enter the APPS schema password and click **Get Status**.
11. Enter the APPS schema password and click **Upgrade**.
12. Observe that the store status changes to **Valid**.
13. Repeat Steps 10 to 15 for the APPS store.
14. Close the browser.

Stop the OWB Browser Listener

1. Log in to the computer where OWB is installed.
2. Go to the directory <OWB_HOME>/owb/bin/unix.
3. Run the script stopOwbbInst.sh.
At the prompt, enter the oc4j password.

9.13.3 Upgrade Other OWB Stores

To upgrade other OWB stores:

1. Go to the directory <OWB_HOME>/owb/bin/unix.
2. Run upgradeLoc.sh by specifying the following parameters:

```
sh upgradeLoc.sh <host>.<domain> <port> <service> <wks_owner_name> <wks_owner_  
pswd> <workspace_owner.workspace_name>
```

For example:

```
sh upgradeloc.sh rws60160rems.us.oracle.com 1557 ildv214 CDR_RTREPOS CDR_  
RTREPOS CDR_RTREPOS.CDR_RTREPOS
```

3. Check the log file upgradeLoc.log which is created in the same directory and confirm that there are no errors.

9.13.4 Edit listener_ifile.ora

If you have not already done so, configure the database listener to allow OWB to communicate with the database by editing your listener_ifile.ora file; see [Section 4.6](#), "Edit listener_ifile.ora".

9.14 Upgrade the Distributed Processing Server

This step is required for all upgrade paths.

Upgrade the Oracle LSH DP Server on every computer where it is installed:

1. Go to the lib directory in the DP Server Home directory on each computer where the DP Server resides.
2. Copy **DPServer.zip** from \$CDR_TOP/jar to the lib directory.
3. Using GNU zip or another utility, unzip the DPServer.jar from the zip file into the lib directory. This extracts DPServer.jar.

4. Copy aqapi.jar from \$IAS_ORACLE_HOME/rdbms/jlib to the DP Server Home lib directory. Overwrite the existing aqapi.jar file.
5. On each computer where you install the DP Server, set the NSL_LANG environment variable to UTF8.

9.15 Do the Remaining Post-Installation Tasks

These steps are required for all upgrade paths.

Follow the instructions in the following sections:

- [Section 7.8, "Run the Post-Installation Programs"](#)
- [Section 7.12, "Grant Security Rights to Seeded Adapters"](#)

9.16 Start Server Processes

This step is required if you are upgrading from:

- Oracle LSH 2.1.2
- Oracle LSH 2.1.3 on 10gR2
- Oracle LSH 2.1.3 on 11gR2

Start the following servers:

- Application Server
- Oracle LSH Distributed Processing (DP) Server (see [Section 7.14.6, "Start the DP Server"](#))

What's Next

After you have finished all the installation tasks outlined in this book, you must do the following tasks before you can begin to use the Oracle Life Sciences Data Hub (Oracle LSH):

- Define Oracle LSH Distributed Processing (DP) Server service locations and services to integrate Oracle LSH with its processing engines and IDEs. See "Setting Up Services" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.
- Design an object security system, classification system, and organizational structure for your implementation of Oracle LSH; see "Designing a Security System", "Designing a Classification System", and "Designing an Organizational Structure" in the *Oracle Life Sciences Data Hub Implementation Guide*.
- Set up the security system, classification system, and organizational domains; see "Setting Up the Security System" and "Setting Up the Classification System" in the *Oracle Life Sciences Data Hub System Administrator's Guide* and "Applications User Interface" in *Oracle Life Sciences Data Hub Application Developer's Guide*.
- Define remote locations to integrate Oracle LSH with Oracle-based source data systems. See "Registering Locations and Connections" in the *Oracle Life Sciences Data Hub System Administrator's Guide*.
- If you plan to use OBIEE for visualizations, Oracle BIP for reports, or Informatica for data transformations, do the additional setup required for each system. See the *Oracle Life Sciences Data Hub System Administrator's Guide* for information.



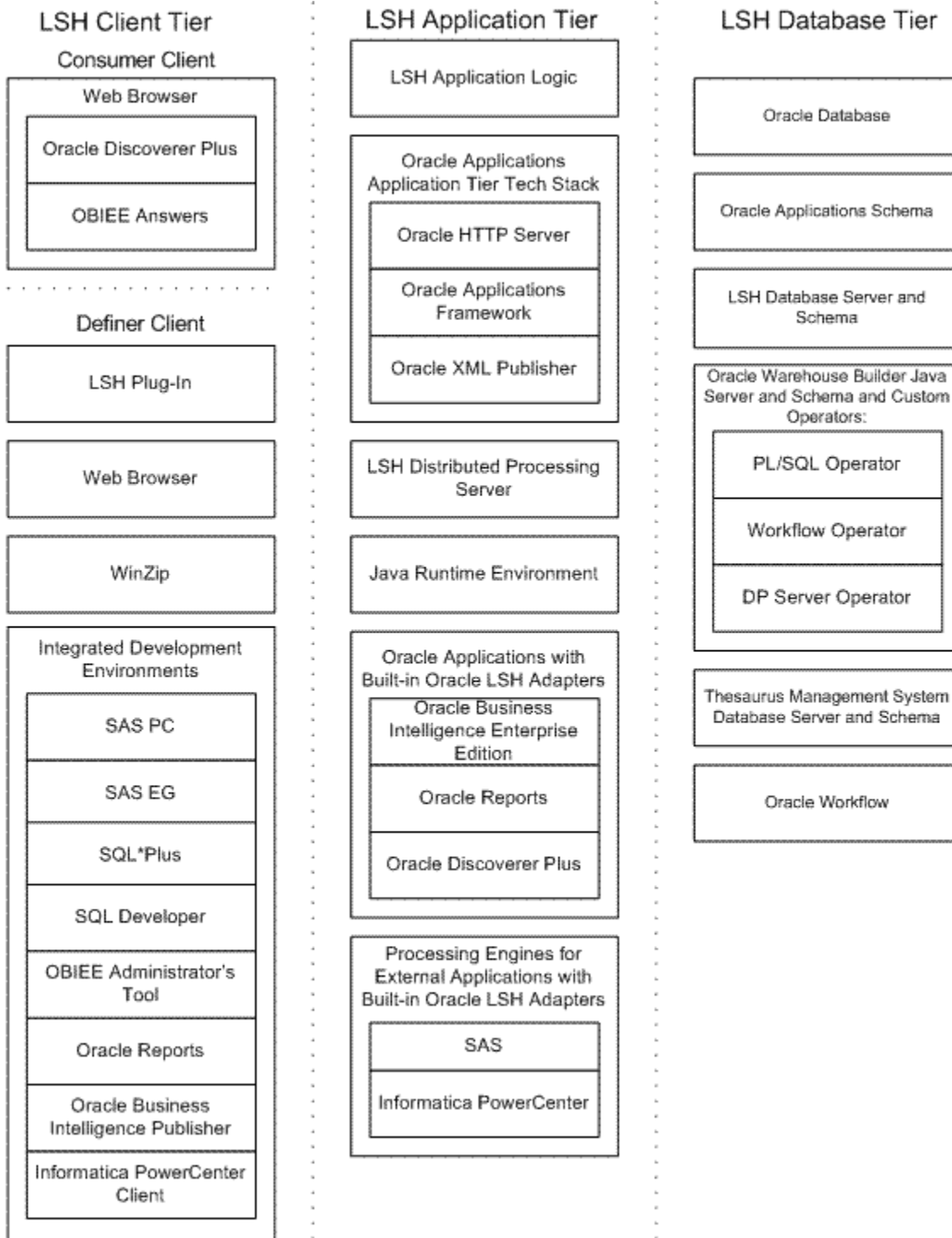
Architecture Overview

This section contains the following topics:

- [Section A.1, "Client Tier"](#)
- [Section A.2, "Application Tier"](#)
- [Section A.3, "Database Tier"](#)
- [Section A.4, "Adapters to External Systems"](#)

[Figure A-1](#) shows the logical Oracle LSH architecture that is described in the following sections.

Figure A-1 *Oracle LSH Architecture*



A.1 Client Tier

There are two ways to set up a client, depending on the type of user:

Consumers and Administrators Oracle LSH Consumers, who retrieve information in the form of reports and visualizations, and Oracle LSH Administrators, who perform

administrative tasks within Oracle LSH, require the following on their personal computers:

- A Web browser
- Java Virtual Machine (JVM)

Consumers require JVM if they are using Oracle Discoverer Plus to create data visualizations. Administrators require either JInitiator or JVM to use any of the Oracle Forms screens related to security, to run the post-installation jobs, and to set up user accounts and functional roles.

Definers A full-service client for users who create (define) the programs that operate on Oracle LSH data and generate reports requires additional software:

- Oracle LSH plug-in for launching Integrated Development Environments (IDEs)
- Winzip
- Web browser
- In addition, Definers need one or more IDE clients. These may include: SAS PC, SQL*Plus, SQL Developer, OBIEE Administration Tool, Oracle Reports, Oracle Business Intelligence Publisher, Informatica PowerCenter client.

A.2 Application Tier

In addition to standard Oracle Applications components, Oracle LSH's application tier includes the following:

Oracle LSH Application Server The Oracle LSH Application Server renders the user interface using the Oracle Applications Framework and handles the communication between the user interface and the database using the Java Runtime Environment.

Oracle LSH Distributed Processing (DP) Server The Oracle LSH DP Server handles the communication between Oracle LSH and the external processing systems required to support the IDEs.

Processing Systems XML Publisher is required for internal Oracle LSH processing. The other systems are required only if you are developing Oracle LSH Programs in those technologies:

- **Oracle XML Publisher** is used by Oracle LSH to run system reports. Oracle LSH also uses XML Publisher to create Report Sets as a single PDF output with a unified table of contents and custom templates.
- **Oracle Reports** executes user-developed Oracle Reports Programs.
- **Oracle Business Intelligence Publisher** executes user-developed Oracle BIP Programs.
- **SAS** executes user-developed SAS Programs.
- **Informatica PowerCenter** executes user-developed Informatica programs.
- **Oracle Discoverer Plus**. Accessed by Consumer clients through a Web browser, this application generates data visualizations based on user-developed Oracle LSH Discoverer Business Areas.

A.3 Database Tier

The Oracle LSH database tier includes the following:

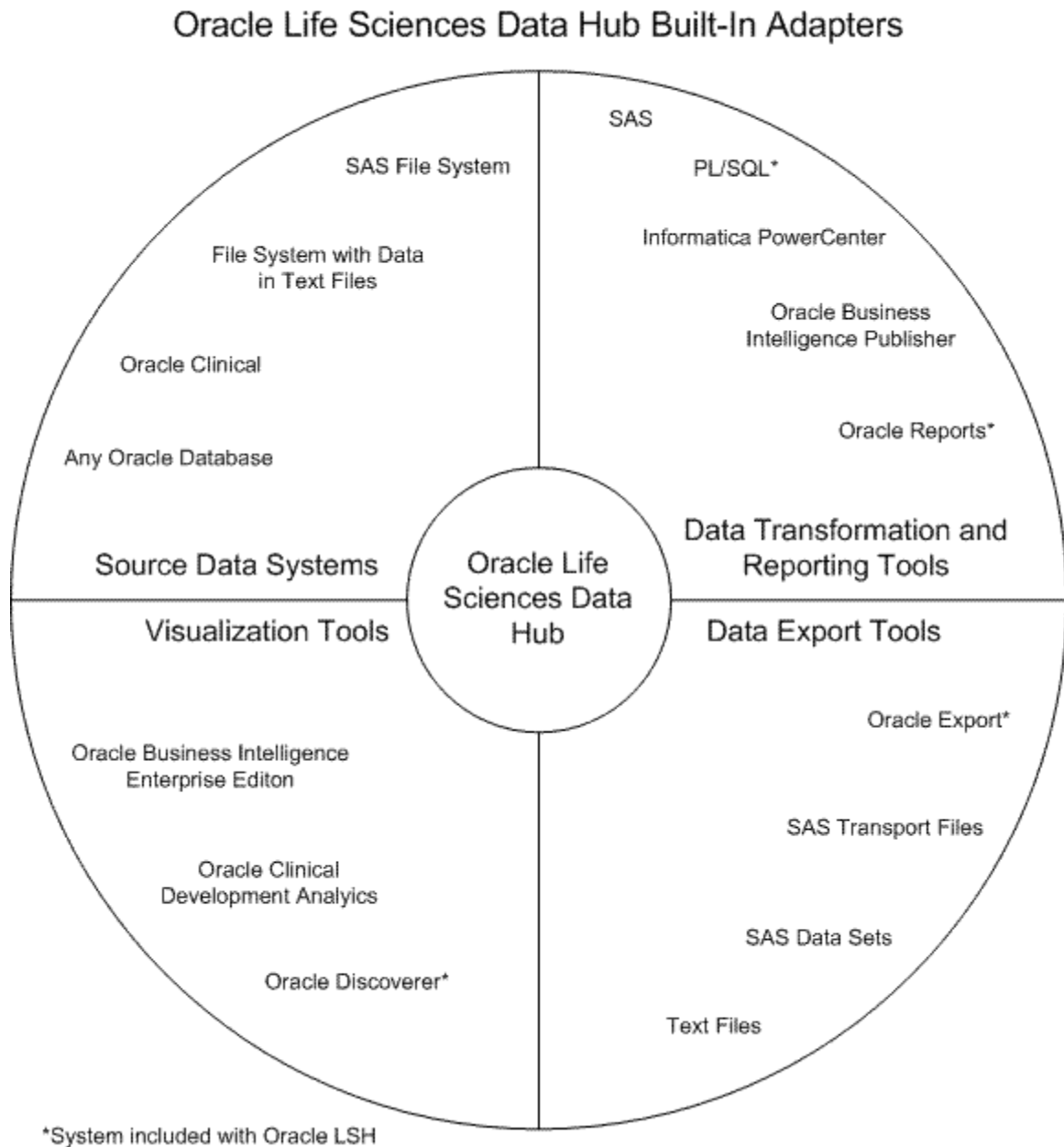
- **Oracle Enterprise Edition RDBMS.** All of Oracle LSH's database tier components use the Oracle Enterprise Edition database server and database.
- **Oracle Applications Schema.** The Oracle Applications Schema is the schema installed as part of the Oracle Applications installation.
- **Oracle Workflow.** Oracle LSH uses Oracle Workflow to allow users to create and execute Workflow programs. Oracle Workflow is installed with Oracle Applications.
- **Oracle Warehouse Builder (OWB).** Oracle LSH uses the OWB Java Server and schema for running and tracking internal and external jobs.
- **Oracle Thesaurus Management System (TMS).** Oracle LSH uses TMS's database tier internally to run its classification system, which is a required part of Oracle LSH functionality.

A.4 Adapters to External Systems

Oracle LSH is intended for integration with other systems for a variety of purposes. Each external system integrated with Oracle LSH requires an adapter to handle whatever communication and exchange is required, depending on the purpose of the integration and the technical specifications of the external system. Oracle LSH is shipped with built-in adapters for loading data into Oracle LSH from other systems, for developing and executing programs operating on Oracle LSH data, and for exporting data out of Oracle LSH.

[Figure A-2](#) shows the adapters that are included with Oracle LSH. Adapters to other systems may be available from third parties.

Figure A-2 Oracle LSH Adapters by Functionality



A.4.1 Source Data Systems

LSH includes adapters to external systems from which you can load data into Oracle LSH:

- **SAS.** The SAS adapter allows you to load SAS data sets into Oracle LSH.
- **Text.** The Text adapter allows you to load text files from any system into Oracle LSH.
- **Oracle Databases.** The general Oracle Databases adapter allows you to load data from any Oracle database into Oracle LSH.

- **Oracle Clinical.** The Oracle Clinical adapter family includes eight specialized adapters for loading the following data and metadata from Oracle Clinical:
 - Data Extract SAS Views
 - Data Extract Oracle Views
 - Global Library
 - Labs
 - Study Data
 - Study Design and Definition
 - Stable Interface Tables
 - Randomization

A.4.2 Data Transformation and Reporting Tools

Oracle LSH includes adapters to set up the following systems as integrated development environments (IDEs) for developing and generating programs:

- SAS
- PL/SQL
- Informatica PowerCenter
- Oracle Reports
- Oracle Business Intelligence Publisher

A.4.3 Visualization Tools

Oracle LSH includes adapters to allow the following systems to display visualizations of Oracle LSH data:

- Oracle Discoverer
- Oracle Business Intelligence Enterprise Edition (OBIEE) Answers
- Oracle Clinical Development Analytics—to view visualizations in OBIEE Answers of Oracle Clinical data in Oracle LSH

A.4.4 Data Export Tools

Oracle LSH includes adapters to allow exporting Oracle LSH data:

- Oracle Export
- SAS—Transport Files and Data Sets
- Text Files

Patching the OWB Service

Following the instruction for installing OWB and integrating it with LSH in the *Oracle LSH Installation Guide* more than once **may cause harm**. If you have already installed OWB and Oracle LSH and followed the instructions for integrating the two, and then need to patch the service, do the following:

1. Copy the patch, a single zipped file called `cdr_owb_jars.zip`, into the `$ORACLE_HOME/owb/cdr` directory.
2. Using GNU zip or another zip utility, unzip `cdr_owb_jars.zip` to extract the following files:
 - `cdr_owb_operators.jar`
 - `cdr_owb_adapters.jar`
3. Stop the OWB service. Follow instructions in the "Stopping and Starting the Oracle Warehouse Builder Service" section of the services and queues chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.
4. Restart the OWB service. Follow instructions in "Stopping and Starting the Oracle Warehouse Builder Service" section of the services and queues chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.

Note: If you are using OWB 11.2.0.1, you must stop and start the OWB service as the user `CDR_RTREPOS`. If you are using OWB 11.2.0.1, you must stop and start the OWB service as the user `OWBSYS`.

Note: Information about stopping and starting the Oracle Warehouse Builder (OWB) Service is available in the "Job Execution Problems" section in the troubleshooting chapter of the *Oracle Life Sciences Data Hub System Administrator's Guide*.



Installing Real Application Clusters (RAC)

Oracle Life Sciences Data Hub (Oracle LSH) Release 2.1.4 is certified for use with Oracle Real Application Clusters (RAC).

C.1 Required Setup

1. Complete all instructions in this installation guide.
2. Create a cluster according to your requirements as described in Section 3.1.1 of My Oracle Support article 823586.1, *Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 11i*.

C.2 Installing RAC

Instructions for installing RAC are in My Oracle Support article 823586.1, *Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 11i*. The following notes supplement article 823586.1. The section numbers below refer to sections in article 823586.1.

1. Read Section 1.1 to understand RAC terminology.
2. Follow instructions in Section 1.2, *Configuration Prerequisites*, Step 3, to apply Oracle Applications patches. Note that 11i.ATG_PFH RUP6, patch 5903765, is not required because you have already installed RUP7 according to the instructions in the *Oracle Life Sciences Data Hub Installation Guide*. However, the other patches are required.
3. Follow instructions in Section 3.1, *Install Oracle Clusterware 11g R2*. This is a critical step; follow all the steps in this section carefully. For detailed installation requirements refer to the *Oracle Grid Infrastructure Installation Guide* for your operating system at <http://www.oracle.com/pls/db112/lookup?id=CWGEN>.

Be sure to verify that the cluster is set up correctly as described in Section 3.1.7, Step 3. The grid infrastructure should now be running on all nodes.

4. Follow instructions in Section 3.2 to install Oracle Database 11gR2 on each additional node of your cluster. Make sure that:
 - the path to the 11gR2 Oracle Home is identical on each node
 - all database patches that have been applied to your primary Oracle Home are applied on every other Oracle Home
5. Follow instructions in Section 3.3 to configure the listener for Oracle Database 11gR2.

6. Follow instructions in Section 3.4 to configure your preferred type of shared storage.
7. Follow instructions in Section 3.5 to convert the 11gR2 database to RAC. There are three options for the RAC conversion. Oracle LSH was tested with the 'rconfig' option. The following instructions are intended to clarify the instructions provided after Step 5 of this section on creating the spfile:
 - a. Move the spfile to a shared location so that all nodes can access the spfile.
 - b. Back up the existing init.ora file.
 - c. Open the init.ora file and add a new parameter:

```
spfile= '<Path of spfile on shared disk>/spfile<ORACLE_SID>.ora'
```
 - d. Start up the database using the new init.ora file.
 - e. Continue with Step 9 to run rconfig and complete this section. After successfully running rconfig, the database instances and listener services should be running on all the database nodes.
8. Follow instructions in Section 3.7 to enable AutoConfig. Follow all steps carefully. Do not proceed further until you have successfully run AutoConfig on every node.
9. Follow instructions in Section 3.8 to configure the Applications environment for 11gR2 RAC on all application tier nodes.
10. Follow instructions in Section 3.9 to configure Parallel Concurrent Processing.