

Oracle® Thesaurus Management System

Installation Guide

Release 5.2.1

E83500-01

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This guide describes how to install, configure, and upgrade Oracle Thesaurus Management System.

Oracle Thesaurus Management System Installation Guide, Release 5.2.1

E83500-01

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Preface

Audience

The audience for this installation guide is database administrators (DBAs) and system administrators. Installing Oracle Thesaurus Management System requires the skills listed below. If you want assistance with your installation, engage Oracle Consulting.

Database Administrators

Installing Oracle Thesaurus Management System requires a level of knowledge equivalent to having mastered the material in the Oracle Architecture and Administration course for DBAs. You must be able to read and edit SQL*Plus scripts, run SQL scripts, and review logs for Oracle errors. For ongoing administration, additional training as a DBA is essential.

System Administrators

Installing and maintaining an Oracle Thesaurus Management System network requires expertise in the following skill areas:

- UNIX operating systems
 - Creating and managing user accounts and groups
 - Installing Oracle database software and patches
 - Identifying space on a file system for Oracle database tablespaces
 - Setting and using environment variables
- Microsoft Windows operating systems
 - Creating and managing user accounts and groups
 - Installing Oracle software
 - Managing settings through the Control Panel and Administrative Tools
 - Managing network printers
 - Creating services

User Documentation

The most current Oracle Clinical and Oracle Thesaurus Management System Remote Data Capture (RDC) Onsite user documentation is located on oracle.com at:

<https://docs.oracle.com/health-sciences/tms-521/index.html>

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

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

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Prepare to Install Oracle Thesaurus Management System

This chapter includes:

- Section 1.1, "Check Installation Documentation"
- Section 1.2, "Architecture"
- Section 1.3, "Network Topology"
- Section 1.4, "Software Requirements"
- Section 1.5, "Supported Configurations with Oracle Data Guard and RAC"
- Section 1.6, "Download the Software"
- Section 1.7, "Use the Silent Installer (Optional)"
- Section 1.8, "Choose a Character Set"
- Section 1.9, "Download the Latest TMS Patches"
- Section 1.10, "Integrate TMS with Other Products and Options"

1.1 Check Installation Documentation

Check these additional resources.

1.1.1 My Oracle Support Articles

Visit the My Oracle Support website at <http://support.oracle.com> for the most up-to-date installation information, including alerts, release notes, bulletins, White Papers, and patches.

The My Oracle Support website includes these important installation topics:

- *Oracle Thesaurus Management System 5.2.1 Release Notes* (Article ID 2281526.1)
- *OLSA Known Installation and Configuration Issues* (Article ID 1572864.1)
- *Oracle Clinical, Oracle Clinical Remote Data Capture, and Oracle Thesaurus Management System Security Configuration Guide* available with the user documentation.
- *Oracle Health Sciences (Life Sciences/ Pharmaceutical/ Healthcare) Supported Technology Stacks* (Article ID 180430.1)
- *Oracle Thesaurus Management System Installation Verification Test* (Article ID 398443.1)

- *Oracle Thesaurus Management System Summary of Patches Available* (Article ID 132626.1)
- *TMS Product Information Center* page (Article ID 1343408.1): Check here for new notes and White Papers, including the performance White Paper and the Installation Verification Test, which are not available at the time of publication of this document.

1.1.2 User and Installation Documentation

The most current Oracle Thesaurus Management System user documentation, including this guide and the *Oracle Clinical*, *Oracle Clinical Remote Data Capture*, and *Oracle Thesaurus Management System Security Configuration Guide*, is available at:

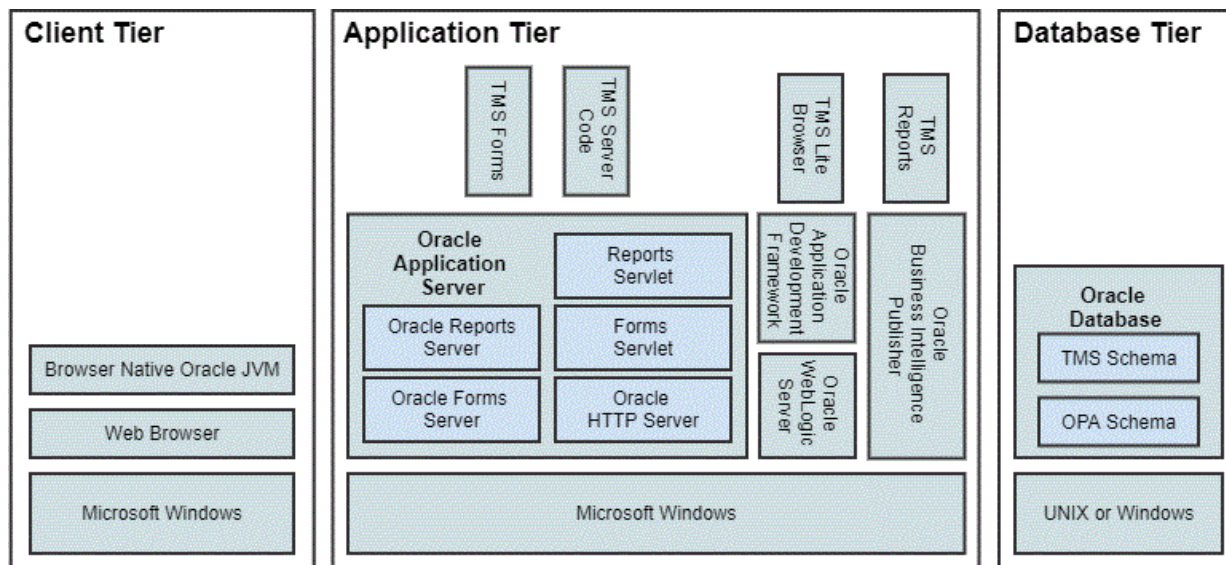
<https://docs.oracle.com/health-sciences/tms-521/index.html>

1.2 Architecture

The architecture for TMS consists of three tiers: the database tier, the application tier, and the client tier.

Figure 1–1 illustrates the architecture and technology stack for TMS.

Figure 1–1 TMS Architecture and Technology Stack



The **database tier** in a TMS environment includes the Oracle Database 12c Release 1 (12.1.0.2) software and the TMS database(s). In past releases, the database tier was called the back end.

The **application tier** includes:

- **TMS Forms Server** — The Forms Server performs all forms processing, communicates the display changes to the client, and calls forms to query, update, select, and delete data from the database.
- **TMS Server Code**— The Server Code consists of scripts used to create TMS databases.

- **TMS Reports Server** — The Reports Server runs most batch reports, schedules all jobs, and creates PDF output for reports. Most TMS reports interface with the TMS Reports Server.
- **TMS Browser** — The TMS Browser runs in a browser and does not require a plug-in. It allows users to browse dictionary terms and, if fully integrated with a clinical data system like Oracle Clinical, source terms and associated external system information.

The **client tier** communicates users' keystrokes and mouse movements to the application tier. It requires a browser and Browser Native Oracle JVM.

1.3 Network Topology

Figure 1–2 Oracle Thesaurus Management System Network Topology

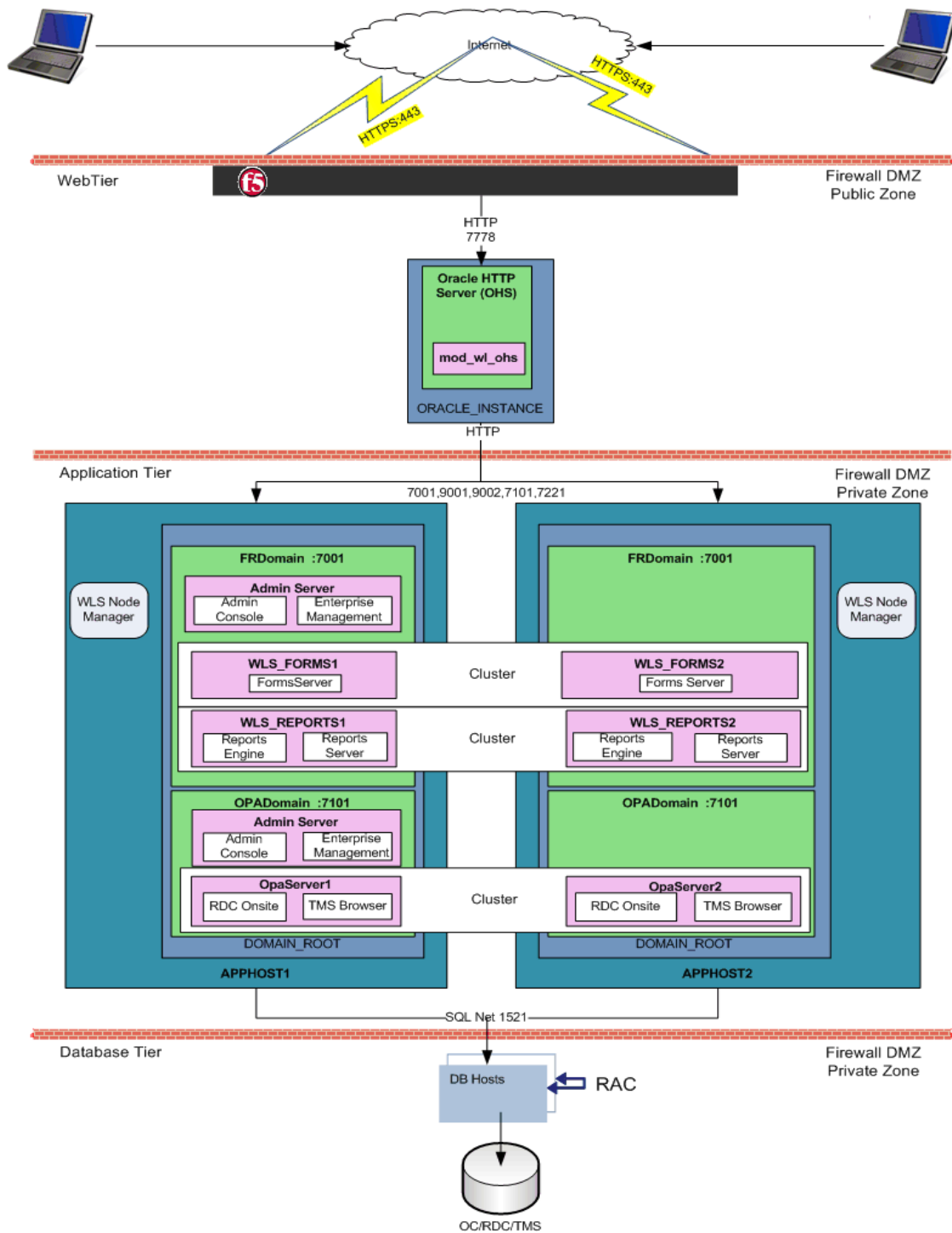


Figure 1–2 shows how the Oracle Thesaurus Management System components and technology stack are related and provides an example of how the product can be installed. The left side of the Application Tier—APPHOST1—is a standard installation, while the whole—with APPHOST2—shows a multi-node middle tier installation using Oracle Clusterware.

In the **client tier**, end users' browsers communicate via HTTPS with the Oracle HTTP Server (OHS), which is located inside a firewall. When users log in, OHS detects the product they logged in to and consults formsweb.cfg to connect them to the appropriate application tier service.

The **application tier** comprises Oracle Application Server and Oracle WebLogic Server. The integrated tier has two domains:

- **FRDomain** includes the Oracle Forms runtime service and Forms Server, and the Oracle Reports Server and engine, which run Oracle Thesaurus Management System forms and reports. It also includes the WebLogic Server Admin Server and Oracle Enterprise Manager.

The Oracle Application Server domain must be named FRDomain and must use port number 7001.

- **OPADomain** includes the WebLogic Server Administration Console, WebLogic Server Java, and OpaServer1, which are required to run the TMS Lite Browser and TMS reports. It also contains the database connections. Note that when you install the Oracle Enterprise Manager in the FRDomain, it serves for monitoring the OPADomain as well.

The TMS Installer automatically creates the OPADomain. OPADomain must use port number 7101.

You can distribute the application tier over multiple nodes in a network using Oracle Clusterware. The Admin Server is required only on the primary node.

The WebLogic Server Node Manager exists outside the domains on the host. The Oracle Thesaurus Management System Installer automatically stops the Node Manager before each Java deployment and starts the Node Manager afterward so you do not need to do that.

The **database tier** includes Oracle Database with Oracle Thesaurus Management System. The diagram shows a distributed installation integrated with Oracle Clinical using Oracle Real Application Clusters (RAC); this is one example of how it can be installed.

1.4 Software Requirements

- Table 1–1, "Oracle Thesaurus Management System Database Tier Technology Stack"
- Table 1–2, "Oracle Thesaurus Management System and TMS Lite Browser Application Tier Technology Stack"
- Table 1–3, "Oracle Thesaurus Management System and TMS Lite Browser Client Tier Technology Stack"

For technology stack updates, see (ID 180430.1) on My Oracle Support. *Oracle Health Sciences (Life Sciences/ Pharmaceutical/ Healthcare) Supported Technology Stacks* (Article ID 180430.1).

Table 1–1 Oracle Thesaurus Management System Database Tier Technology Stack

Component	Supported Version
Operating System	Oracle Linux 7.2 with Unbreakable Enterprise Kernel (UEK) 64 bit (US English) Oracle Linux 6.4 with Unbreakable Enterprise Kernel (UEK) 64 bit (US English) Oracle Solaris SPARC 10 and 11; 64-bit architecture (US English) HP Itanium 11.31; 64-bit architecture (US English) Windows Server 2012 Release 2 (US English)
Oracle Database	Oracle Database 12c Release 1 (12.1.0.2) Enterprise Edition, 64-bit
Compiler	For Oracle Linux x86-64: GCC-4.8.3 For Oracle Solaris SPARC 10 and 11: Sun Studio 12 For HP Itanium: HP C/aC++ for Integrity Servers B3910B A.06.27
Optional Software	Oracle Real Application Clusters (RAC) on Sun, HP, and Linux, including Exadata Oracle Virtual Machine (OVM) 3.2 Pro*C/C++ Release 12.1.0.1

Table 1–2 Oracle Thesaurus Management System and TMS Lite Browser Application Tier Technology Stack

Component	Supported Version
Operating System	Microsoft Windows Server 2012 Release 2
Oracle WebLogic Server	Oracle WebLogic Server 12c Release 2 (12.2.1.2)
Oracle Fusion Middleware Infrastructure	Oracle Fusion Middleware Infrastructure 12c Release 2 (12.2.1.2)
Oracle Application Development Framework	Oracle Application Development Framework 12c Release 2 (12.2.1.2) Note: Included with Oracle Fusion Middleware Infrastructure.
Oracle Forms and Reports	Oracle Forms and Reports 12c Release 2 (12.2.1.2)
Oracle Java Development Kit (JDK)	Oracle Java Development Kit 1.8 Update 111 or later (also known as JDK 1.8 or JDK 8)
Oracle Java Runtime Environment (JRE)	Oracle Java Runtime Environment 1.8 (also known as JRE 1.8 or JRE 8)
Microsoft Visual Studio	Visual C++ in Microsoft Visual Studio 2012 (x64 distributed)—Required for Oracle WebLogic Server 12c (12.2.1.2) and Oracle Forms and Reports 12c (12.2.1.2). Can be used to invoke API methods from custom clients.

Table 1–3 Oracle Thesaurus Management System and TMS Lite Browser Client Tier Technology Stack

Component	Supported Version
Operating Systems	Microsoft Windows 10; 32-bit or 64-bit architecture (US English) Microsoft Windows 7; 32-bit or 64-bit architecture (US English) Microsoft Windows Server 2012, Release 2 (US English) Microsoft Windows 8/8.1; 64-bit architecture
Mobile Operating Systems	iOS 7.1.2—iPad and OS X 10.7.5—for the TMS Lite Browser only
Supported Browsers	Microsoft Internet Explorer versions depend on the operating system: <ul style="list-style-type: none"> ■ Microsoft Windows 10: Internet Explorer 11 and Microsoft Edge v25 ■ Microsoft Windows 7 (64-bit): Internet Explorer 11 ■ Microsoft Windows Server 2008, Release 2, Service Pack 1, 64-bit: Internet Explorer 11 ■ Microsoft Windows 8/8.1, 64-bit: Internet Explorer 11 Safari 7.0.3 on iOS 7.1.2—for TMS Lite Browser only
Adobe Reader	Releases 8.x, 9.x, 10.x, 11.x (US English). Required for viewing PDF reports.

1.4.1 Database Tier Operating System Requirements

To verify that your system fits the requirements listed in [Table 1–1, "Oracle Thesaurus Management System Database Tier Technology Stack"](#) do the following in UNIX or Windows:

UNIX To verify UNIX operating system details, enter the following command:

```
uname -a
```

In addition, to verify the update version for Linux, enter the following command:

```
cat /etc/issue
```

Windows To verify Windows operating system details, navigate to the Control Panel, then System and Security, then System.

1.5 Supported Configurations with Oracle Data Guard and RAC

Oracle Thesaurus Management System 5.2.1 supports a distributed environment over a network or within an Exadata machine without using Oracle Thesaurus Management System replication.

This section contains:

- [Supported Configurations with Oracle Real Application Clusters \(RAC\)](#)
- [Supported Configurations with Oracle Data Guard](#)

See information about running PSUB in a RAC environment in the *Oracle Clinical Installation Guide*.

1.5.1 Supported Configurations with Oracle Real Application Clusters (RAC)

Oracle Clinical was re-architected in Release 5.0 to support Oracle Real Application Clusters (RAC). The Parameterized Submission process (PSUB), which runs and schedules most jobs in Oracle Clinical, no longer uses DBMS pipes, which can only be

used within a single database instance, for communication between the user session and the PSUB service. It now uses Oracle Advanced Queuing.

Because databases have traditionally been constrained to run only on a single server, customers have typically followed a hardware "scale-up" strategy for the database tier: Whenever the database server becomes a bottleneck to overall application performance, the server is replaced with a larger, faster machine. While this approach is well understood, it can be highly disruptive to ongoing business.

Oracle Real Application Clusters (RAC) provides an alternative approach for scaling database performance. It is designed to tolerate server failures with little impact to mission-critical applications and users. As workloads and user connections are increased, additional nodes (servers) can be easily added to the cluster. Each server runs against the same database simultaneously. This approach is less disruptive to ongoing business operations, more reliable, and less expensive to implement.

RAC nodes can be individual computers in a network or nodes on an Oracle Exadata machine. RAC shares the database internally among all nodes so that even if the node where the database was originally installed goes down, the other nodes can still access the database. You can configure RAC nodes as follows:

1.5.1.1 Node 1: Install and Set Up Everything Required for Oracle Clinical

- Oracle Real Application Clusters (RAC)—installed with Oracle Database
- Oracle Thesaurus Management System database server code
- Oracle Thesaurus Management System database(s)
- Run the Oracle Clinical PSUB service on this node (one per database)
- Create user-specific PSUB log file directories for randomization, batch data load, and labs batch jobs that require input files
- Enter PSUB-related values in local reference codelist OCL_STATE
- Install SAS 9.3 (Optional)

1.5.1.2 Node 2: Install the Minimum Required as a RAC Node

Install Oracle Database with Oracle Real Application Clusters (RAC).

You can have multiple nodes set up this way, each accessing the same database(s). Additional nodes set up this way improve database performance.

1.5.1.3 Node 3: Install Everything Required for Oracle Clinical as Backup

In case either the PSUB service or Node 1 itself fails, install all required software on another node so that you can start the PSUB service as quickly as possible to continue normal operation. PSUB can run on only one server at a time.

A node set up this way also improves performance but requires additional maintenance; any Oracle Thesaurus Management System database server patches you install on the primary node (Node 1 in this example) must also be installed on this node.

- Install Oracle Real Application Clusters (RAC) and Oracle Database
- Install Oracle Thesaurus Management System database server code (includes PSUB server code)
- Create the same PSUB directory structure as on Node 1 so that the OCL_STATE reference codelist values on the middle tier still work. If you use NFS to share the files, users will still be able to access files for jobs performed on the other node

unless the node itself fails. For more information see the PSUB chapter in the *Oracle Clinical Installation Guide*.

Note: You do not need to reinstall the Oracle Thesaurus Management System database.

You can have multiple nodes set up this way, each accessing the same database(s).

1.5.1.3.1 Recommended Options for RAC Oracle Thesaurus Management System 5.2.1 is supported with an Oracle Real Applications Cluster (RAC) distributed database installation on UNIX. Oracle recommends:

- Configuring a Maximum Availability Architecture (MAA) in which you use Oracle RAC for both your primary and standby database, synchronized using Oracle Data Guard.
- Using the Single Client Access Name (SCAN) option. This RAC feature provides a single name for clients to access Oracle databases running in a cluster. The benefit is that the client's connect information does not need to change if you add or remove nodes in the cluster. Having a single name to access the cluster allows clients to use the EZConnect client and the simple JDBC thin URL to access any database running in the cluster, independent of which server(s) in the cluster the database is active. SCAN provides load balancing and failover for client connections to the database. The SCAN works as a cluster alias for databases in the cluster.
- SCAN is configured during the installation of Oracle Grid Infrastructure that is distributed with Oracle Database. Oracle Grid Infrastructure is a single Oracle Home that contains Oracle Clusterware and Oracle Automatic Storage Management (ASM). You must install Oracle Grid Infrastructure first in order to use Oracle RAC.
- *Oracle® Database 2 Day + Real Application Clusters Guide* both at http://docs.oracle.com/cd/E16655_01/nav/portal_16.htm
- *Grid Infrastructure Single Client Access Name (SCAN) Explained* (My Oracle Support Article ID 887522.1).
- Oracle Data Guard and other high availability documentation at http://docs.oracle.com/database/121/nav/portal_14.htm

1.5.2 Supported Configurations with Oracle Data Guard

The following Oracle Data Guard configurations are supported. All Oracle Thesaurus Management System components (database server, database) must be installed on each node.

- Standalone server with Oracle Data Guard failover
- Oracle Clusterware for One Node with Oracle Data Guard failover
- Oracle RAC One Node with Oracle Data Guard failover
- Multi-node RAC with Oracle Data Guard failover

Oracle Data Guard is included in Oracle Database Enterprise Edition.

1.6 Download the Software

- Section 1.6.1, "Create Staging Areas"
- Section 1.6.2, "Download the Oracle Thesaurus Management System 5.2.1.0.x Media Pack"
- Section 1.6.3, "Download Patches from My Oracle Support"
- Section 1.6.4, "Download Oracle Database Client"
- Section 1.6.5, "Download Oracle Java Development Kit"
- Section 1.6.6, "Download the Java Runtime Environment"
- Section 1.6.7, "Download Adobe Reader"
- Section 1.6.8, "Download Oracle Critical Patch Updates"

1.6.1 Create Staging Areas

1. Create one staging area each on the database server and on the application server.
2. Create one directory, in each staging area, for each media pack disk, patch, or other software unit, and give the directory a logical name.

Table 1–4 Software to Download to the Database Server Staging Area

Disk or Patch Name	Source
Oracle Thesaurus Management System 5.2.1 Documentation	https://docs.oracle.com/health-sciences/tms-521/index.html
Oracle Database 12c Release 1 (12.1.0.2) — Linux x86-64	Media pack
Oracle Database 12c Release 1 (12.1.0.2) — Solaris Sparc 64	Media pack
Oracle Database 12c Release 1 (12.1.0.2) — HP IA	Media pack
Oracle Database 12c Release 1 (12.1.0.2) — Windows x64	Media pack

Table 1–5 Software to Download to the Application Server Staging Area

Disk or Patch Name	Source
Oracle Thesaurus Management System 5.2.1 Documentation	https://docs.oracle.com/health-sciences/tms-521/index.html
Oracle Thesaurus Management System Release 5.2.1	Media pack
Oracle WebLogic Server 12c Release 2 (12.2.1.2)	Media pack
Oracle Fusion Middleware Infrastructure Installer for Oracle WebLogic Server 12c	Media pack
Oracle Forms and Reports 12c Release 2 (12.2.1.2) for Windows x64 (part of Oracle Application Server)	Media pack
Oracle Database 11g Release 2 Client (11.2.0.1.0) for Microsoft Windows (x64); see Section 1.6.4, "Download Oracle Database Client"	https://edelivery.oracle.com
Oracle Java Database Connectivity (patches 19028811 and 21043834)	My Oracle Support
Oracle Reports Developer patch 22334822	My Oracle Support

Table 1–5 (Cont.) Software to Download to the Application Server Staging Area

Disk or Patch Name	Source
Oracle Java Development Kit (JDK) 1.8; see Section 1.6.5, "Download Oracle Java Development Kit"	My Oracle Support
Java Runtime Environment (JRE) 1.8; see Section 1.6.6, "Download the Java Runtime Environment"	www.oracle.com
Adobe Reader; see Section 1.6.7, "Download Adobe Reader"	http://www.adobe.com/
Microsoft Visual C++ 2012 Redistributable (x64) - 11.0.61030	https://www.microsoft.com/en-us/download/details.aspx?id=30679

1.6.2 Download the Oracle Thesaurus Management System 5.2.1.0.x Media Pack

Note: 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 software:

1. Go to <http://edelivery.oracle.com> and log on.
2. From the **Search by** drop-down list, select **Product**.
3. In the field next to Search by, type Oracle Thesaurus Management System.
4. From the **Select Platform** drop-down list, select the checkbox for your operating system.
5. Click **Continue**.
6. Review the media packs you want to download and click **Continue**.
7. Check the agreement and click **Continue**.
8. Download each disk into the appropriate directory in the appropriate staging area as shown in Table 1–4, "Software to Download to the Database Server Staging Area". Each download consists of a single file named *part_number.zip*.
9. Extract each *part_number.zip* file into a meaningfully named directory.
10. For the Oracle Thesaurus Management System software, extract TMS_Win_MiddleTier_Installer.zip on the application server.

1.6.3 Download Patches from My Oracle Support

Note: If you have already performed these steps for Oracle Clinical, skip to the next section.

To download each required patch indicated in Section 1.6.1, "Create Staging Areas" from My Oracle Support:

1. Go to My Oracle Support at <https://support.oracle.com> and sign in.
2. Click the **Patches & Updates** tab, then enter the patch number in the **Patch Name or Number** field and click **Search**.

3. Click the link for your operating system and download the patch file to the appropriate directory in the staging area.
4. Extract the .zip file.

1.6.4 Download Oracle Database Client

Download Oracle Database 11g Release 2 Client (11.2.0.1.0) for Microsoft Windows (x64) to the application server staging area.

1. Go to <https://edelivery.oracle.com> and log on.
2. In the **Search by** field, type Oracle Database Client 11.2.0.1.0.
3. Click **Select Platform** and select the checkbox for your operating system.
4. Click **Continue**.
5. Review the software you are about to download and then click **Continue**.
6. Read the license agreement and select the checkbox to confirm that you have read and accept the terms, then click **Continue**.
7. In the File Download dialog box, click **Download**.

1.6.5 Download Oracle Java Development Kit

To download and install JDK 1.8.0_111:

1. Go to My Oracle Support at <https://support.oracle.com> and sign in.
2. In the Search Knowledge Base field in the upper right, enter: 1439822.1
A page appears with a list of documents.
3. Click the link *All Java SE Downloads on MOS* [Article ID 1439822.1].
4. Scroll down to the list of JDK versions to **Oracle JDK 8 Update 111** (Patch 24359908).

Note: Check *Oracle Health Sciences (Life Sciences/ Pharmaceutical/ Healthcare) Supported Technology Stacks* (Article ID 180430.1) on My Oracle Support to see if a more recent JDK version is supported.

5. Click the patch number link.
6. Select Microsoft Windows x64 (64-bit) and click **ReadMe** to read the release notes and **Download** to download the patch to the staging area.

Installation instructions are in [Section 3.4, "Install Oracle Java Development Kit."](#)

1.6.6 Download the Java Runtime Environment

You must make Java Standard Edition (SE) Runtime Environment (JRE) 1.8.0_111 available for download to user computers so that they can use Oracle Thesaurus Management System. You will configure the Launch page to allow users to download JRE in [Section 7.4, "Making the Java Runtime Environment Available for Download"](#). In preparation for this, download JRE to the application server.

Note: Check *Oracle Health Sciences (Life Sciences/ Pharmaceutical/ Healthcare) Supported Technology Stacks* (Article ID 180430.1) on My Oracle Support to see if a more recent JRE version is supported.

To download JRE 8 Update 111:

1. On the application server, go to the following Oracle website:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

2. Under Java SE 8u111, click the **Download** button for JRE.
3. Select the **Windows x86 Offline** version.

Note: This is the version for 32-bit browsers (not operating systems). The default browser for Windows machines is 32-bit, but Windows machines also come with a 64-bit version. To support the 64-bit version, you must either customize your Launch page to point to `sunjpi64.exe` or instruct users with 64-bit browsers to download the 64-bit version of JRE from the link in Step 1.

4. Download the file to the staging area in a recognizably named directory.

1.6.7 Download Adobe Reader

Adobe Reader is required on the Reports Server and on client computers. At this time, no particular version is required.

1. Download Adobe Reader from <http://www.adobe.com>.

1.6.8 Download Oracle Critical Patch Updates

Every quarter, Oracle provides Critical Patch Updates (CPUs) to address security vulnerabilities. The latest CPU patch contains all the fixes from previous patches.

Check My Oracle Support article ID 121863.1, *Oracle Health Sciences Supported Technology Stacks*, for the latest CPU patch tested with Oracle Health Sciences applications. The article includes a link to separate articles about each one. Download the required patches on every computer with an Oracle Home.

1.7 Use the Silent Installer (Optional)

You can run any of the Oracle Universal Installers—including the Oracle Thesaurus Management System Installers—in silent mode. This may be useful to promote uniform installations in many sites or on many computers.

TMS ships with `.rsp` (response) files that include the parameter prompts and sample parameter values for each component. They are located on the media pack's Oracle Thesaurus Management System 5.2.1 disk in `TMS\application_server.zip\Disk1\stage\Response`, and include:

Table 1–6 Response Files and Parameter Information

Component Installed	Response File	Parameter Information
TMS DB Server	oracle.pharma.tms.server.Complete.rsp	Section 4.1.1
TMS Database	oracle.pharma.tms.db.install.Master.rsp	Section 4.3.2
TMS Database Registration	oracle.pharma.tms.db.register.Custom.rsp	Section 4.5.3
TMS Front End	oracle.pharma.tms.frontend.Custom.rsp	Section 5.2.1
TMS Reports Server	oracle.pharma.tms.reportserver.Complete.rsp	Section 5.4.2
TMS Upgrade	oracle.pharma.tms.db.upgrade.Master.rsp	Section 6.4.3

1. Open the file in a text editor and enter values directly.
2. Run the file.

In UNIX:

```
./runInstaller -responseFile response_file_name
```

In Windows (as an administrator):

```
setup.exe -responseFile response_file_name
```

3. When you run the file at each location, edit the local parameters as required.

Alternatively, you can run the Installer once, entering values manually, and record the process to create a response file.

Run the file.

In UNIX:

```
./runInstaller -record -destinationFile response_file_name
```

In Windows (as an administrator):

```
setup.exe -record -destinationFile response_file_name
```

For more information see Oracle Universal Installer documentation at:

- http://docs.oracle.com/cd/E18790_01/doc/em.112/e12255/oui3_response_files.htm
- http://docs.oracle.com/cd/E11882_01/install.112/e24321/app_nonint.htm#CIHEGBII

1.8 Choose a Character Set

Note: If you have already installed or upgraded Oracle Clinical, you should have already selected a character set and can skip this section.

Oracle Health Sciences supports certain character sets for each product or each combination of integrated products. For TMS, **Oracle strongly recommends that you use the AL32UTF8 character set.** TMS also supports UTF8, US7ASCII, WE8ISO8859P1, or any single byte character set.

TMS uses the NLS_LANG environment variable to control the **language**, **territory**, and **character set** used for database connections. The NLS_LANG variable concatenates the three components as LANGUAGE_TERRITORY.CHARSET.

The TMS Installer sets the default value for the TMS application tier to AMERICAN_AMERICA.AL32UTF8. You set the value during database creation outside the Installer.

- You must set the CHARSET component of the NLS_LANG variable to **match the character set of the database**.
- You must use the **same character set on the database tier and the application tier**. If you select US7ASCII for the database tier and AL32UTF8 or UTF8 for the application tier, for example, Oracle Clinical stores some special characters incorrectly in the database.

1.9 Download the Latest TMS Patches

Check *Oracle Thesaurus Management System Summary of Patches Available* (Article ID 132626.1) on My Oracle Support for any TMS patches for this release and download them. You will apply these patches in [Section 7.1, "Patch TMS"](#).

1.10 Integrate TMS with Other Products and Options

You can integrate TMS with other products and options and develop applications that read data from TMS. Each product listed below must be purchased separately.

1.10.1 Oracle Clinical Remote Data Capture Onsite

Oracle Clinical Remote Data Capture Onsite (RDC Onsite) is an electronic data capture (EDC) Web application that works with studies that are defined and designed using Oracle Clinical. You can use RDC Onsite to collect, perform immediate validation on, review, verify, approve, and report clinical data collected during a patient visit in a clinical study. Patient data is stored in the Oracle Clinical database. You can use Oracle Clinical features including batch validation, discrepancy management, mass changes, and data extract with data collected using RDC Onsite.

1.10.2 Oracle Clinical

When fully integrated with Oracle Clinical, TMS processes new and updated patient data during each Oracle Clinical batch validation and either automatically codes incoming data—those that match standard terms exactly or match previously manually coded terms exactly—or creates an omission that must be manually coded in TMS. TMS can return to Oracle Clinical related terms from one or more levels of the standard terminology—for example the preferred term and system organ class in MedDRA, or the preferred name and Anatomical-Therapeutic-Chemical Level 1 term in WHO-Drug—for each coded term, associated with the correct RDCI (collected CRF).

You can install TMS and Oracle Clinical on the same application tier or on different application tiers. You must install both products on the same database if you want integrate the two systems. Oracle recommends installing Oracle Clinical before TMS.

For more information, see the *Oracle Thesaurus Management System Installation Guide* and the *Oracle Thesaurus Management System User's Guide*.

1.10.3 Oracle Health Sciences Data Management Workbench and Oracle Life Sciences Data Hub

Oracle Health Sciences Data Management Workbench (DMW) allows you to do data management on InForm and lab data in a single location. You can integrate TMS with DMW to code InForm and lab terms in TMS.

When fully integrated with Oracle Life Sciences Data Hub (LSH), TMS processes new and updated patient data during each Oracle LSH transformation and either automatically codes incoming data—those that match standard terms exactly or match previously manually coded terms exactly—or creates an omission that must be manually coded in TMS and a discrepancy in Oracle LSH. TMS can return to Oracle LSH related terms from one or more levels of the standard terminology—for example the preferred term and system organ class in MedDRA, or the preferred name and Anatomical-Therapeutic-Chemical Level 1 term in WHO-Drug—for each coded term, associated with the collected CRF.

1.10.4 Custom Applications for TMS

You can build custom applications for TMS:

See the *Oracle Thesaurus Management System Technical Reference Manual* for proprietary information about data access, internal tables, and APIs. Contact Oracle Support to obtain a free electronic copy of the manual. You must be a licensed customer.

Install Oracle Database

If you are upgrading TMS, skip to Chapter 6, "Upgrading Oracle Thesaurus Management System to Release 5.2.1".

If you have already performed these steps as part of installing or upgrading Oracle Clinical to Release 5.2, skip to Chapter 3, "Install and Configure the Oracle Application Tier".

If you are using Oracle Real Application Clusters (RAC) or Oracle Data Guard, see Section 1.5, "Supported Configurations with Oracle Data Guard and RAC".

This chapter includes:

- Section 2.1, "Get the Oracle Database 12.1.0 Installation Guide"
- Section 2.2, "Download and Extract the Oracle Database 12.1.0 Software"
- Section 2.3, "Performing Prerequisite Tasks for Installing Oracle Database"
- Section 2.4, "Install Oracle Database 12.1.0"
- Section 2.5, "Install Oracle Database 12c Release 1 (12.1.0.2) Examples"
- Section 2.6, "Install Oracle Critical Patch Update"

2.1 Get the Oracle Database 12.1.0 Installation Guide

1. Open or download the installation guide for your operating system:
 - Linux: <https://docs.oracle.com/database/121/LADBI/toc.htm>
 - Solaris: <https://docs.oracle.com/database/121/SSDBI/toc.htm>
 - HP-UX Itanium: <https://docs.oracle.com/database/121/HPDBI/toc.htm>
 - Windows: <https://docs.oracle.com/database/121/NTDBI/toc.htm>

2.2 Download and Extract the Oracle Database 12.1.0 Software

To download and extract the Oracle Database 12.1.0 software:

1. Follow instructions in the *Oracle Database Installation Guide*.

Oracle Thesaurus Management System requires Oracle Database Enterprise Edition.

Oracle Database Grid Infrastructure is optional.

2.3 Performing Prerequisite Tasks for Installing Oracle Database

To ensure that your platform meets the minimum requirements for installing Oracle Database 12c Release 2 (12.1.0.2), you must perform the following preparatory tasks:

2.3.1 Create Owners, Groups, and Mount Points

To create the software owner, required groups, and mount points:

1. Create the software owner and groups:
 - Create a UNIX user to own the Oracle software. Typically, the user name is **oracle**.
 - Create two groups: one is the Oracle Inventory group; the other is the operating system DBA group. Typically, the group names are **oinstall** and **dba**, respectively.
2. Create mount points owned by the oracle user:
 - Create a software mount point of at least 10 GB.
 - Create mount points to hold the database files, control files, and log files, respectively.
3. Test permissions. Ensure that the `oracle` user can write to the new mount points and all subdirectories.

2.3.2 Configure Kernel Resources and Adjust Operating System Environment

The performance of Oracle Database relies on proper tuning of operating system parameters. In addition, if you are creating several Oracle instances, you might have to increase the amount of shared memory and semaphores on the system by setting kernel parameters.

For details, see the "Configure Kernel Parameters" section of the *Oracle Database 12c Release 2 Installation Guide* for your operating system.

2.3.3 Install Latest Operating System Patches

Download and install the latest operating system patches required for Oracle, if necessary. Review the latest platform-specific install bulletins for Oracle Database 12c Release 1 (12.1.0.2).

2.4 Install Oracle Database 12.1.0

To install Oracle Database 12.1.0, follow the instructions in the *Oracle Database Installation Guide*, making selections appropriate for TMS as noted in the following sections.

TMS requires:

- Oracle Database Enterprise Edition
- Oracle Web Tier (Oracle Fusion Middleware Web Tier Utilities)
- Oracle Database Text Option

Oracle Database Grid Infrastructure is optional.

You can configure database(s) as part of the database software installation or after, using the Database Configuration Assistant (DBCA).

Oracle Thesaurus Management System supports installation on either a Container Database (CDB) containing a Pluggable Database (PDB) or a non-CDB database.

Note: For information on pluggable and container databases, see:

- *Oracle® Database New Features Guide 12c Release 1 (12.1)* at <https://docs.oracle.com/database/121/NEWFT/toc.htm>
 - *Oracle Database Concepts* at <https://docs.oracle.com/database/121/CNCPT/cdbovrvw.htm#CNCPT89234>
-
-

For an explanation of which options require an additional license, see the *Database Licensing Information User Manual* at <https://docs.oracle.com/database/121/DBLIC/toc.htm>.

2.4.1 Install and Configure Oracle Database

Oracle recommends that you set up a new database instance so that neither Oracle Thesaurus Management System nor its installation process interferes with other applications. However, you can install Oracle Thesaurus Management System on an existing database instance.

When you configure the database, select the following options for Oracle Thesaurus Management System:

- Character Set: See [Section 1.8, "Choose a Character Set"](#).
- Automatic Memory Management (recommended)
- Oracle JVM (required)
- Distributed Database Option and Advanced Replication Option (required only if you are using Oracle Clinical Distributed Study Conduct (Replication))
- Oracle Partitioning (recommended)
- Oracle Text (required)
- Oracle XML DB (required)
- Oracle Database Client (required)
- Oracle Database Examples (required)

Note: Oracle Text, Java Virtual Machine (JVM), and Oracle XML DB are configured automatically if you select a general purpose template.

- Accept **connections as a service** instead of a SID. Service name requirements for Oracle Thesaurus Management System include:
 - The service name must be less than 15 characters long.
 - It must not include the domain.
 - It must be **all lowercase**.

Note: If you are installing the Oracle Thesaurus Management System database on a pluggable Oracle 12.1.0.2 database (PDB), see My Oracle Support article ID 1910177.1, *How To Configure TNS / SQLNET using the local_listener parameter for Pluggable Database In Oracle 12c, Allowing a SQLNET Connection to the PDB.*

- Check that **required tablespaces** exist, have Autoextend on, and have the following minimum sizes:
 - SYSTEM: 900 mb
 - TEMP: 100 mb
 - UNDOTBS1: 700 mb
 - USERS: 500 mb
 - SYSAUX: 600 mb
- **Initialization Parameters.** Table 2–1 shows the required or recommended values for Oracle Thesaurus Management System. For parameters that accept a value within a range, the minimum values are given.

Tip: Parameters are listed in alphabetical order. In the Database Configuration Assistant, you can click the Parameter column to display the parameters in the same order. You may need to select Advanced Parameters to see all of them.

Note: If you make any changes to the initialization parameters, restart the database for the new settings to take effect.

Table 2–1 Required and Recommended Initialization Values in the init.ora File

Parameter	Value	Comments
COMPATIBLE	12.0.0.0	Specifies the release with which the Oracle server must maintain compatibility.
DB_BLOCK_SIZE	16384 bytes	You cannot change this value after you create the database.
DB_CACHE_SIZE	150 MB	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
DB_DOMAIN	null	DO NOT set this value.
DB_FILES	200	Oracle adds needed space to the control files up to the number specified in the DB_FILES parameter.
EVENT	31151 trace name context forever, level 0x100	Required for HTML generation. NOTE: Do not include the EVENT parameter when you create the database. Once the database is created, you can add the EVENT parameter to the init.ora file.
JAVA_POOL_SIZE	50 MB	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.
JOB_QUEUE_PROCESSES	10	Developer-specific parameter. You can change the value of this parameter after installation.
LARGE_POOL_SIZE	50 MB	Recommended value for 50 to 60 concurrent users.
MEMORY_MAX_TARGET	1000 MB (minimum)	Adjust this value according to your organization's needs.
MEMORY_TARGET	1000 MB (minimum)	Adjust this value according to your organization's needs.

Table 2–1 (Cont.) Required and Recommended Initialization Values in the *init.ora* File

Parameter	Value	Comments
NLS_DATE_FORMAT	DD-MON-RRRR (default value)	Determines the format in which client applications running on the Windows server transfer date information to and from the database. The format must specify the year as RRRR.
NLS_LENGTH_SEMANTICS	BYTE	The CHAR value for this parameter is not supported.
OPEN_CURSORS	800 or greater	You can change the value of this parameter after installation.
OPTIMIZER_DYNAMIC_SAMPLING	2 or greater	The default setting is 2. Oracle recommends using dynamic sampling for Batch Data Load temporary tables; see the <i>Oracle Clinical Administrator's Guide</i> .
OPTIMIZER_FEATURES_ENABLE	12.1.0.2	Acts as an umbrella for enabling a series of optimizer features based on an Oracle release number. NOTE: Oracle Thesaurus Management System 5.2.1 is certified on the Oracle Database 11g optimizer features.
OPTIMIZER_MODE	CHOOSE	If you run Oracle Thesaurus Management System's statistics gathering scripts, the CHOOSE value sets Oracle Optimizer to apply the execution plan that best minimizes response time. See the Oracle Database documentation for more information. (CHOOSE is the default value when you specify 11.2.0.4 as the value of OPTIMIZER_FEATURES_ENABLE.)
PGA_AGGREGATE_TARGET	200 MB	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.
REMOTE_LOGIN_PASSWORDFILE	EXCLUSIVE	The database must be set up to use password file authentication.
SEC_CASE_SENSITIVE_LOGON	FALSE	Lets you enter passwords without case sensitivity.
SESSIONS	500 or greater	You can change the value of this parameter after installation.
SGA_MAX_SIZE	600 MB (minimum)	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
SGA_TARGET	600 MB (minimum)	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
SHARED_POOL_SIZE	150 MB (minimum)	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.
UNDO_MANAGEMENT	AUTO	Specifies which undo space management mode the system uses. When set to AUTO, the instance starts in Automatic Undo Management (AUM) mode.
UTL_FILE_DIR	<i>opa_home</i> \xmltemp	Specifies each directory you access. For Windows environments, samples of the valid syntax are as follows: UTL_FILE_DIR=c:\e2b\import UTL_FILE_DIR=c:\opapps\xmltemp In a UNIX environment, UTL_FILE_DIR requires an entry with two specified paths: one with and one without a trailing slash. Add these lines before any other UTL_FILE_DIR entries: UTL_FILE_DIR=/usr/opapps/oc/xmltemp/ UTL_FILE_DIR=/usr/opapps/oc/xmltemp

2.4.2 Modify the *tnsnames.ora* File on the Database Server

There is a *tnsnames.ora* file in at least two locations in the installation. Oracle recommends maintaining a master file and copying it to each location whenever you add a database. See [Section 3.13, "Modify the *tnsnames.ora* File on the Application Server"](#) for the application server locations.

1. Navigate to the *tnsnames.ora* file in the following directory on the database server:
Oracle_Home/network/admin

2. Enter a connect string for each database that matches the database's service name.
3. If there are multiple Oracle homes, maintain tns entries for all databases in a central location; for example: /etc/tnsnames.ora.

2.4.3 Create the oinstall User Group

Use instructions in the Oracle Database 12.1.0.2 Installation Guide chapter "Configuring Users, Groups and Environments for Oracle Database."

1. Check if the **oinstall** user group exists.
2. If it does not exist, create it.

2.4.4 Check Required Tablespaces

Table 2–2 lists the tablespaces, along with their minimum size, required for Oracle Clinical. Make sure the database contains these tablespaces. The best practice is to create them with the *Autoextend On* option, to avoid running out of space.

In addition, you may need to increase the minimum sizes for your installation.

Table 2–2 Required Tablespaces and Sizes

Tablespace	Minimum Size
SYSTEM	900 MB
TEMP	100 MB
UNDOTBS1	700 MB
USERS	500 MB
SYSAUX	600 MB

2.4.5 Performance Tuning Step for Pluggable Databases

To prevent performance issues, specifically with accessing `dba_synonyms` view, take these steps. See My Oracle Support doc ID 2033658.1 for more information.

1. Run the following statement:

```
alter system set "_common_data_view_enabled" = false scope=both;
```

2. Restart the database.

2.5 Install Oracle Database 12c Release 1 (12.1.0.2) Examples

Oracle Database Examples includes the following items:

- Oracle JDBC Development Drivers (required)
- Oracle Database Examples (required)
- Oracle Product Demonstrations (optional)

Note: You do not need to install any of the sample schemas. They are not required for either Oracle Clinical or TMS. You can add them later if you change your mind.

To install Oracle Database Examples:

1. Extract the zip file containing Oracle Database Examples in the `examples` directory.
2. Start Oracle Universal Installer from the `examples` directory.

```
./runInstaller
```

Or, if the database server has multiple Oracle Homes, then enter:

```
./runInstaller -invPtrLoc ORACLE_HOME/oraInst.loc
```

3. Accept all the default values during the installation.

For more information, see the *Oracle Database Examples Installation Guide* at http://docs.oracle.com/database/121/nav/portal_11.htm.

2.6 Install Oracle Critical Patch Update

1. Check My Oracle Support article ID 180430.1, *Oracle Health Sciences (Life Sciences/Pharmaceutical/Healthcare) Applications Supported Technology Stacks*, for the latest quarterly Oracle CPU patches tested with Oracle Health Sciences applications.
2. Install these patches on every computer with an Oracle Home.

Install and Configure the Oracle Application Tier

This chapter describes how to install Oracle Application Server, which includes the Oracle Fusion Middleware Infrastructure Software, Oracle Forms Server and the Oracle Reports Server, and Oracle WebLogic Server.

This chapter includes:

- Before You Start
- Gather Required Information
- Install Adobe Reader
- Install Oracle Java Development Kit
- Install Oracle WebLogic Server 12.2.1.2
- Install the Oracle Fusion Middleware Infrastructure Software
- Install the Oracle Forms and Reports Servers
- Install Oracle Database Client
- Create the Repository Creation Utility
- Configure the FRDomain
- Enable SSL Between a Browser and Oracle HTTP Server
- Apply Patches on the Application Server
- Modify the tnsnames.ora File on the Application Server
- Configure Firewall on the Application Tier
- Test Connectivity to Databases for Forms and Reports Servers
- Restart the Computer

3.1 Before You Start

3.1.1 Identify a Single Account to Perform All Application Tier Installation Tasks

1. Install all application tier components using the same user account.
The account must have administrator privileges on the server computer.

3.1.2 Get a CA Certificate for HTTPS

To support HTTPS:

1. Request a certificate from a Certificate Authority (CA) vendor, such as Thawte, Entrust, or Verisign.
 - a. Generate an encoded plain text certificate request file. See [Section 3.11.1.1, "Create an Oracle Wallet and Generate a Certificate Request"](#) for more information.
 - b. Email the certificate request file to the CA vendor.

The vendor will sign the file, and send you a Trusted Certificate and a User Certificate. Allow some time for the certificates to be issued.
2. Import the certificate into the Oracle Wallet for the Oracle Application Server.

Note: If your intention is to install an environment that will never be taken into production, you can skip this step and create a self-signed demo certificate for testing purposes; see [Section 3.11.2, "Enable SSL Between a Browser and Oracle HTTP Server With Self Signing"](#).

3.1.3 Permanent IP Address

1. Make sure every computer on which either the Oracle Clinical Forms or Reports Server is installed has a permanent IP address.

3.2 Gather Required Information

Have the following information ready.

Install the Oracle WebLogic Server

- Home directory path; for example:
C:\Oracle\Middleware\Oracle_Home
- Email address to receive security updates specific to your installation
- My Oracle Support password if you wish to receive the security updates through My Oracle Support

Install the Oracle Fusion Middleware Infrastructure Software

- Home directory path; for example:
C:\Oracle\Middleware\Oracle_Home
- Email address to receive security updates specific to your installation
- My Oracle Support password if you wish to receive the security updates through My Oracle Support

Install the Oracle Forms and Reports Servers

Home directory path; for example:

C:\Oracle\Middleware\Oracle_Home

Create the Repository Creation Utility

- Database details:
 - *Server.Domain*; for example:
servername.your_company.com
 - Port number
 - Database service name
 - Database administrator username and password
- RCU Schema password

Configure the FRDomain

- Domain home path; for example:
C:\Oracle\Middleware\user_projects\domains\FRDomain
- Application location; for example:
C:\Oracle\Middleware\user_projects\applications\FRDomain
- WebLogic Domain administration username and password
- RCU Database connection:
 - DBMS/ Service name
 - *Server.Domain*; for example:
servername.your_company.com
 - Port number
 - Schema owner name and password
- Node Manager credentials: Username and password
- Oracle HTTP Server details:
 - Administrator host's IP address
 - Administrator port number
 - Listen address
 - Listen port number
 - SSL listen port number
 - Server name

3.3 Install Adobe Reader

If you have not already downloaded Adobe Reader, following instructions in [Section 1.6.7, "Download Adobe Reader"](#), do so now.

1. Install Adobe Reader on the Reports Server and on client computers.

3.4 Install Oracle Java Development Kit

To install Oracle Java Development Kit (JDK):

1. If you have not already done so, follow instructions in [Section 1.6, "Download the Software"](#).

2. Follow instructions in the release notes to apply the patch.

Note: Do not use the default download location. By default, the download directory is C:\Program Files\java\jdk. "Program Files" includes a space, which can cause problems. Oracle recommends specifying a **directory with no spaces in the name**.

In addition, the directory name **must have no more than 8 characters**; for example, C:\app\java\jdk.

3. Make a note of the directory in which you install JDK. You will need it when you install WebLogic Server.

3.5 Install Oracle WebLogic Server 12.2.1.2

1. In the staging area where you downloaded the media pack (see [Section 1.6, "Download the Software"](#)) locate the directory where you downloaded Oracle WebLogic Server 12.2.1.2 Generic and Coherence and extract the WebLogic Server .zip file (fmw_12.2.1.2.0_wls_Disk1_1of1.zip) if you have not already done so.
2. Log in as the user you selected in [Section 3.1.1, "Identify a Single Account to Perform All Application Tier Installation Tasks"](#).
3. Install Oracle WebLogic Server using a Generic Package installer—This type of installer is a .jar file; fmw_12.2.1.2.0_wls.jar.

For instructions, see *Oracle® Fusion Middleware Installing and Configuring Oracle WebLogic Server and Coherence* for Release 12.2.1.2, at <http://docs.oracle.com/middleware/12212/1cm/WLSIG/GUID-E4241C14-42D3-4053-8F83-C748E059607A.htm#WLSIG125>.

The complete documentation set for Oracle WebLogic Server 12.2.1.2 is available at: <http://docs.oracle.com/middleware/12212/wls/index.html>.

You can accept most default values, with the exceptions noted below.

Note: You can change the default value of the *middleware_home* directory, which is C:\Oracle\Middleware, if you want, but some code examples in this guide use that value to make it easier to copy and paste, so remember to change these if you change the value.

You must NOT change the names for any of the middleware home's subdirectories, including wls_server and oracle_common.

Note: Make sure you have installed Visual C++ in Microsoft Visual Studio 2012 (x64 distributed). This is required for Oracle WebLogic Server 12c (12.2.1.2) and Oracle Forms and Reports 12c (12.2.1.2) Servers to invoke Data Capture API methods from custom clients.

Choose the "WebLogic Server" Install Type

1. Select **WebLogic Server**.

This is required in order to create a Node Manager.

Security Updates

Note: Even if you accept this option, you should check My Oracle Support for quarterly Oracle Critical Patch Update (CPU) security patches certified for use with Oracle Clinical.

1. Specify whether you want to register the product installation with My Oracle Support.

If you register, Oracle Support emails you immediately of any security updates that are specific to your installation.

2. Follow instructions on the screen to register or to reject the option.

Note: Continue to click **Next** until you are finished. After the Installation Summary, the processing may take a few minutes. You can deselect the Automatically Launch Configuration Wizard check box and click Finish to complete the 12c WebLogic Server installation.

3.6 Install the Oracle Fusion Middleware Infrastructure Software

1. In the staging area where you downloaded the media pack (see [Section 1.6, "Download the Software"](#)) locate the directory where you downloaded the Oracle Fusion Middleware Infrastructure Software and extract the .zip file (fmw_12.2.1.2.0_infrastructure_Disk1_1of1.zip) if you have not already done so.
2. Log in as the user you selected in [Section 3.1.1, "Identify a Single Account to Perform All Application Tier Installation Tasks"](#).
3. Install the Oracle Fusion Middleware Infrastructure Software using a Generic Package installer—This type of installer is a .jar file; fmw_12.2.1.2.0_infrastructure.jar.

Note: Use the same install directory that you specified when you installed WebLogic Server in [Section 3.5, "Install Oracle WebLogic Server 12.2.1.2"](#).

For instructions, see *Oracle® Fusion Middleware Installing and Configuring Oracle WebLogic Server and Coherence for Release 12.2.1.2*, at <https://docs.oracle.com/middleware/12212/1cm/WLSIG/GUID-2ACC5AA7-8904-430B-B903-8F1EEA578B7A.htm#WLSIG-GUID-2ACC5AA7-8904-430B-B903-8F1EEA578B7A>.

3.7 Install the Oracle Forms and Reports Servers

1. In the staging area where you downloaded the media pack (see [Section 1.6, "Download the Software"](#)) locate the directory where you downloaded Oracle Forms and Reports 12c (12.2.1.2) for Microsoft Windows (64-bit) and extract the .zip file (fmw_12.2.1.2.0_fr_win64_Disk1_1of1.zip) if you have not already done so.

2. Log in as the user you selected in Section 3.1.1, "Identify a Single Account to Perform All Application Tier Installation Tasks".
3. Install the Oracle Forms and Reports 12c (12.2.1.2) using a Generic Package installer—This type of installer is an .exe file; `setup_fmwm_12.2.1.2.0_fr_win64.exe`.

When asked, to choose an installation type, select **Forms and Reports Deployment**.

Note: Use the same install directory that you specified when you installed WebLogic Server in Section 3.5, "Install Oracle WebLogic Server 12.2.1.2".

For instructions, see *Oracle® Fusion Middleware Installing Oracle Forms and Reports* for Release 12.2.1.2, at <https://docs.oracle.com/middleware/12212/formsandreports/install-fnr/GUID-EBBA8709-F563-469C-9D2F-F308AF4E60C5.htm#FRINS256>.

3.8 Install Oracle Database Client

In the application tier staging area:

1. Extract the file `win64_11gR2_client.zip`.
2. Run `setup.exe`.
3. You can accept all default values in the installation wizard.
4. When prompted for the type of installation, select **Administrator**.

3.9 Create the Repository Creation Utility

For this task, you need the following database server details:

- Host name
- Port
- Service name
- Password for the SYS account

For instructions, see *Oracle® Fusion Middleware Installing Oracle Forms and Reports* for Release 12.2.1.2, at <https://docs.oracle.com/middleware/12212/formsandreports/install-fnr/GUID-EBBA8709-F563-469C-9D2F-F308AF4E60C5.htm#FRINS429>. In this link, read the first step as "Run `FMW_HOME/oracle_common/bin/rcu.bat`."

You can accept most default values, with the exception noted below.

Select Components

1. Select the option **Oracle Platform Security Services**.
2. Enter the prefix name for the domains in the following format:

`servernameFR`

Schema Password

1. Provide a schema password and make note of the schema name and password because they are required to configure the FRDomain.

3.10 Configure the FRDomain

For instructions, see *Oracle® Fusion Middleware Installing Oracle Forms and Reports for Release 12.2.1.2*, at

<https://docs.oracle.com/middleware/12212/formsandreports/install-fnr/GUID-EBBA8709-F563-469C-9D2F-F308AF4E60C5.htm#FRINS394>.

Make sure you type `FRDomain` (case-sensitive) in the desired domain home path.

You can accept most default values, with the exception noted below.

Templates

1. Select the check box for the following templates:

- Oracle Reports Server - 12.2.1
- Oracle Reports Bridge - 12.2.1
- Oracle Reports Application - 12.2.1
- Oracle Reports Tools - 12.2.1
- Oracle HTTP Server - Collacated - 12.2.1.2.0
- Oracle Forms - 12.2.1.2.0
- Oracle Enterprise Manager - 12.2.1.2.0

Add Administrator Account

1. Provide a password for the WebLogic user account and make note of this password because it is required to install Oracle Clinical.

Domain Mode and JDK

1. Select the **Production** option under Domain Mode.

Database Configuration Type

1. Provide the Repository Creation Utility schema name that you defined in [Section 3.9, "Create the Repository Creation Utility"](#) and add `_STB` to this name. For example, if the schema name you defined was `OCRDCDEV`, provide `OCRDCDEV_STB`.
2. Provide the schema password that you defined in [Section 3.9, "Create the Repository Creation Utility"](#).
3. Click **Get RCU Configuration** to continue.

Advanced Configuration

1. Select all check boxes.

Administration Server

1. Select the **Enable SSL** check box.

Node Manager

1. Define the Node Manager username and password and make note of them because they are required to install Oracle Clinical.

Managed Servers

1. Select the **Enable SSL** check box for all managed servers.

Assign Servers to Machines

1. Move AdminServer from the Servers list to the Machines list.

System Components

1. Click **Add** to add the OHS component.
 - a. For System Component, specify **ohs1**.
 - b. For the Component Type, select **OHS**.

OHS Server

1. For Listen Address, specify the machine name, including the domain.
2. Change the Listen Port value to **80**.
3. Change the SSL Listen Port value to **443**.

Domain Frontend Host

1. Copy the URL from the **Plain** field and paste it in the **SSL** field.
2. In the **SSL** field, change *http* to *https*.
3. Select the **SSL** as the default option.

Assign System Components

1. Move **ohs1** from the System Component list to the Machines list.

3.11 Enable SSL Between a Browser and Oracle HTTP Server

Create the following SSL (HTTP Secure Socket Layer) configuration: from users' browsers, HTTPS to Oracle HTTP Server (Web proxy), then HTTP to Oracle WebLogic Server.

Follow instructions in **one** of the following sections:

- [Section 3.11.1, "Enable SSL Between a Browser and Oracle HTTP Server Using a Certificate Authority"](#)
- [Section 3.11.2, "Enable SSL Between a Browser and Oracle HTTP Server With Self Signing"](#)—This may be useful if you want to set up HTTPS with a demo certificate for internal testing purposes.

3.11.1 Enable SSL Between a Browser and Oracle HTTP Server Using a Certificate Authority

The following basic steps are required:

- [Create an Oracle Wallet and Generate a Certificate Request](#)
- [Add the User Certificate and Trusted Certificate to an Oracle Wallet](#)
- [Edit the Oracle HTTP Server Configuration File](#)

An Oracle Wallet is a container that stores your credentials, such as certificates, trusted certificates, certificate requests, and private keys.

The Oracle Thesaurus Management System Installer automatically enables traffic from Oracle HTTP Server to Oracle WebLogic Server.

Note: Do all steps in this section with the same user account you have used in the previous steps in this chapter. You must have administrator privileges on the machine.

3.11.1.1 Create an Oracle Wallet and Generate a Certificate Request

To create an Oracle Wallet:

1. Create an Oracle Wallet:

<https://docs.oracle.com/middleware/12212/1cm/ASADM/GUID-2D2FEEFA-FF02-4ABA-B1A4-C7FCADCEE743.htm#ASADM10256>

2. Generate a Certificate Request:

<https://docs.oracle.com/middleware/12212/1cm/ASADM/GUID-2D2FEEFA-FF02-4ABA-B1A4-C7FCADCEE743.htm#GUID-70174F92-035D-4829-9DB8-8118964BFA9D>

3.11.1.2 Obtain Trusted Certificate and User Certificate from Certificate Authority

Note: Certificate signed using MD5 algorithm is no longer supported in Oracle HTTP Server (12.2.1.0.2). You must get the certificate signed using Secure Hashing Algorithm 2 (SHA-2).

1. Obtain the certificates from the Certificate Authority as described in [Section 3.1.2, "Get a CA Certificate for HTTPS"](#).

Depending on the Certificate Authority, you will need to send either the certificate request file generated in the previous section or you will need to copy and paste the text in that file.

3.11.1.3 Add the User Certificate and Trusted Certificate to an Oracle Wallet

For information, see

<https://docs.oracle.com/middleware/12212/1cm/ASADM/GUID-2D2FEEFA-FF02-4ABA-B1A4-C7FCADCEE743.htm#GUID-70174F92-035D-4829-9DB8-8118964BFA9D>

3.11.1.4 Edit the Oracle HTTP Server Configuration File

WebLogic Server installation creates a default, unsigned SSL wallet file for OHS. Its location is specified in the configuration file (ssl.conf) loaded at startup from the *oracle_instance*\config\OHS\ohs1 directory.

1. Make a backup copy of ssl.conf, which is located where Fusion Middleware is installed in %ORACLE_HOME%:

```
%ORACLE_HOME%\user_
projects\domains\FRDomain\config\fmwconfig\components\OHS\ohs1
```

```
%ORACLE_HOME%\user_
projects\domains\FRDomain\config\fmwconfig\components\OHS\instances\ohs1
```

2. Open ssl.conf in a text editor.
3. Find the string #Path to the wallet and comment out the default location that follows it.

```
SSLWallet ${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_
NAME}/keystores/default
```

4. Replace the above string (in bold) with the path to the directory you created:

```
SSLWallet %ORACLE_HOME%\user_
projects\domains\FRDomain\config\fmwconfig\components\OHS\ohs1\keystores
```

5. Make sure the port for SSL is 443.

To change the port to 443, change the following lines:

```
Listen existing port
<VirtualHost *:existing port>
```

to:

```
Listen 443
<VirtualHost *:443>
```

6. Stop and start Oracle HTTP Server (OHS) to load the configuration change:

- a. To stop OHS:

```
%ORACLE_
HOME%\user\projects\domains\FRDomain\bin\stopComponent ohs1
```

- b. To start OHS:

```
%ORACLE_HOME%\user_
projects\domains\FRDomain\bin\startComponent ohs1
```

Note: *ohs1* is the name of OHS component provided while configuring FRDomain.

%ORACLE_HOME% is the location of installed FMW.

7. Test that you can connect from a browser to your virtual host in HTTPS URL:

```
https://host.your_company_domain
```

3.11.2 Enable SSL Between a Browser and Oracle HTTP Server With Self Signing

For more information, see *How To Configure SSL Between the Apache Web Server Proxy Plug-in And WebLogic Server Using Self Signed Wallets* on My Oracle Support (Doc ID 1384737.1).

3.11.2.1 Edit the Oracle HTTP Server Configuration File

WebLogic Server installation creates a default, unsigned SSL wallet file for OHS. Its location is specified in the configuration file (ssl.conf) loaded at startup from the *oracle_instance\config\OHS\ohs1* directory.

1. Make a backup copy of ssl.conf, which is located where Fusion Middleware is installed in %ORACLE_HOME%:

```
%ORACLE_HOME%\user_projects\domains\FRDomain\config\fmwconfig\components\OHS
\ohs1
```

```
%ORACLE_HOME%\user_
projects\domains\FRDomain\config\fmwconfig\components\OHS\instances\ohs1
```

2. Open ssl.conf in a text editor.

3. Find the string #Path to the wallet and comment out the default location that follows it.

```
SSLWallet ${ORACLE_INSTANCE}/config/${COMPONENT_TYPE}/${COMPONENT_
NAME}/keystores/default
```

4. Replace the above string (in bold) with the path to the directory you created:

```
SSLWallet %ORACLE_HOME%\user_
projects\domains\FRDomain\config\fmwconfig\components\OHS\ohs1\keystores
```

5. Make sure the port for SSL is 443.

To change the port to 443, change the following lines:

```
Listen existing port
<VirtualHost *:existing port>
```

to:

```
Listen 443
<VirtualHost *:443>
```

6. Stop and start Oracle HTTP Server (OHS) to load the configuration change:

- a. To stop OHS:

```
%ORACLE_
HOME%\user\projects\domains\FRDomain\bin\stopComponent ohs1
```

- b. To start OHS:

```
%ORACLE_HOME%\user_
projects\domains\FRDomain\bin\startComponent ohs1
```

Note: *ohs1* is the name of OHS component provided while configuring FRDomain.

%ORACLE_HOME% is the location of installed FMW.

7. Test that you can connect from a browser to your virtual host in HTTPS URL:

```
https://host.your_company_domain
```

3.12 Apply Patches on the Application Server

Apply the following patches:

- Oracle Java Database Connectivity (patches 19028811 and 21043834)
- Oracle Reports Developer patch 22334822
- Oracle Forms patch 25143879
- Oracle Clinical PDF Plug-In (patch 12733341)
- Oracle Application Development Framework (ADF) bundle patch 12.2.1.2.170404 (patch 25495193). You must submit a Service Request (SR) for Oracle Clinical to request the password for this patch.

For instructions on applying a patch, see the corresponding Readme in My Oracle Support.

3.13 Modify the tnsnames.ora File on the Application Server

1. Go to the following tnsnames.ora location on the application server:
middleware_home\user_projects\domains\FRDomain\config\fmwconfig
2. Make sure the tnsnames.ora file has an entry for each database that matches the database's service name.
3. Copy the edited tnsnames.ora file from fr_home to 11g Client home (for example, to C:\app\gbuadmin\product\11.2.0\client_1\network\admin).

3.14 Configure Firewall on the Application Tier

If you have a firewall in your environment:

1. Open the following ports:
 - HTTP: 80 (or listen from httpd.conf)
 - HTTPS: 443 (or listen from ssl.conf)
 - RDC Onsite: 7221
 - Oracle Forms: 9001
 - Oracle Reports: 9002
 - Forms Admin Server: 7001
 - OPADomain Admin Server: 7101

3.15 Test Connectivity to Databases for Forms and Reports Servers

The Oracle Thesaurus Management System database must be able to communicate with the application servers.

3.15.1 Test the Connection from the Application Servers to the Database

To ensure that you can connect to the database from each application server:

1. Open a Microsoft DOS command window.
2. Use SQL*Plus to verify that you can connect to the database:

```
sqlplus system/password@dbname
```

3.15.2 Troubleshoot Network Connection Issues

If the system returns a connection error, you must resolve this problem before continuing with the installation of Oracle Thesaurus Management System.

Possible causes of errors include:

- The computer is not physically connected to the network.
- One of the databases does not exist.
- The network protocol software is not loaded on the computer. Try a remote login to check.
- The database or SQL*Net listener process is not started on the server.

- An incorrect connect string (service name), user ID, or password was entered.
- The tnsnames.ora file is not present in the correct directory or does not contain the correct entries.

3.16 Restart the Computer

To ensure that all configuration changes for the Oracle Application Server are initialized:

1. Restart the computer before you continue with the next task in the installation process.

Creating a TMS Database

This chapter includes:

- Section 4.1, "Install the TMS Database Server"
- Section 4.2, "Review Database Requirements and Recommendations"
- Section 4.3, "Install TMS Database Objects"
- Section 4.4, "Create a TMS Administrator User Account"
- Section 4.5, "Register Databases Integrated with Oracle Clinical"
- Section 4.6, "Load Dictionaries"

4.1 Install the TMS Database Server

The Oracle Thesaurus Management System Database Server code must be installed on Windows on the same computer as the TMS Application Tier. You must install the server first, then create one or more databases, and then install the Application Tier.

4.1.1 Gather Required Information

Make sure you have the information below, which is arranged in the order it is prompted for by the Installer during a fresh installation. The order for upgrades is somewhat different.

Note: You must install the Oracle Thesaurus Management System database server before you install or upgrade the Oracle Thesaurus Management System database.

1. **OPA Home:** the directory where Oracle Thesaurus Management System will be installed; by default:

C:\opapps52

4.1.2 Start the TMS Server Installer

To install the TMS Server:

1. Log in as a user with system administrator privileges.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the following file as an administrator:

Disk1\install\setup.exe

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although the Welcome screen also shows a button for deinstalling products, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

4. In the Select a Product to Install page, select Oracle Thesaurus Management System **Server 5.2.1.0.x**.

4.1.3 Attend to the TMS Database Server Code Installation Screens

The Installer guides you through the installation and configuration of the TMS database server. Provide the information you assembled in "[Gather Required Information](#)" on page 4-1.

4.2 Review Database Requirements and Recommendations

A TMS database can be installed on Windows, UNIX, Solaris, or Itanium. You must install the TMS Database Server (always on Windows) before installing a TMS database.

Before you install the TMS database component, review the following requirements and recommendations for each TMS database you plan to install.

4.2.1 Start with a New Database Instance

Oracle recommends that you set up a new database instance so that neither TMS nor its installation process interferes with other applications. However, you can install TMS on an existing database instance.

4.2.2 Accept Connections as a Service

Choose to configure the database to accept connections as a service instead of a SID. Service name **requirements** for Oracle Thesaurus Management System include:

- The service name must be less than 15 characters long.
- It must not include the domain.
- It must be **all lowercase**.

Note: If you are installing the Oracle Thesaurus Management System database on a pluggable Oracle 12.1.0.2 database (PDB), see My Oracle Support article ID 1910177.1, *How To Configure TNS / SQLNET using the local_listener parameter for Pluggable Database In Oracle 12c, Allowing a SQLNET Connection to the PDB*.

4.2.3 Check Required Tablespaces

Table 4–1 lists the tablespaces, along with their minimum size, required for TMS. Make sure the database contains these tablespaces. The best practice is to create them with the *Autoextend On* option, to avoid running out of space.

In addition, you may need to increase the minimum sizes for your installation.

Table 4–1 Required Tablespaces and Sizes

Tablespace	Minimum Size
SYSTEM	900 MB
TEMP	100 MB
UNDOTBS1	700 MB
USERS	500 MB
SYSAUX	600 MB

4.2.4 Use the Database Configuration Assistant

To create a new database, use the Oracle Database Configuration Assistant. For instructions about the Database Configuration Assistant, see the Oracle Database 12c Release 1 (12.1.0.2) documentation, including online help and the Oracle Database 12.1.0.2 *Installation Guide* for the appropriate operating system.

Notes:

- Use the Custom Database installation option.
- The following parameters are not listed under All Initialization Parameters. Click **Show Advanced Parameters** to set the following parameters as described in [Section 4.2.7, "Set Initialization Parameters"](#):
 - Db_cache_size
 - Db_files
 - Java_pool_size
 - Job_queue_process
 - Large_pool_size
- The Custom installation option allows access to the Database Storage screen, where you can expand the Tablespaces folder in the tree on the left side of the screen and edit the following tablespaces as required; see [Section 4.2.3, "Check Required Tablespaces"](#)

4.2.5 Select Required Components

When you create a TMS database, select the following mandatory components:

- Oracle Text
- Oracle JVM
- Oracle XML DB

4.2.6 Use Automatic Memory Management

Oracle recommends that you use Oracle Database 12c Release 1 (12.1.0.2)'s Automatic Memory Management feature for a new or an upgraded TMS database.

4.2.7 Set Initialization Parameters

Table 4–2 lists the required and recommended initialization parameters in the `init.ora` file for TMS. For those parameters that accept a value from within a range, the values in the table are minimum values.

Tip: Table 4–2 arranges the parameters in alphabetical order. In the Database Configuration Assistant, you can select the Parameter column to sequence the parameters in the same order.

Note: If you make any changes to the initialization parameters, be sure to stop and restart the database in order to acquire the new parameter settings.

Table 4–2 Required and Recommended Initialization Values in the `init.ora` File

Parameter	Value	Comments
COMPATIBLE	12.1.0.2	Specifies the release with which the Oracle server must maintain compatibility.
DB_BLOCK_SIZE	16384 bytes	You cannot change this value after you create the database.
DB_CACHE_SIZE	150 MB	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
DB_DOMAIN	null	DO NOT set this value. In Release 5.1 onward, setting this value causes problems.
DB_FILES	200	Oracle adds needed space to the control files up to the number specified in the <code>DB_FILES</code> parameter.
EVENT	31151 trace name context forever, level 0x100	Required for HTML generation. NOTE: Do not include the <code>EVENT</code> parameter when you create the database. Once the database is created, you can add the <code>EVENT</code> parameter to the <code>init.ora</code> file.
JAVA_POOL_SIZE	50 MB	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.
JOB_QUEUE_PROCESSES	10	Developer-specific parameter. You can change the value of this parameter after installation.
LARGE_POOL_SIZE	50 MB	Recommended value for 50 to 60 concurrent users.
MEMORY_MAX_TARGET	1000 MB (minimum)	Adjust this value according to your organization's needs.
MEMORY_TARGET	1000 MB (minimum)	Adjust this value according to your organization's needs.
NLS_DATE_FORMAT	DD-MON-RRRR (default value)	Determines the format in which client applications running on the Windows server transfer date information to and from the database. The format must specify the year as RRRR.
NLS_LENGTH_SEMANTICS	BYTE	The CHAR value for this parameter is not supported.
OPEN_CURSORS	800 or greater	You can change the value of this parameter after installation.
OPTIMIZER_FEATURES_ENABLE	12.1.0.2	Acts as an umbrella for enabling a series of optimizer features based on an Oracle release number. NOTE: Oracle Thesaurus Management System 5.2.1 is certified on Oracle Database 11g optimizer features; see Section 6.6, "Run Scripts to Gather Schema Statistics for the 12c Optimizer."
OPTIMIZER_MODE	CHOOSE	If you run TMS's statistics-gathering scripts, the CHOOSE value sets Oracle Optimizer to apply the execution plan that best minimizes response time. See Oracle Database documentation for more information. (CHOOSE is the default value when you specify 11.2.0.4 as the value of <code>OPTIMIZER_FEATURES_ENABLE</code> .)
PGA_AGGREGATE_TARGET	200 MB	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.

Table 4–2 (Cont.) Required and Recommended Initialization Values in the init.ora File

Parameter	Value	Comments
REMOTE_LOGIN_PASSWORDFILE	EXCLUSIVE	The database must be set up to use password file authentication.
REMOTE_OS_AUTHENT	FALSE	NOTE: Do not include the REMOTE_OS_AUTHENT parameter when you create the database . After the database is created, you can add the REMOTE_OS_AUTHENT parameter to the init.ora file. REMOTE_OS_AUTHENT is an obsolete parameter. When you start up a database that has this setting, TMS displays the following warning: ORA-32004: obsolete and/or deprecated parameter(s) specified. ORACLE instance started. You can safely ignore this warning.
SEC_CASE_SENSITIVE_LOGON	FALSE	Lets you enter passwords without case sensitivity.
SESSIONS	500 or greater	You can change the value of this parameter after installation.
SGA_MAX_SIZE	600 MB (minimum)	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
SGA_TARGET	600 MB (minimum)	Recommended value for 50 to 60 concurrent users. Adjust this value according to your organization's needs.
SHARED_POOL_SIZE	150 MB (minimum)	Recommended value for 50 to 60 concurrent users. You can change the value of this parameter after installation.
UNDO_MANAGEMENT	AUTO	Specifies which undo space management mode the system uses. When set to AUTO, the instance starts in Automatic Undo Management (AUM) mode.
UTL_FILE_DIR	<i>opa_home\ xmltemp</i>	Specifies each directory you access. If this environment is exclusively an TMS environment, you do not have to set this parameter. In a Windows environment, samples of the valid syntax are as follows: UTL_FILE_DIR=c:\e2b\import UTL_FILE_DIR=c:\opapps\xmltemp In a UNIX environment, UTL_FILE_DIR requires an entry with two specified paths: one with and one without a trailing slash. Add these lines before any other UTL_FILE_DIR entries: UTL_FILE_DIR=/usr/opapps/oc/xmltemp/ UTL_FILE_DIR=/usr/opapps/oc/xmltemp

4.3 Install TMS Database Objects

This section describes how to add TMS database objects to each Oracle database that you will use for TMS.

4.3.1 Unlock Accounts Before Installing the TMS Database

The Installer prompts you for passwords to several system accounts. In Oracle Database, some accounts are locked. Before you run the Installer, check these accounts. Unlock them if necessary. You will need to set their passwords when you run the Installer.

Make sure the following accounts are unlocked: SYSTEM, CTXSYS, and SYS.

When you have finished installing the database, relock any accounts that were locked except for SYSTEM and SYS, which should not be locked.

4.3.2 Gather Required Information

Before you start the installer, be sure you have the information it prompts for; see [Section 4.3.5, "Attend to the TMS Database Installer Screens"](#).

1. Check that the value of the PATH system environment variable is set to *database_client_home/bin;java_home/bin*;C:\Windows\system32;C:\Windows;C:\Windows\System32.
For example, PATH=C:\app\gbuadmin\product\11.2.0\client_2\bin;C:\Java\jdk1.8.1_131\bin;C:\Windows\system32;C:\Windows;C:\Windows\System32.
2. Home Details: The full path to the OPA_HOME or similar application home name on your application server; by default:
C:\opapps52
3. Oracle Database Client Home: Full path to ORACLE_HOME was created when you installed the Oracle Database Client. (The Oracle Database Client Home is required for SQL Loader and LOADJAVA to work.)
For example, C:\app\gbuadmin\product\12.1.0\client_2\bin.
4. TMS Server Code Home Directory: The system detects the location and enters the value for you. By default, it is C:\opapps52\tms.
5. Database Service name to connect: Enter the database name. It must be a valid TNS entry in your tnsnames.ora file.
6. Database Details: Enter the database server name and database port number.
7. NLS Settings: Enter the NLS settings for the database; see [Section 1.8, "Choose a Character Set"](#). Oracle strongly recommends that you use UTF8. The default values are:
 - American_America.UTF8
 - DD-MON_RRRR
8. Directory for data tablespace data files: Enter the path to the directory on the database server where the data tablespace datafiles for the application should be created during the installation. The Installer does not validate the value and you must use the following syntax, including a trailing slash, depending on your operating system; for example:
 - UNIX: /u01/oradata/dbname/
 - Windows: drive:\oradata\dbname\
9. Directory for index tablespace data files: Enter the path to the directory on the database server where the index tablespace datafiles for the application should be created during the installation. The Installer does not validate the value and you must use the following syntax, including a trailing slash, depending on your operating system; for example:
 - UNIX: /u01/oradata/dbname/
 - Windows: drive:\oradata\dbname\
10. Enter and confirm passwords for the following accounts:
 - SYS
 - SYSTEM
 - CTXSYS

- OPA
 - RXC
 - TMS
 - TMSPROXY
11. Ignore tablespace creation errors:
 - Select **Yes** if the database already has the TMS tablespaces created.
 - Select **No** if the TMS tablespaces do not exist.
 12. The Installer gives you information that you should make a note of.

4.3.3 Stop the PSUB Process (If Integrated with Oracle Clinical)

If your TMS installation is integrated with Oracle Clinical, you must stop the PSUB process before upgrading the database. See the *Oracle Clinical Administrator's Guide* for instructions.

4.3.4 Start the Installer

To install a TMS database:

1. Log in as a user with system administrator privileges in the application tier.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the file as an administrator:

```
Disk1\install\setup.exe
```

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although there is a button for deinstalling products on the Welcome screen, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

4. In the Select a Product to Install page, select **TMS Database Install 5.2.1.0.x**.

4.3.5 Attend to the TMS Database Installer Screens

The Installer guides you through the installation and configuration of the TMS database.

4.3.6 Check the Database Log File

For each database installation you perform, the Installer creates the following log file in the INSTALL directory:

```
tmsinst_database_name.log
```

Always check the log file for status, messages, or errors.

4.4 Create a TMS Administrator User Account

This section describes creating an administrator-level TMS user, which is defined as a user with the OPA_ADMIN role. Users with this role have access to the Define Users window in TMS, which enables them to create additional users in the database.

To create a new Oracle account for a user:

1. Connect to SQL*Plus as system and run the following script:
C:\opapps52\tms\52\install\tmsadduser.sql
2. Enter a user ID.
3. Enter a password for this user. Do not use the identified externally clause; explicitly assign a password.
4. Grant the OPA_ADMIN role to the user:

```
grant OPA_ADMIN to user_id
```

4.5 Register Databases Integrated with Oracle Clinical

If you are installing TMS in the same database as Oracle Clinical, register the database by running the TMS Installer.

4.5.1 Gather Required Information

Before you start the installer, be sure you have the information it prompts for; see [Section 4.5.3, "Attend to the TMS Database Registration Screens"](#).

4.5.2 Start the Installer

To register your TMS database for use with Oracle Clinical:

1. Log in to the application tier server as a user with system administrator privileges.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the following file as an administrator:

```
Disk1\install\setup.exe
```

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although there is a button for deinstalling products on the Welcome screen, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

4.5.3 Attend to the TMS Database Registration Screens

The Installer guides you through registering a TMS database.

1. Product to install: **TMS Database Registration 5.2.1.0.x**.

2. Home Details: The full path to the Oracle Home location on your application server; by default:
C:\app\oracle\Middleware\Oracle_FRHome1
3. TMS Server Code Home Directory: The system detects the location and enters the value for you. By default, it is C:\opapps52\tms\52.
4. Enter and confirm passwords for the following accounts:
 - SYS
 - TMS
 - RXC
5. Global name: Enter the global name of the TMS database; for example:
service_name
To find out the global name, log in to SQL*Plus and enter:

```
select * from global_name
```
6. Global name: Enter the global name of the OC database.
7. The Installer gives you information that you should make a note of.
8. When you are ready, install.

4.6 Load Dictionaries

See the *Oracle Thesaurus Management System User's Guide* for information about loading dictionaries.

Installing Oracle Thesaurus Management System Application Components

The Oracle Thesaurus Management System Front End includes:

- The Oracle Thesaurus Management System Forms Server, which is required for the primary Oracle Thesaurus Management System application
- The TMS Lite Browser, the online help, and the OPA OC4J instance

You must install the TMS Server code and database objects before you install the Front End.

This section includes:

- Section 5.1, "Restart Computer and Start All Servers and Services"
- Section 5.2, "Installing the TMS Front End"
- Section 5.4, "Installing the TMS Reports Server"
- Section 5.6, "Verifying the Application Tier Installation"
- Section 5.8, "Set Up Automatic Startup"
- Section 5.9, "How to Start Servers Manually"
- Section 5.11, "Stopping Servers"

5.1 Restart Computer and Start All Servers and Services

Restart the computer and then stop all servers and services:

1. Restart the computer.
2. In the Windows Services control panel, find the Oracle Node Manager service and start it.
3. From the Windows Start menu, go to All Programs, then Oracle Classic_asinst_1, then:
 - Under Forms Services, make sure that WLS_FORMS is running.
 - Under Reports Services, make sure that WLS_REPORTS is running.
 - Stop the OPADomain Server. **NOTE:** This is required if you are installing the TMS Front End after the Oracle Clinical Front End is already installed. If you are installing the Report Server, the Admin Server must be **running**.

5.2 Installing the TMS Front End

The TMS Report Server must be installed on the same machine as the TMS Front End and requires that the WebLogic FRDomain Admin Server be running during installation, whereas the TMS Front End and Server installation processes require that the Admin Server be stopped. So although the TMS Installer gives you the option to install all three at once you should not use that option.

5.2.1 Gather Required Information

Have the following information ready to enter in the Installer screens:

- Home Details: Enter the following:
 - Name: OPA_HOME
 - Path: C:\opapps52
- Java home is located in version JDK 1.8.0_111 or higher.
- Your Oracle Fusion Middleware home directory; for example:
C:\Oracle\Middleware\Oracle_Home
- Your OPA home directory; by default:
C:\opapps52
- WebLogic username: The account created when you installed the WebLogic Server.
- WebLogic Server Password: Enter a new password or use the password you created when installing WebLogic Server.
- Administration Server configuration details:
 - Listen address
 - Listen port number
 - SSL listen port number
 - WebLogic username
- Node Manager configuration details:
 - Listen address
 - Listen port number
 - WebLogic username
 - WebLogic Server password
- Managed Server configuration details:
 - Number of Managed Servers
 - Listen port start index
- Database details:
 - *Server.Domain*; for example:
servername.your_company.com
 - Port number
 - Database service name

- Oracle Fusion Middleware Repository Creation Utility (RCU) configuration details:
 - Schema prefix
 - Database administrator username and password
 - RCU schema password
- Oracle HTTP Server (OHS) port information:
 - Oracle HTTP Server SSL Listen Port number
 - Oracle HTTP Server Non-SSL Listen Port number

To get the port numbers, check the `httpd.conf` and `ssl.conf` files located at `ORACLE_HOME\user_projects\domains\FRDomain\config\fmwconfig\components\OHS\instances\ohs1`.

To check, go to the URL `https://host:port` with each port.

- TMS Proxy Password (`tmsproxy`)—the password you created when installing Oracle Thesaurus Management System database objects.
- Wallet location: for the Wallet you created in [Section 3.11, "Enable SSL Between a Browser and Oracle HTTP Server"](#). (You can browse for it on screen.)
- Online help URL: If you have customized the online help, the URL where the customized online help is located.

5.2.2 Start the Installer

To install the TMS Front End:

1. Log in as a user with system administrator privileges.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the following file as an administrator:

```
Disk1\install\setup.exe
```

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although there is a button for deinstalling products on the Welcome screen, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

5.2.3 Attend to the TMS Front End Installer Screens

The Oracle Universal Installer guides you through the installation and configuration of the TMS Front End.

1. Select a Product to install: Oracle Thesaurus Management System **Front End 5.2.1.0.x**.

2. Home Details: There are two drop-downs, Oracle Home Name and Directory. Use the Directory drop-down to select the OPA Home that corresponds to the Oracle Forms and Reports home, similar to C:\opapps52.

When you select the directory, the Home value changes automatically.

3. Choose Install Type: Select **Yes** to install a Oracle Thesaurus Management Front End.
4. Available Product Components: Select **Oracle Thesaurus Management System Front End 5.2.1.0.x**.

Note: Although the Installer gives you the option install the TMS Server (database server code) at the same time, do not select this option. You must install the TMS Server first, then the database objects, and then the Front End.

5. Follow the instructions on the installation screens, providing the information you assembled in [Section 5.2.1, "Gather Required Information."](#)

6. **Summary:** The Summary screen provides information about the global settings, languages, space requirements, and products for this installation.

Review the installation details to verify that they are correct. To revisit earlier installation screens and make changes, click **Back**.

When you are ready to continue, click **Install**.

7. **Install:** The Installer copies the files onto the server, completes the setup and configuration tasks, and generates a log file of this installation.

In addition, the Install screen displays the **location of the log file** that records the results of the installation activities for this session. Make a note of this information so you can view the log file after the installation.

8. **End of Installation:** The End of Installation screen reports whether the installation was successful. In addition, this screen lists the URLs that you use to access the Oracle Clinical, RDC Onsite, and RDC Administration applications.

The Installer saves the URL information in the following file:

```
\opapps52\log\setup.txt
```

When you have finished reviewing the installation information, click **Exit**.

5.2.4 Find the Installation Log Files

During the installation of an Oracle Health Sciences component, the Oracle Universal Installer generates the following log file:

```
installActions.log
```

On a Windows installation, the log files are located at:

```
\Oracle\Inventory\logs
```

For example:

```
C:\Program Files\Oracle\Inventory\logs
```

On a UNIX installation, the log files are located at:

```
$ORACLE_BASE/oraInventory/logs
```

For example:

```
/u01/app/oraInventory/logs
```

The current log file is `installActions.log`. All previous log generations have a timestamp appended to the name. For example:

```
installActions2013-04-30_11-22-52AM.log
```

5.2.5 Restart the Computer

To ensure that all configuration changes are initialized, you must restart the computer before you continue with the next task in the installation process or before you install Oracle Thesaurus Management System Reports Server.

5.2.6 Add WebLogic Data Sources If Using Multiple Databases

When you run the Oracle Thesaurus Management System Installer, it sets up two data source connections, one for OPA and one for RDC Onsite, from the WebLogic Server (WLS) to the database you specify in the Installer screens.

If you plan to use more than one database, you must create a WLS data source for OPA and the TMS Browser for each additional database. The OPA connection is used for running TMS reports. If you also are using RDC on multiple databases, you need to create additional data sources for RDC.

Instructions are in the *Oracle Thesaurus Management System User's Guide* and the *Oracle Clinical Remote Data Capture Onsite Administrator's Guide*.

5.3 Make the Java Runtime Environment Available for Download

Oracle Thesaurus Management System requires that Java Standard Edition (SE) Runtime Environment (JRE) exist on the user's computer.

The Oracle Thesaurus Management System Launch page is configured to prompt users to install JRE if it does not exist on their computer. To make this work, you need to download JRE into the `OPA_HOME\html` directory and rename it.

1. If you have not already done so, download the software following instructions in [Section 1.6.6, "Download the Java Runtime Environment."](#)

See that section if you are using the 64-bit version.

2. Copy the downloaded file from the staging area to `OPA_HOME\html`.
3. Rename the file to `sunjpi.exe`.

If your users need to have both JRE 6 and 7 installed to support different versions of Oracle Thesaurus Management System, check My Oracle Support article 1570682.1 for guidance.

5.4 Installing the TMS Reports Server

This section describes installing and configuring a Reports Server. The TMS Reports Server runs on Oracle Forms and Reports 12c (12.2.1.2). It schedules batch jobs such as synchronization.

You must install the TMS Front End before installing the TMS Report Server.

Note: If you have already installed the Oracle Clinical Reports Server on this machine, you do not need to install the TMS Reports Server.

The Installer prevents you from installing two Reports Servers with the same name.

5.4.1 Start the WebLogic FRDomain Admin Server

The WebLogic FRDomain Admin Server must be running when you install the Reports Server.

At the DOS command prompt, do one of the following:

- Go to `ORACLE_HOME\user_projects\domains\FRDomain\bin` and run the `startWebLogic.cmd`.
- Go to `C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Oracle FMW 12c Domain-FRDomain - 12.2.1.2.0` and run `startWeblogicAdminServer.cmd`.
- Go to `ORACLE_HOME\user_projects\domains\FRDomain\bin` and run `startNodeManager.cmd`.

5.4.2 Gather Required Information

Have the following information ready to enter in the Installer screens:

- Home Details: Enter the following:
 - Name: `OPA_HOME`
 - Path: `c:\opapps52`
- Your Oracle Fusion Middleware home directory; for example:
`C:\Oracle\Middleware\Oracle_Home`
- Your OPA home directory; for example:
`C:\opapps52`
- WebLogic username and password
- Report Server name
- Report Server output directory

5.4.3 Start the TMS Report Server Installer

To install the TMS Report Server:

1. Log in as a user with system administrator privileges.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the following file as an administrator:

`Disk1\install\setup.exe`

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although there is a button for deinstalling products on the Welcome screen, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

4. In the Select a Product to Install page, select Oracle Thesaurus Management System **Report Server 5.2.1.0.x**.

5.4.4 Attend to the TMS Reports Server Installation Screens

The Oracle Universal Installer guides you through the installation and configuration of the TMS Reports Server.

1. See [Section 5.2.1, "Gather Required Information."](#) Some of the same information is required for the Report Server.
2. Report Server name. Enter a unique name across your installation. If you try to create a second Reports Server with the same name as the first, the Installer detects it and prevents it.
3. Summary: The Summary screen provides information about the global settings, languages, space requirements, and products for this installation.

Review the installation details to verify that they are correct. To revisit earlier installation screens and make changes, click **Back**.

When you are ready to continue, click **Install**.

5.4.5 Review the Installation Log File

Review the generated installation log file, `installActionstimestamp.log`, for errors.

This is the name of the most current log file. Earlier files have a timestamp appended to the name.

Location: `\Oracle\Inventory\logs`

For example:

`C:\Program Files\Oracle\Inventory\logs`

Work with Oracle Support, if necessary, to resolve any errors.

5.5 Apply Oracle Reports Developer Patch 22334822

1. Download the patch from My Oracle Support.
2. To apply the patch, follow instructions in the patch release notes.

5.6 Verifying the Application Tier Installation

Verify that these URLs work and you can log into the application:

- Forms-based TMS—`https://host/opa52/launch.htm`

- TMS HTML Browser—<https://host/tmsadf/faces/Login>

5.7 Verify and Fix Environment Variables

Check values and correct them if required.

5.7.1 Check Values

To check variable values:

1. Open a DOS prompt window.
2. Run:

```
middleware_home\domains\OPADomain\bin\setDomainEnv.cmd
```

For example:

```
c:\oracle\middleware\user_projects\domains\OPADomain\bin\setDomainEnv.cmd
```

The script should run with no errors.

3. Inspect the value of JAVA_HOME:
 - a. At the DOS command prompt, type: `set JAVA_HOME`. You should see the location where you installed JDK following instructions in [Section 3.4, "Install Oracle Java Development Kit."](#)
 - b. Enter: `dir %java_home%`. You should see the directory specified as your JAVA_HOME containing a file called **src.zip** and four subdirectories: **jre**, **lib**, **bin**, and **include**.

If you do not see these things, you will need to add them as directed in [Section 5.7.2, "Correct Values"](#).

If JAVA_HOME contains any spaces or if any of the directories in its path are greater than 8 characters, you will need to correct them as directed in [Section 5.7.2, "Correct Values"](#).

4. Inspect the value of JAVA_VM. At the command prompt, enter: `set JAVA_VM`. You should see something like `JAVA_VM=-server`. If not, correct as directed in [Section 5.7.2, "Correct Values"](#).

5.7.2 Correct Values

To correct any of the above problems:

1. Navigate to `middleware_home\Oracle_Home_FR\oracle_common\common\bin`.
2. Back up `commEnv.cmd`.
3. Open `commEnv.cmd` in a text editor.
4. The first `set` command in the file, before any other `set` command, must identify the JAVA_HOME value. For example:

```
set JAVA_HOME=c:\app\java\jdk
```

5. Find:

```
set JAVA_VM=-client
```

change it to:

```
set JAVA_VM=-server
```

6. Close the DOS window and open a new one, then repeat the steps in [Section 5.7.1, "Check Values"](#).

5.8 Set Up Automatic Startup

It is possible to configure any Windows service to restart itself upon failure. These are standard options available when configuring a Windows service in the context of Windows Services Manager.

However, it is important to understand that Windows Services Manager only monitors the service's JVM process. If the JVM process fails (shuts down), then Windows Services Manager will attempt to restart it. But there are some scenarios where the WebLogic Admin Server or Managed Server may go into an unhealthy or failed state while the JVM is still running. The Windows Service Manager will not know to restart the process in these cases, whereas if the Admin Server and Managed Server had been started using the WebLogic Node Manager, Node Manager would recognize such a state and restart the process.

Oracle recommends starting the Admin and Managed Servers through the Node Manager using python scripts and then configuring the Windows server to execute the python scripts at startup.

To start servers manually, see [Section 5.9, "How to Start Servers Manually"](#).

5.8.1 Create boot.properties

Check if the boot.properties file exists in *Oracle_Home*\user_projects\domains\FRDomain\servers\AdminServer\security.

If not, create it as a plain text file with the following contents:

```
username = weblogic_user_name
password = weblogic_user_password
```

By default, the WebLogic user name is weblogic. This user name and password will get encrypted after all services are started.

5.8.2 Increase the Delay for Auto Start OPADomain and FRDomain

For OPADomain and FRDomain to start successfully, depending on the performance in your environment, you may want to increase the delay by which OPADomain and FRDomain start to allow time for Node Manager to start first.

1. Go to *OPA_HOME*\config\opa_setup_scripts\ directory.
2. Open the autostartfrdomain.cmd and autostartopadomain.cmd files.
3. In each file, find the line `PING 127.0.0.1 -n 30`, and change the value from 30 to 60.
4. Save and close the files.

5.8.3 Set Up Scripts to Execute Automatically at Machine Startup

Set up the Task Scheduler to start the FRDomain and OPADomain at startup:

1. From **Start**, then **Control Panel**, then **Administrative Tools**, open **Task Scheduler**.
2. Select **Create Basic Task** on the right side of the Task Scheduler.
3. Enter the following values:

Name: Oracle FRDomainNM Autostart

Trigger: When the computer starts

Action: Start a program

Select: *opa_home\config\opa_setup_scripts\autostartfrdomainNM.cmd*

4. Click **Next** and then **Finish** to complete creation of the scheduled task.
5. Find the task **Oracle Domain Autostart** under the Task Scheduler Library list. Right-click on the task you just created and select **Properties**.
6. On the **General** tab, select **Run whether user is logged on or not**.
7. Click **OK**.
8. When prompted, enter the user name and password.
9. Repeat the above steps for OPADomain Node Manager, OPADomain, and FRDomain, except for step 3 enter:
 - For OPADomain Node Manager:

Name: Oracle OPADomainNM Autostart

Select: *opa_home\config\opa_setup_scripts\autostartopadomainNM.cmd*
 - For OPADomain:

Name: Oracle OPADomainMS Autostart

Select: *opa_home\config\opa_setup_scripts\autostartOPADomain.cmd*
 - For FRDomain:

Name: Oracle FRDomainMS Autostart

Select: *opa_home\config\opa_setup_scripts\autostartfrdomain.cmd*

5.8.4 Verify Autostart Scripts

1. From a DOS window, enter command:

```
opa_home2\config\opa_setup_scripts\autostartnnnn.cmd
```

to start the FRDomain server. This command will print a lot of messages and will take some time. While this is executing, proceed to next step.
2. From a different DOS window, enter command:

```
opa_home\config\autostartopadomain2.cmd
```

to start the OPADomain server.
3. When both windows are complete, you will see messages like below, followed by the DOS prompt which will indicate script is complete:

```
Starting server WLS_FORMS .....  
Server with name WLS_FORMS started successfully  
Starting server WLS_REPORTS .....  
Server with name WLS_REPORTS started successfully  
  
Successfully Connected to Node Manager.  
Starting server AdminServer ...  
Successfully started server AdminServer ...  
Starting server OpaServer1 ...  
Successfully started server OpaServer1 ...
```

4. Verify that these URLs work and you can log into application:
 - TMS: <https://server.domain/opa52/launch.htm>
 - TMS Lite Browser: <https://server.domain/tmsadf/faces/Login?setUpDone=Y>

5.8.5 Test Autostart

To test:

1. Restart the computer.
2. Allow some time for the services to start.
3. Verify that these URLs work and you can log into application:
 - Oracle Clinical: <https://server.domain/opa52/launch.htm>
 - RDC: <https://server.domain/rdcadfsrnd/faces/Login>

If the URLs do not work after several minutes, check files in *opa_home*\log:

- autostartfrdomain2.log
- autostartfrdomain2.err
- autostartopadomain2.log
- autostartopadomain2.cmd

5.9 How to Start Servers Manually

If you have not set up automatic startup, you can start the required servers manually using the instructions in this section.

For information about these servers, see [Section 1.2, "Architecture"](#) and [Section 1.3, "Network Topology"](#).

5.9.1 Start the FRDomain Admin Server

The Oracle FRDomain Admin Server is located on the WebLogic Server domain that must be named FRDomain and must use port number 7001. You must start the Admin Server before you can start either the Oracle Forms Server or the Oracle Reports Server.

At the DOS command prompt, do one of the following:

- Go to `ORACLE_HOME\user_projects\domains\FRDomain\bin` and run the `startWebLogic.cmd`.
- Go to `C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Oracle FMW 12c Domain-FRDomain - 12.2.1.2.0` and run `Start Weblogic Admin Server`.

Note: You cannot start it from the Admin Console because if the server is not running, the FRDomain Admin Console is not available.

5.9.2 Start the FRDomain Node Manager

1. Go to `ORACLE_HOME\user_projects\domains\FRDomain\bin` and run `startNodeManager.cmd`.

5.9.3 Start the Forms Server

The Oracle Forms Server is located on the WebLogic Server domain that must be named FRDomain and must use port number 7001. You must start the FRDomain Admin Server before the Forms Server.

To start the Forms Server:

1. Go to C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Oracle FMW 12c Domain - FRDomain - 12.2.1.2.0\Oracle Forms Services - WLS_FORMS and run Start Weblogic Server - WLS_Forms.

5.9.4 Start the Reports Server

The Oracle Reports Server is located on the WebLogic Server domain that must be named FRDomain and must use port number 7001. You must start the FRDomain Admin Server before the Reports Server.

1. Start the Reports Server in the Admin Console at <http://host:7001/console>.

Note: The Admin Console is available only if the Admin Server is running.

5.9.5 Start the OPADomain Admin Server

The Oracle OPADomain Admin Server is located on the WebLogic Server domain that the Installer names OPADomain, and which must use port number 7101. You must start the Admin Server before you can start the Managed Server of OPADomain.

To start the OPADomain Admin Server:

1. Go to ORACLE_HOME\user_projects\domains\OpaDomain\bin and run startWebLogic.cmd.

Note: You cannot start from the Admin Console because if the server is not running, the OPADomain Admin Console is not available.

5.9.6 Start the OPADomain Node Manager

1. Go to ORACLE_HOME\user_projects\domains\OpaDomain\bin and run startNodeManager.cmd.

5.9.7 Start the Managed Server of OPADomain

The Managed Server of OPADomain is located on the WebLogic Server domain named OPADomain, which must use port number 7101. The Managed Server of OPADomain runs on Oracle ADF and supports RDC Onsite, the TMS Browser, and TMS reports. It also contains the database connections.

You must start the OPADomain Admin Server before the Managed Server of OPADomain.

To start the Managed Server of OPADomain, use the Admin Console at either:

- <http://host:7101/console>
- <https://host/opaconsole> (if configured)

5.9.8 Start the OHS Server

1. Go to `ORACLE_HOME\user_projects\domains\FRDomain\bin` and run the `startComponent.cmd` for `ohs1`.

5.10 Verify the Application Tier Installation

Verify that these URLs work and you can log into application:

- `https://host/opa52/launch.htm`
- `https://host/tmsadf/faces/Login`

5.11 Stopping Servers

You can stop each server either in the appropriate WLS Admin Console or from the Windows **Start** menu. These instructions are provided for your information; you do not need to do them now.

5.11.1 Stopping the Forms Server

The Oracle Forms Server is located on the WebLogic Server domain that must be named `FRDomain` and must use port number 7001.

To stop the Forms Server, do either:

- Stop `WLS_FORMS` by running `ORACLE_HOME\user_projects\domains\FRDomain\bin>stopManagedWebLogic.cmd WLS_FORMS` from a command prompt started as an administrator.
- Use the Admin Console at `http://host:7001/console`.

Note: The Admin Console is available only if the Admin Server is running.

5.11.2 Stopping the Reports Server

The Oracle Reports Server is located on the WebLogic Server domain that must be named `FRDomain` and must use port number 7001.

To stop the Reports Server, do either:

- Stop `WLS_REPORTS` by running `ORACLE_HOME\user_projects\domains\FRDomain\bin>stopManagedWebLogic.cmd WLS_REPORTS` from a command prompt started as an administrator.
- Use the Admin Console at `https://host:7001/console`.

Note: The Admin Console is available only if the Admin Server is running.

5.11.3 Stopping the FRDomain Admin Server

The Oracle `FRDomain` Admin Server is located on the WebLogic Server domain that must be named `FRDomain` and must use port number 7001.

To stop the Admin Server, do either:

- Stop AdminServer by running `ORACLE_HOME\user_projects\domains\FRDomain\bin>stopManagedWebLogic.cmd AdminServer` from a command prompt started as an administrator.
- Use the Admin Console at `https://host:7001/console`.

5.11.4 Stopping the OPADomain Admin Server

The Oracle OPADomain Admin Server is located on the WebLogic Server domain that the Installer names OPADomain, and which must use port number 7101.

To stop the Admin Server, do either:

- Stop AdminServer by running `ORACLE_HOME\user_projects\domains\OPADomain\bin>stopManagedWebLogic.cmd AdminServer` from a command prompt started as an administrator.
- Use the OPADomain Admin Console at `http://host/opaconsole` or `http://host:7101/opaconsole` (if it's configured)

5.11.5 Stopping the OpaServer1 Server

The OpaServer1 Server is located on the WebLogic Server domain named OPADomain, which must use port number 7101.

To stop the OpaServer1 Server, use the Admin Console at either:

- `http://host:7101/console`
- `https://host/opaconsole` (if configured)

Note: The Admin Console is available only if the Admin Server is running.

Upgrading Oracle Thesaurus Management System to Release 5.2.1

This chapter describes the recommended approach to upgrading an existing Oracle Thesaurus Management System installation to Release 5.2.1. Supported upgrade paths include:

- Release 4.6.6
- Release 5.0.1 or 5.0.2
- Release 5.1, 5.1.1, or 5.1.2

Be sure you are using the latest documentation:

- Check My Oracle Support Article ID 1572864.1 for any known installation issues.
- Check the Oracle Thesaurus Management System documentation page on the Oracle Help Center at <https://docs.oracle.com/health-sciences/tms-521/tms-docs.htm> to be sure you have the latest version of this guide.
- Check My Oracle Support Article ID 1931236.1 for the latest release of the *Oracle Thesaurus Management System Release 5.2.1 Release Notes*

Review [Chapter 1, "Prepare to Install Oracle Thesaurus Management System"](#) for system requirements and planning information.

This chapter includes:

- [Section 6.1, "Upgrade Oracle Clinical \(If Integrated with Oracle Clinical\)"](#)
- [Section 6.2, "Install Oracle Database"](#)
- [Section 6.3, "Install the TMS Database Server Code"](#)
- [Section 6.4, "Upgrade a TMS Database"](#)
- [Section 6.5, "Upgrade Cloned Databases"](#)
- [Section 6.6, "Run Scripts to Gather Schema Statistics for the 12c Optimizer"](#)
- [Section 6.7, "Install the Application Tier Technology Stack"](#)
- [Section 6.8, "Install the TMS Front End and Reports Server"](#)
- [Section 6.9, "Redefine the TMS Load User"](#)

Critical Patch Updates See [Section 1.6.8, "Download Oracle Critical Patch Updates."](#)

Oracle Database 12.1.0.2 includes many new features including multitenancy, which allows you to create one or more **pluggable databases** (PDBs) contained in a

single **root** or **container** database (CDB). You can install Oracle Thesaurus Management System on either a pluggable database or a non-CDB database (as in 11g). For more information on multitenancy, see

<http://docs.oracle.com/database/121/CNCPT/cdbovrvw.htm>.

For information about upgrading and migrating your existing database, see the "Installing and Upgrading" document at

<http://docs.oracle.com/database/121/UPGRD/toc.htm>.

For more information about new features see Oracle White Paper *Plug into the Cloud with Oracle Database 12c* at

<http://www.oracle.com/technetwork/database/plug-into-cloud-wp-12c-1896100.pdf> and, for more details, the *Oracle® Database New Features Guide 12c Release 1 (12.1)* at <http://docs.oracle.com/database/121/NEWFT/toc.htm>.

Note: Distributed environments are no longer supported in this release.

6.1 Upgrade Oracle Clinical (If Integrated with Oracle Clinical)

If you are upgrading both Oracle Clinical and TMS in an integrated installation, **upgrade Oracle Clinical first**. See the *Oracle Clinical Installation Guide*.

6.2 Install Oracle Database

You must install Oracle Database 12c Release 1 (12.1.0.2). You cannot upgrade your existing Oracle Database installation. Follow the instructions in [Chapter 2, "Install Oracle Database"](#).

6.3 Install the TMS Database Server Code

Follow instructions in [Section 4.1, "Install the TMS Database Server"](#).

6.4 Upgrade a TMS Database

Follow the instructions in this section to upgrade each TMS database.

Note: If you have Oracle Clinical integrated with TMS, re-registering databases is required during an upgrade.

- [Section 6.4.1, "Prevent Access to Oracle Thesaurus Management System Databases"](#)
- [Section 6.4.2, "Upgrade to Oracle Database 12.1.0.2"](#)
- [Section 6.4.3, "Gather Required Information"](#)
- [Section 6.4.4, "Stop PSUB Process \(If Integrated with Oracle Clinical\)"](#)
- [Section 6.4.5, "Start the Installer"](#)
- [Section 6.4.6, "Attend to the TMS Database Upgrade Installer Screens"](#)
- [Section 6.4.8, "Check Installation Log for Errors"](#)
- [Section 6.4.9, "Configure DSI Import"](#)

- [Section 6.4.10, "Load Dictionaries"](#)

6.4.1 Prevent Access to Oracle Thesaurus Management System Databases

You must ensure that no data entry is performed, and no jobs that update data (such as batch validation) run during the upgrade process.

To prevent users from accessing the data, place the database in restricted mode. Provide restricted session access to the following accounts:

- SYSTEM
- SYS
- OPA
- RXC
- TMS
- CTXSYS
- OPS\$TMSBROWSER
- TDX

After you complete the upgrade, remove the restricted access from the databases and user accounts.

Note: The OPS\$TMSBROWSER account is replaced by the account TMSPROXY in this release. You do not need to remove restricted access for the TMSPROXY account.

6.4.2 Upgrade to Oracle Database 12.1.0.2

Oracle recommends backing up your database(s) at this point.

Do **one** of the following:

- [Upgrade in Place](#)
- [Clone Your Database](#)

Note: Choose to configure the database to **accept connections as a service instead of a SID**. Service name **requirements** for Oracle Thesaurus Management System include:

- The service name must be less than 15 characters long.
- It must not include the domain.
- It must be **all lowercase**.

The Oracle Thesaurus Management System Installer no longer works if you set up connections using the SID.

Note: If you are installing the Oracle Thesaurus Management System database on a pluggable Oracle 12.1.0.2 database (PDB), see My Oracle Support article ID 1910177.1, *How To Configure TNS / SQLNET using the local_listener parameter for Pluggable Database In Oracle 12c, Allowing a SQLNET Connection to the PDB.*

6.4.2.1 Upgrade in Place

1. Install Oracle Database 12.1.0.2 binaries in the *Oracle_Home*. See [Section 4.2, "Review Database Requirements and Recommendations."](#)
2. To use one or more pluggable databases, create an Oracle Database Container Database (CDB). (If you are upgrading multiple databases, you still need only one CDB.)

Update the listener and tnsnames.ora either before or after the next step.

3. Upgrade your database to Oracle Database 12.1.0.2 using the Database Upgrade Assistant (DBUA) following Method 1 described in "Upgrading to Oracle Database 12c (12.1.0.2)" at <http://www.oracle.com/technetwork/database/upgrade/upgrading-oracle-database-wp-12c-1896123.pdf>.

6.4.2.2 Clone Your Database

1. Install Oracle Database 12.1.0.2 binaries in the *Oracle_Home*. See [Section 4.2, "Review Database Requirements and Recommendations."](#)
2. To use one or more pluggable databases, create an Oracle Database Container Database (CDB). (If you are upgrading multiple databases, you still need only one CDB.)

Update the listener and tnsnames.ora either before or after the next step.

3. Clone your database. See Oracle White Paper *Cloning Oracle Clinical and TMS Databases*, article ID 883213.1 on My Oracle Support.

6.4.3 Gather Required Information

Before you start the Installer, be sure you have the information it prompts for:

1. Home Details: The full path to the OPA_HOME or similar application home name on your application server; by default:
C:\opapps52
2. Oracle Database Client Home: Full path to the Oracle Database Client. (The Oracle Database Client Home is required for SQL Loader and LOADJAVA to work.)
3. TMS Server Code Home Directory: The system detects the location and enters the value for you. By default, it is C:\opapps52\tms.
4. Database Service Name to connect: Enter the database name. It must be a valid TNS entry in your tnsnames.ora file.
5. Database Details: Enter the database server name and database port number.
6. NLS Settings: Enter the NLS settings for the database; see [Section 1.8, "Choose a Character Set"](#). Oracle strongly recommends that you use UTF8. The default values are:
 - American_America.UTF8

- DD-MON-RRRR
7. Directory for data tablespace data files: Enter the path to the directory on the database server where the data tablespace datafiles for the application should be created during the installation. The Installer does not validate the value and you must use the following syntax, including a trailing slash, depending on your operating system; for example:
 - UNIX: `/u01/oradata/dbname/`
 - Windows: `drive:\oradata\dbname\`
 8. Enter and confirm passwords for the following accounts:
 - SYS
 - SYSTEM
 - RXC
 - OPA
 - TMS
 - CTXSYS
 - TMSPROXY

6.4.4 Stop PSUB Process (If Integrated with Oracle Clinical)

If your TMS installation is integrated with Oracle Clinical, you must stop the PSUB process before upgrading the database. See the *Oracle Clinical Administrator's Guide* for instructions.

6.4.5 Start the Installer

To upgrade a TMS database:

1. Log in to the application server as a user with system administrator privileges.
2. In the staging area, locate the directory where you downloaded and extracted Oracle Thesaurus Management System (see [Section 1.6, "Download the Software"](#)).
3. Run the following file as an administrator:

```
Disk1\install\setup.exe
```

The Installer opens to the Welcome screen.

Note: See [Section 1.7, "Use the Silent Installer \(Optional\)"](#) for instructions for running the Installer as a file with pre-entered parameter values.

Note: Although there is a button for deinstalling products on the Welcome screen, Oracle does not support using the Installer to deinstall Oracle Thesaurus Management System.

4. In the Select a Product to Install page, select **TMS Database Upgrade 5.2.1.0.x**.

6.4.6 Attend to the TMS Database Upgrade Installer Screens

The Oracle Universal Installer guides you through the database upgrade. Provide the information you assembled in "Gather Required Information" on page 6-4.

Ignore tablespace creation errors:

- Select **Yes** if the database already has the TMS tablespaces created.
- Select **No** if the TMS tablespaces do not exist.

The Installer gives you information that you should make a note of.

6.4.7 Set Initialization Parameters

After the upgrade completes, set the init.ora parameters according to the instructions in Section 4.2.7, "Set Initialization Parameters."

You must stop and then start the database to activate the changed init.ora parameters.

Notes: Do NOT SET the DB_DOMAIN parameter. In Release 5.1 and above this causes problems.

If you set up the EVENT parameter in the init.ora file to trace unique key constraints before upgrading, you should set the event parameter back to its required value.

6.4.8 Check Installation Log for Errors

When you upgrade, the installation log file may report the following error:

```

".....
Connected.
BEGIN tms_dsi_xml_schema.InstallSchemas; END

*
ERROR at line 1:
ORA-02303: cannot drop or replace a type with type or table dependents
ORA-06512: at "XDB.DBMS_XMLSCHEMA_INT", line 3
ORA-06512: at "XDB.DBMS_XMLSCHEMA", line 14
ORA-06512: at "TMS.TMS_DSI_XML_SCHEMA", line 35
ORA-06512: at line 1

finished TMSUPG
TMS will now attempt to validate any invalidate objects...
....."

```

This error occurs because the tmsupg.sql upgrade script executes tms_dsi_xml_schema.InstallSchemas before attempting to validate any invalid objects. Execution of tms_dsi_xml_schema.InstallSchemas fails if the database has invalid objects.

If this error occurs, you need to:

1. Run compile invalid until all database objects have been made valid.
2. Run tms_dsi_xml_schema.InstallSchemas manually. See Section 6.4.9, "Configure DSI Import" for details.

6.4.9 Configure DSI Import

If you plan to use disconnected system integration (DSI), enter following commands:

```
set LOCAL=databasename
sqlplus tms/password
exec tms_dsi_xml_schema.InstallSchemas;
```

6.4.10 Load Dictionaries

You can load dictionaries at any time. See the *Oracle Thesaurus Management System User's Guide* for information about loading dictionaries.

6.5 Upgrade Cloned Databases

If you have cloned a database, see *Cloning Oracle Clinical and Oracle Thesaurus Management System Databases* (Article ID 883213.1) on My Oracle Support:

Be sure to follow all the instructions in the document, including running the `tmschown.sql` script, the `opachown.sql` script, and, if you are using Oracle Clinical with TMS, the `chown.sql` script, *before* doing the upgrade.

6.6 Run Scripts to Gather Schema Statistics for the 12c Optimizer

After upgrading to Release 5.2.1 and setting initialization parameter `optimizer_features_enable` to 12.1.0.2 (see [Section 4.2.7, "Set Initialization Parameters"](#)), you must gather statistics required for the Oracle 11g Optimizer to be effective for accounts used internally by TMS.

Scripts `opastats.sql` and `tmsstats.sql` are available for this purpose. Failure to execute these scripts can negatively impact performance.

If your database contains large amounts of data, the scripts may take a long time to run. You may want to edit the scripts. For information the scripts' parameters see documentation of the Oracle DBMS_STATS package that they call:
http://docs.oracle.com/cd/B19306_01/appdev.102/b14258/d_stats.htm#i1036456.

tmsstats.sql Since TMS already has a procedure, `AnalyzeTable` in `tmspb_user_analyze.sql`, that runs as part of every activation job, you may prefer to edit it if required and call it from `tmsstats.sql` to keep the two synchronized.

The `tmsstats.sql` script prompts for the password of the account it processes: TMS.

To change how TMS analyzes tables and ensure that `tmsstats` and `AnalyzeTable` remain in synch:

1. Modify the `Analyze` procedure in `tmspb_user_analyze.sql`.
2. Edit `tmsstats.sql` to call `tms_user_analyze.AnalyzeTable`. Replace the section that analyzes tables with:

```
exec tms_user_analyze.AnalyzeTables
```

3. Run `tmsstats.sql`.

opastats.sql captures new statistics in the OPA application account used by TMS. It prompts for the OPA password. It is also used by Oracle Clinical and RDC Onsite.

6.7 Install the Application Tier Technology Stack

For Release 5.2.1, you cannot upgrade the application tier. Release 5.2.1 uses a different technology stack, so you must perform the complete installation. Follow the instructions in [Section 3, "Install and Configure the Oracle Application Tier."](#)

6.8 Install the TMS Front End and Reports Server

6.8.1 Install the Oracle Thesaurus Management System Front End and Reports Server

Follow instructions in [Chapter 5, "Installing Oracle Thesaurus Management System Application Components."](#)

Note: If you have already installed the Oracle Clinical Reports Server on this machine, you do not need to install the TMS Reports Server.

The Installer prevents you from installing two Reports Servers with the same name.

6.8.2 Set Remote Method Invocation (RMI) JDBC Security to Secure

1. Log in to the WebLogic Server
2. Go to **Summary of Servers**, select **OpaServer1**, select **General**, and click **Advanced**.
3. Change the **RMI JDBC Security** setting to **Secure**.
4. Click **Save**.
5. Click **Activate Changes**.

6.9 Redefine the TMS Load User

During the upgrade process, the tables accessed by the TMS load user are dropped and recreated, so the load user loses the grants required to load dictionary data.

To re-grant the required privileges:

1. In TMS, navigate to **Security**, then **Define Users**.
2. Query for the load user your company created.
3. Uncheck **LoadUser?**.
4. Save.
5. Check **Load User?**.
6. Save.

Post-Installation Steps for the New Installation or Upgrade

This chapter includes:

- Section 7.1, "Patch TMS"
- Section 7.2, "Test the TMS Forms Server"
- Section 7.3, "Configure WebLogic Server Data Sources"
- Section 7.4, "Making the Java Runtime Environment Available for Download"
- Section 7.5, "Create a Link to TMS HTML Browser"
- Section 7.6, "Configure the Document Repository"
- Section 7.7, "Define and Load Dictionaries"
- Section 7.8, "Setting Up Client Computers"

7.1 Patch TMS

Check *Oracle Thesaurus Management System Summary of Patches Available* (Article ID 132626.1) on My Oracle Support for information about any patch sets and patches available for Release 5.2.1. If any, download and apply them now. See the patch release notes (readme) for details about the patch and installation instructions.

7.2 Test the TMS Forms Server

Confirm that you can start TMS from this Forms Server before you set up each TMS client.

To test the deployment:

1. Open a browser.
2. Connect to the Oracle Health Sciences URL to start TMS.

The URL has the following syntax:

```
https://computer_name.domain/opa52/launch.htm
```

3. Click the **Launch** hyperlink, which initiates the download of the Java Virtual Machine (JVM).

7.3 Configure WebLogic Server Data Sources

When you run the TMS Installer, it sets up a connection, or data source, for OPA and another for the TMS Browser from the WebLogic Server to the database that you specify in the Installer screens.

Confirm that the OPA data source exists in the WebLogic Server Administration Console and then enter its JNDI name in the REPORT_CONFIG local reference codelist.

7.3.1 Confirm the OPA Data Source Value in WebLogic Server Admin Console

To check this:

1. Log in to the WebLogic Server Administration Console at:
`http://host:7101/console`
2. Navigate to **Services** under Domain Structure, then **Data Sources**.
3. Confirm that a data source with JNDI name: `jdbc/opadatabase_nameDS` exists.

7.3.2 Set REPORT_CONFIG Reference Codelist Value

Update local reference codelist REPORT_CONFIG with the data source JNDI name:

1. Log in to TMS.
`https://computer_name.host/opa51/launch.htm`
2. Navigate to Definition, then Local Reference Codelists.
3. Query for the REPORT_CONFIG codelist:
 - a. Press F7.
 - b. Enter REPORT_CONFIG in the Name field.
 - c. Press F8. The system displays the short value JDBC_DATA_SRC.
4. Enter the JNDI name value `jdbc/opadatabase_nameDS` as the long value.
5. Save.

7.3.3 Add Data Source (Required Only If Using Multiple Databases)

When you run the TMS Installer, it sets up a data source connection for OPA and the TMS Lite Browser from the WebLogic Server to the database you specify in the Installer screens.

If you plan to use more than one database, you must create an OPA and a TMS Lite Browser data source for each additional database. The OPA data source is used to run TMS reports.

Complete instructions are in the *Oracle Thesaurus Management System User's Guide* chapter on Administration.

7.4 Making the Java Runtime Environment Available for Download

Oracle Thesaurus Management System requires that the Java Runtime Environment (JRE) exists on the user's computer.

The TMS Launch page is configured to prompt users to install JRE if it does not exist on their computer. To make this work, you need to download JRE into the `OPA_HOME\html` directory and rename it.

Note: If you have already installed Oracle Clinical on the same machine, you do not need to do this again and can skip to the next section.

To download the latest version of the JRE and then position the software so your users can install it directly from the Downloads page:

1. If you have not already done so, download the software following instructions in [Section 1.6.6, "Download the Java Runtime Environment."](#)
2. Copy the downloaded file from the staging area to `OPA_HOME\html`.
3. Rename the file `sunjpi.exe`.

If your users need to have both JRE 6 and 7 installed to support different versions of Oracle Thesaurus Management System, check My Oracle Support article 1570682.1 for guidance.

7.5 Create a Link to TMS HTML Browser

You need to construct a link for users to access the TMS Lite Browser. You can add it to the TMS launch page or to your own users' home page. You can add links for more than one database if needed, and you can enable automatic login.

For instructions, see the administration chapter of the *Oracle Thesaurus Management System User's Guide*.

7.6 Configure the Document Repository

The Document Repository enables TMS users to search and customize a set of documents and, if Oracle Clinical is installed, patient data as well.

If you plan to use the Document Repository in the TMS Lite Browser, follow instructions in the administration chapter of the *Oracle Thesaurus Management System User's Guide*.

7.7 Define and Load Dictionaries

See the *Oracle Thesaurus Management System User's Guide* for information about defining TMS dictionaries in the user interface and loading dictionary data.

For sample load scripts, download the following document from My Oracle Support:

Title: *Sample Maintenance Scripts for MedDRA, MedDRA Primary Path, MedDRA SMQ, WHO-Drug Formats B, B2, and C, and SNOMED*

Article ID: 258975.1

Note: If you are upgrading an existing TMS installation, you do not need to redefine and reload the dictionaries you are already using.

7.8 Setting Up Client Computers

This section includes:

- [Section 7.8.1, "Configure Personal Firewall"](#)
- [Section 7.8.2, "About Using Safari on an iPad"](#)
- [Section 7.8.3, "Set Internet Options for Microsoft Internet Explorer"](#)
- [Section 7.8.4, "Download Required Applications"](#)
- [Section 7.8.5, "Logging In"](#)

7.8.1 Configure Personal Firewall

If the client computer has a personal firewall:

1. Disable the firewall or configure it for the TMS Lite Browser to function correctly.
See your firewall documentation or ask your system administrator for assistance.

7.8.2 About Using Safari on an iPad

On an iPad, which is supported for the TMS Lite Browser, some functionality available on a personal computer using a mouse is not available, including:

- Right-click and double-click options.
- Selecting multiple records using Ctrl+click

7.8.3 Set Internet Options for Microsoft Internet Explorer

This section describes how to configure Internet Explorer on a client computer so you can run tOracle Thesaurus Management System and the TMS Lite Browser.

7.8.3.1 Set Up for Proxy Usage on Fully Qualified Application Tier Names

You must configure your client proxy settings if one of the following conditions is true for your installation:

- You connect to the application tier with its fully qualified name (*server_name.domain_name*).
- You use proxies.

To configure your client proxy settings:

1. Start Internet Explorer.
2. Open the **Tools** menu, and then select **Internet Options**.
3. Click the **Connections** tab.
4. Click **LAN settings** to open the Local Area Network (LAN) Settings dialog box.
5. Select **Use a proxy server for your LAN**, and then click **Advanced**.
6. Define the **Exceptions** at the bottom of the panel.

In the **Do not use proxy server for addresses beginning with** field, use the following format to enter the fully qualified name of each application server:

server_name.domain_name

For example, if the server name is sys63 and the domain name is mycompany.com, then you enter:

sys63.mycompany.com

If you are connecting to more than one application server, enter the fully qualified name of each server. Use the semicolon (;) to separate your entries.

7.8.3.2 Allow More Connections

By default, Internet Explorer allows only two connections at a time to the same server. However, TMS Lite Browser users need more, both when they are working in the TMS Lite Browser and in order to connect to the application initially, when up to 5 connections are created and then all but one released.


To allow additional connections:

1. Follow instructions from Microsoft at <http://support.microsoft.com/kb/282402#fixit4me>.

The problem description is about being unable to download only two files at a time, but the fixes described work for this issue as well.

7.8.3.3 Turn Off Compatibility View in Internet Explorer

The TMS Lite Browser does not support the Compatibility View available on Internet Explorer 11. If the setting is enabled in the browser, when a user tries to access the TMS Lite Browser, he or she sees the following message: "The current compatibility setting is not supported." There are several places to turn off Compatibility View:

- In the IE Tools menu, toggle between turning Compatibility View on an off by clicking Compatibility View.
- The above setting is overridden by those found in the Tools menu under Compatibility View Settings. Uncheck both: **Display intranet sites in Compatibility View** and **Display all websites in Compatibility View**
- The Compatibility View icon  appears in the address bar when it is turned on for the current website. Click the icon to turn it off.

7.8.4 Download Required Applications

This section describes how to download and install the following applications:

- Java Runtime Environment (JRE)
- Adobe Reader
- Java Virtual Machine

Instructions for setting up downloads from the Oracle Thesaurus Management System Launch page are included in [Section 7.4, "Making the Java Runtime Environment Available for Download"](#).

7.8.4.1 Download the Java Runtime Environment

TMS and the TMS Lite Browser require the Java Runtime Environment (JRE) version 8 (1.8.0.111 or above).

If you have older versions of JRE and do not need them, uninstall these versions before installing the new version. By uninstalling old versions, you avoid receiving the following message when starting an Oracle Health Sciences application:

The Application requires an earlier version of JRE. Do you want to continue?

To download and install the JRE onto a client:

1. Open a browser and enter the URL to open the Launch page for TMS. For example:

`https://server.domain:port/opa52/launch.htm`

2. Click **Install JRE Plug-in** on the Launch page.
3. Follow the on-screen instructions to download and install the JRE.

During the installation, you must accept all prompts to accept signed jar files.

The system downloads the JRE from your Forms Server. When you set up the Forms Server, you installed the latest version of the JRE. See [Section 7.4, "Making the Java Runtime Environment Available for Download"](#) for more information.

7.8.4.2 Download Adobe Reader

TMS and the TMS Lite Browser support Adobe Reader 7.x or later, English versions. However, this requirement may change during the life of this document. Check My Oracle Support for the latest requirements.

To download the free Adobe Reader:

1. Go to the Adobe Corporation Web site:
<https://get.adobe.com/reader/>
2. Follow the on-screen instructions to download the latest version of the Adobe Reader.

7.8.4.3 Download the Java Virtual Machine to Client Computers

To download the Java Virtual Machine (JVM) onto each client computer:

1. Open a browser.
2. Connect to the Oracle Health Sciences URL.

The URL includes the path variable you specified in [Section 7.2, "Test the TMS Forms Server"](#).

The first time you open TMS, the system prompts you to download JVM. This download is required. It is also available from a link on the Launch page.

7.8.5 Logging In

TMS To log in to Forms-based Oracle Thesaurus Management System, use the following URL:

`https://computer_name.domain/opa52/launch.htm`

TMS Browser To log in to the TMS Browser, use the following URL:

`https://computer_name.domain/tmsadf/faces/Login`

Note: See the chapter on administration in the *Oracle Thesaurus Management System User's Guide* for information about customizing the URL to support automatic login and multiple databases.
