

Oracle® Fusion Middleware

Installing Oracle Traffic Director



12c (12.2.1.3.0)

E95531-02

July 2019

The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

ORACLE®

Oracle Fusion Middleware Installing Oracle Traffic Director, 12c (12.2.1.3.0)

E95531-02

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Contents

	Preface	
	Audience	vi
	Documentation Accessibility	vi
	Related Documents	vi
	Conventions	vii
1	About Oracle Traffic Director Installation	
	Installing, Uninstalling and Reinstalling	1-1
2	Installing Oracle Traffic Director	
	Prerequisites for Installing Oracle Traffic Director	2-1
	Prerequisites for Installing Oracle Traffic Director in a Collocated Domain	2-3
	Installation Procedure	2-4
	Installing a Standalone or a Collocated Oracle Traffic Director in Graphical Mode	2-5
	Installing a Collocated or a Standalone Oracle Traffic Director in Silent Mode	2-8
	Troubleshooting Installation Problems	2-9
3	Post-Installation Tasks	
	Verifying the Installation	3-1
	Examining the Installation Log	3-1
	Viewing the Inventory	3-2
	Configuring Oracle Traffic Director Domain	3-2
4	Uninstalling or Reinstalling Oracle Traffic Director	
	Removing Your Database Schemas	4-1
	Uninstalling the Software	4-2
	Starting the Uninstall Wizard	4-2
	Selecting the Product to Uninstall	4-2

Navigating the Uninstall Wizard Screens	4-3
Removing the Oracle Home Directory Manually	4-3
Removing the Program Shortcuts on Windows Operating Systems	4-3
Removing the Domain and Application Data	4-4
Reinstalling the Software	4-4

A Configuring OAM Agent (WebGate) for Oracle Traffic Director

Prerequisites for Configuring	A-1
Configuring WebGate for Oracle Traffic Director 12c (12.2.1.3.0)	A-1
Getting Started with a New Oracle Traffic Director 12c WebGate	A-4
Registering the New Oracle Traffic Director 12c WebGate	A-4
Setting Up the RREG Tool	A-5
Updating the OAM11gRequest.xml File	A-5
Registering a New WebGate Agent Using the In-Band Mode	A-6
Registering a New WebGate Agent Using the Out-of-Band Mode	A-7
Files and Artifacts Generated by RREG	A-9
Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance	A-9
Generating a New Certificate	A-10
Migrating an Existing Certificate	A-10
Restarting the Oracle Traffic Director Instance	A-11

B Requirements for Installing Oracle Traffic Director on Engineered Systems

Configuring Shared Storage on Exalogic before Installing Oracle Traffic Director	B-1
Overview of Shared Storage in Exalogic	B-1
Creating Projects and Shares	B-2
Mounting Shares	B-3
Configuring and Creating Zones on Oracle SuperCluster for Installing Oracle Traffic Director	B-4
Overview of Installing Oracle Traffic Director on Oracle SuperCluster	B-4
Installing Oracle Traffic Director on Oracle SuperCluster	B-5

C Updating the JDK After Installing and Configuring an Oracle Fusion Middleware Product

About Updating the JDK Location After Installing an Oracle Fusion Middleware Product	C-1
Updating the JDK Location in an Existing Oracle Home	C-2

Preface

This document provides information about installing Oracle Traffic Director.

- [Audience](#)
- [Documentation Accessibility](#)
- [Related Documents](#)
- [Conventions](#)

Audience

The intended audience for this document is administrators who install and maintain Oracle Traffic Director.

This document assumes you are familiar with the following topics:

- HTTP
- XML
- Executing operating system commands on Microsoft Windows and UNIX-based platforms

Documentation Accessibility

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Related Documents

For more information, see the following documents, which are available on the Oracle Technology Network:

- For more information about configuration files reference for Oracle Traffic Director, see *Configuration Files Reference for Oracle Traffic Director*.
- For more information about WebLogic scripting tool command, see *WebLogic Scripting Tool Command Reference for Oracle Traffic Director*.

- For more information about administration tasks, see *Administering Oracle Traffic Director*.
- For more information about changes in this release, see *Release Notes for Oracle Traffic Director*.
- For more information about using Oracle WebLogic Server, see *Using Oracle WebLogic Server Multitenant*.

Conventions

The following text conventions are used in this document:

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

1

About Oracle Traffic Director Installation

Oracle Traffic Director is a software load balancer that routes HTTP/S and TCP traffic to the back-end servers. The back-end servers, which are referred to as origin servers within Oracle Traffic Director, can be application servers, web servers, LDAP servers and so on.

Starting from 12c Release 1, in addition to being available for use with the engineered systems (Oracle Exalogic running either Oracle Linux or Oracle Solaris and Oracle SuperCluster running Oracle Solaris), Oracle Traffic Director is available for customers with the Oracle WebLogic Server Multitenant or Oracle WebLogic Server Continuous Availability add-on options.

Note:

Before you start installing Oracle Traffic Director, it is recommended that you get a basic understanding of its features, the related terminology, and the installation topology. For more information, see Getting Started with Oracle Traffic Director section of the *Administering Oracle Traffic Director*.

This chapter contains the following section:

- [Installing, Uninstalling and Reinstalling](#)

Installing, Uninstalling and Reinstalling

[Table 1-1](#) provides information about the tasks that need to be performed for installing Oracle Traffic Director.

Table 1-1 Installing, Uninstalling and Reinstalling

Task	Procedure
Installing Oracle Traffic Director	For more Information about Installation, see Installation Procedure .
Verification Procedure	For more Information about verification, uninstallation, and reinstallation, see Verifying the Installation .

2

Installing Oracle Traffic Director

To install Oracle Traffic Director, you need to understand its prerequisites and procedures.

This section contains the following topics:

- [Prerequisites for Installing Oracle Traffic Director](#)
There are mandatory configurations and packages required to Install Oracle Traffic Director.
- [Installation Procedure](#)
There are two types of installations, Collocated and Standalone. As per your organizational requirement, you can install Oracle Traffic Director in a Standalone mode or in a Collocated domain with the WebLogic Server. Also, you can use the Graphical User Interface or a silent mode to complete the installation.
- [Troubleshooting Installation Problems](#)
It is important to understand the known errors that may occur during the installation. You can follow the troubleshooting procedure in order to fix them.

Prerequisites for Installing Oracle Traffic Director

There are mandatory configurations and packages required to Install Oracle Traffic Director.

The following table lists the prerequisites for installing Oracle Traffic Director on various platforms.

Table 2-1 Prerequisites for Installing OTD

Platforms	Prerequisites
Oracle Linux 6 for Exalogic	<p>The following are pre-requisite packages for OTD installation:</p> <ul style="list-style-type: none"> • compat-glibc-2.3.4-x86_64 or higher • binutils-2.20.51.0.2-5.11.el6-x86_64 or higher • compat-libcap1-1.10-1-x86_64 or higher • compat-libstdc++-33-3.2.3-69.el6-x86_64 or higher • compat-libstdc++-33-3.2.3-69.el6-i686 or higher • libgcc-4.4.4-13.el6-i686 or higher • libgcc-4.4.4-13.el6-x86_64 or higher • libstdc++-4.4.4-13.el6-x86_64 or higher • libstdc++-4.4.4-13.el6-x86_64 or higher • libstdc++-devel-4.4.4-13.el6-x86_64 or higher • sysstat-9.0.4-11.el6-x86_64 or higher • gcc-4.4.4-13.el6-x86_64 or higher • gcc-c++-4.4.4-13.el6-x86_64 or higher • glibc-2.12-1.7.el6-i686 or higher • glibc-2.12-1.7.el6-x86_64 or higher • glibc-devel-2.12-1.7.el6-x86_64 or higher • glibc-devel-2.12-1.7.el6 or higher • libaio-0.3.107-10.el6-x86_64 or higher • libaio-devel-0.3.107-10.el6-x86_64 or higher

Table 2-1 (Cont.) Prerequisites for Installing OTD

Platforms	Prerequisites
Oracle Linux 6 or 7 for other hardware	<p>The following are pre-requisite packages for OTD instalation:</p> <ul style="list-style-type: none"> • binutils-2.20.51.0.2-5.11.el6-x86_64 or higher • compat-libcap1-1.10-1-x86_64 or higher • compat-libstdc++-33-3.2.3-69.el6-x86_64 or higher • compat-libstdc++-33-3.2.3-69.el6-i686 or higher • libgcc-4.4.4-13.el6-i686 or higher • libgcc-4.4.4-13.el6-x86_64 or higher • libstdc++-4.4.4-13.el6-x86_64 or higher • libstdc++-4.4.4-13.el6-x86_64 or higher • libstdc++-devel-4.4.4-13.el6-x86_64 or higher • sysstat-9.0.4-11.el6-x86_64 or higher • gcc-4.4.4-13.el6-x86_64 or higher • gcc-c++-4.4.4-13.el6-x86_64 or higher • glibc-2.12-1.7.el6-i686 or higher • glibc-2.12-1.7.el6-x86_64 or higher • glibc-devel-2.12-1.7.el6-x86_64 or higher • glibc-devel-2.12-1.7.el6 or higher • libaio-0.3.107-10.el6-x86_64 or higher • libaio-devel-0.3.107-10.el6-x86_64 or higher
Windows	<p>Microsoft Visual C++ 12 runtime Libraries must be installed separately before installing OTD. You can download Visual C++ Redistributable Packages for Visual Studio 2013 by clicking the following link:</p> <p>https://www.microsoft.com/en-us/download/details.aspx?id=40784</p>
AIX	<p>The following APAR are required:</p> <ul style="list-style-type: none"> • 6100-08 - use AIX APAR IV23241 • 7100-02 - use AIX APAR IV23727

- [Prerequisites for Installing Oracle Traffic Director in a Collocated Domain](#)

Prerequisites for Installing Oracle Traffic Director in a Collocated Domain

These additional prerequisites are required if you are installing Oracle Traffic Director in a collocated domain with Oracle WebLogic Server. Oracle Traffic Director can either be administered through Fusion Middleware Control or using WLST commands. In this configuration, Oracle Traffic Director is administered through Fusion Middleware Control.

- Oracle WebLogic Server (fmw_12.2.1.x.0_infrastructure_generic.jar)

- Java SE Development Kit 8

 **Note:**

For information on installing Oracle WebLogic Server, see [Installing and Configuring Oracle WebLogic Server and Coherence](#). For information on performing administration tasks, see [Administering Oracle WebLogic Server](#) and [Administering Oracle Traffic Director](#). For a list of custom Oracle Traffic Director WLST commands see [Oracle Traffic Director WLST Command Reference](#).

The recommended configuration for a collocated domain is to use the Restricted JRF template that does not require a database. If the Full JRF template is used instead, then the following are additional requirements:

- Oracle Database (Without a Restricted JRF template, the Oracle Traffic Director domain creation requires a running Oracle database to successfully complete the installation.)
- Domain repository
 - For Exalogic, the path that you provide for ORACLE_HOME must be the NFS share that is mounted locally within the compute node.
 - To install Oracle Traffic Director on engineered systems, first perform the procedures described in [Requirements for Installing Oracle Traffic Director on Engineered Systems](#).

Installation Procedure

There are two types of installations, Collocated and Standalone. As per your organizational requirement, you can install Oracle Traffic Director in a Standalone mode or in a Collocated domain with the WebLogic Server. Also, you can use the Graphical User Interface or a silent mode to complete the installation.

The following lists the names of the installer for various platforms:

- Linux: `fmw_12.2.1.3.0_otd_linux64.bin`
- Windows: `fmw_12.2.1.3.0_otd_win64.exe`
- AIX: `fmw_12.2.1.3.0_otd_aix_ppc64.bin`
- Solaris Sparc: `fmw_12.2.1.3.0_otd_solaris_sparc64.bin`
- Solaris x64: `fmw_12.2.1.3.0_otd_intelsolaris.bin`

This chapter contains the following sections:

- [Installing a Standalone or a Collocated Oracle Traffic Director in Graphical Mode](#)
- [Installing a Collocated or a Standalone Oracle Traffic Director in Silent Mode](#)

Installing a Standalone or a Collocated Oracle Traffic Director in Graphical Mode

Both Standalone and Collocated OTD can be installed in graphical mode.

Note:

To install collocated OTD, you need to install WebLogic Server (fmw_12.2.1.3.0_infrastructure_generic.jar) first. For information on installing Oracle WebLogic Server, see [Installing and Configuring Oracle WebLogic Server and Coherence](#). For a list of custom Oracle Traffic Director WLST commands see [Oracle Traffic Director WLST Command Reference](#).

Note:

The common infrastructure made available to OTD from Weblogic server installation enables administration of OTD through the FMW control or using WLST command in collocated mode; whereas, these administration options are not available in standalone mode install.

Perform the following steps to install Oracle Traffic Director in Graphical Mode:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
(UNIX: fmw_12.2.1.3.0_otd_linux64.bin), (Windows: setup_fmw_12.2.1.3.0_otd_win64.exe), (SPARC: ./fmw_12.2.1.3.0_otd_solaris_sparc64.bin), (Solaris x64: ./fmw_12.2.1.3.0_otd_intelsolaris.bin), (AIX: ./fmw_12.2.1.3.0_otd_aix_ppc64.bin)
3. Change to the directory where you downloaded the 12c (12.2.1.3.0) product distribution.
4. Start the installation program by entering the following command:
(UNIX) ./fmw_12.2.1.3.0_otd_linux64.bin
(Windows) fmw_12.2.1.3.0_otd_win64.cmd
(SPARC) ./fmw_12.2.1.3.0_otd_solaris_sparc64.bin
(Solaris x64) ./fmw_12.2.1.3.0_otd_intelsolaris.bin
(AIX) ./fmw_12.2.1.3.0_otd_aix_ppc64.bin
5. Follow the installation wizard on-screen prompts and instructions. [Table 2-2](#) provides a brief description of each screen and the action required on the screen. For more information about a specific screen, click the **Help** button on the screen.

Table 2-2 Screens of the Installation Wizard

Screen	Description and Action Required
Installation Inventory Setup	<p>On UNIX operating systems, this screen appears if this is the first time you are installing any Oracle product on this host. Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location.</p> <p>For more information about the central inventory, see <i>About the Oracle Central Inventory</i> in <i>Oracle Fusion Middleware Installing Software with the Oracle Universal Installer</i>.</p> <p>This screen doesn't appear on Windows operating systems.</p>
Welcome	Review the information to make sure that you have met all the prerequisites, then click Next .
Auto Updates	Select whether or not you want to receive automatic updates for this product.
Installation Location	<p>Use this screen to specify the location of your Oracle home directory.</p> <p>Oracle home is the directory in which software binaries for Oracle products are stored. Note that run-time processes cannot write to this directory.</p> <p>If you are installing using the standard installation topology for Oracle Traffic Director in a WebLogic Server domain, then you must enter the path to an existing Oracle Fusion Middleware Infrastructure Oracle home.</p> <p>If you are installing using the standard installation topology for Oracle Traffic Director in a standalone domain, you can specify an Oracle home directory of your choice. However, ensure that you install the software in a new Oracle home.</p> <p>For more information about Oracle Fusion Middleware directory structure, see <i>About the Recommended Directory Structure</i> in <i>Planning an Installation of Oracle Fusion Middleware</i>.</p>
Installation Type	<p>Use this screen to select the type of installation and consequently, the products and feature sets you want to install.</p> <p>Select Standalone OTD (Managed independently of WebLogic server) if you are installing Oracle Traffic Director in a Standalone domain or installing Oracle Traffic Director in a remote node of a collocated domain.</p> <p>Select Collocated OTD (Managed through WebLogic server) if you are installing Oracle Traffic Director in a WebLogic Server domain on the administration server node.</p>
JDK Selection	This screen allows you to select the JDK version that is used for the installation.

Table 2-2 (Cont.) Screens of the Installation Wizard

Screen	Description and Action Required
Prerequisite Checks	<p>The installer analyzes the host computer to ensure that the prerequisites are fulfilled. The results of the prerequisite checks are displayed on this screen.</p> <p>If a prerequisite check fails, an error or warning message is displayed.</p> <ul style="list-style-type: none"> • Fix the error and click Rerun. For example, if any of the required packages listed in Prerequisites for Installing Oracle Traffic Director are not available in the system, install them. • To ignore the error or warning and continue with the installation, click Skip. • To stop the prerequisite checking process, click Stop. Click Next to continue.
Specify Security Updates	<p>If you already have an Oracle Support account, use this screen to indicate how you would like to receive security updates.</p> <p>If you do not have one and are sure you want to skip this step, clear the check box and verify your selection in the follow-up dialog box.</p>
Installation Summary	<p>This screen displays the Oracle home directory that you specified earlier. It also indicates the amount of disk space that will be used for the installation and the free space available.</p> <p>Review information on this screen.</p> <p>To change the Oracle home directory, click the Back button or the Installation Location link in the left navigation pane.</p> <p>To save the settings specified so far in the installation wizard in a text file (called a <i>response</i> file), click Save. If necessary, you can use the response file to perform the same installation from the command line.</p> <p>Click Install to proceed with the installation process.</p> <p>For more information about silent or command line installation, see Using the Oracle Universal Installer in Silent Mode in Installing Software with the Oracle Universal Installer.</p>
Installation Progress	<p>This screen shows the progress and status of the installation process.</p> <p>If you want to cancel the installation, click Cancel. The files that were copied to your system before you canceled the installation will remain on the system; you should remove them manually.</p> <p>Click Next to continue.</p>
Installation Complete	<p>This screen displays the Installation Location and the Feature Sets that are installed. Review this information and click Finish to close the installer.</p>

Installing a Collocated or a Standalone Oracle Traffic Director in Silent Mode

This section describes how to install collocated or standalone Oracle Traffic Director in silent mode by specifying installation options at the command line.

If a central inventory directory is not already available on the host on which you are installing Oracle Traffic Director, you must create an `oraInst.loc` file before starting the silent installation. For more information, see [Oracle Central Inventory Location on UNIX Operating Systems in *Installing Software with the Oracle Universal Installer*](#).

For ExaLogic, the path that you provide for `ORACLE_HOME` must be the NFS share that is mounted locally within the compute node.

Note:

The `ignoreSysPrereqs` option should not be used while performing silent installation of Oracle Traffic Director, as this option will cause the installation to fail.

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:

(UNIX: `fmw_12.2.1.3.0_otd_platform_linux64.bin`), (Windows: `setup_fmw_12.2.1.3.0_otd_platform_win64.exe`)

3. Change to the directory where you downloaded the 12c (12.2.1.3.0) product distribution.
4. Verify that the prerequisites listed in [Prerequisites for Installing Oracle Traffic Director](#) are fulfilled.
5. Run the following command for collocated or standalone OTD:

For collocated OTD:

```
./xxx.bin -silent ORACLE_HOME=$ORACLE_HOME  
DECLINE_SECURITY_UPDATES=true INSTALL_TYPE="Collocated OTD (Managed  
through WebLogic server)" -invPtrLoc testhome/oraInventory/inv.txt
```

For standalone OTD:

```
xxx.bin -silent ORACLE_HOME=$ORACLE_HOME DECLINE_SECURITY_UPDATES=true  
INSTALL_TYPE="Standalone OTD (Managed independently of WebLogic  
server)" -invPtrLoc /scratch/oraInventory/inv.txt
```

Note:

The above commands show `.bin` files for Linux. However, for your platform specific file names, see [Installation Procedure](#)

For information about the options of the `runInstaller` command, see *Running the Oracle Universal Installer in Silent Mode* section of *Fusion Middleware Installing Software with the Oracle Universal Installer*.

Troubleshooting Installation Problems

It is important to understand the known errors that may occur during the installation. You can follow the troubleshooting procedure in order to fix them.

If you encounter an error while installing Oracle Traffic Director, do the following:

- Verify that your system meets the requirements specified in [Prerequisites for Installing Oracle Traffic Director](#)
- While using the installation wizard, if you realize that you entered incorrect information on one of the installation screens, then return to that screen by clicking **Back**, enter the correct information and proceed with the installation
- If an error occurs while the installer is copying or linking files:
 1. Note the error and review the installation log files. For more information, see [Examining the Installation Log](#).
 2. Remove the failed installation by entering the following command:
`ORACLE_HOME/oui/bin/deinstall.sh`
 3. Correct the issue that caused the error.
 4. Restart the installation process.

3

Post-Installation Tasks

You can verify and validate the installation with the help of post-installation validations. In case of failed installation, you can follow the procedure to uninstall and reinstall Oracle Traffic Director.

This section contains the following topics:

- [Verifying the Installation](#)
If something went wrong it can be traced by examining the log file, you can verify whether the installation was completed properly by running the *viewInventory* script.
- [Configuring Oracle Traffic Director Domain](#)
You need to configure a domain after installing Oracle Traffic Director.

Verifying the Installation

If something went wrong it can be traced by examining the log file, you can verify whether the installation was completed properly by running the *viewInventory* script.

For more information about verifying and troubleshooting the installation, see Verifying and Troubleshooting installation of Oracle Universal Installer.

- [Examining the Installation Log](#)
- [Viewing the Inventory](#)

Examining the Installation Log

The installer creates log files in the `logs` subdirectory within the Oracle inventory directory.

 **Note:**

If you do not know the location of the Oracle inventory directory, you can find the path to it in the `ORACLE_HOME/oraInst.loc` file.

The below table lists `logs` directory that contains the following files:

Logs Directory	Description
<code>install date-time-stamp .log</code>	This is the main log file.
<code>install date-time-stamp .out</code>	This log file contains the output and error streams during the installation.
<code>launcher-time-stamp .log</code>	This file contains the date/time the launcher was initiated.

Logs Directory	Description
installProfile <i>date-time-stamp</i> .log	This log file contains the overall statistics, like time taken to complete the installation, as well as configuration, memory, and CPU details.
oralInstall <i>date-time-stamp</i> .log	This log file contains the output stream of the copy session.
timeTaken <i>date-time-stamp</i> .log	This file is created only if you start the installer with the <code>-printtime</code> option. It contains information for the amount of time taken to move between screens (applicable for GUI installations only).
time <i>date-time-stamp</i> .log	This file is created only if you start the installer with the <code>-printtime</code> option. It contains time information for the copy session.
memory <i>date-time-stamp</i> .log	This file is created only if you start the installer with the <code>-printmemory</code> option. It contains memory usage information for the copy session.

Viewing the Inventory

After installing Oracle Traffic Director and performing the post-installation steps, verify that the Oracle home directory contains the required directories by running `viewInventory` script. Executing this script after successful installation will get a result output, as shown is the following example:

```
<ora_home>/oui/bin/viewInventory.sh | grep -i otd
(For Windows it would be: <ora_home>/oui/bin/viewInventory.bat)
Oracle Home: /oracle/Middleware
FeatureSet: fmw_install_otd 12.2.1.3.0
Component: oracle.as.install.otd.prerequisite 12.2.1.3.0
Component: oracle.as.install.otd 12.2.1.3.0
FeatureSet: otd 12.2.1.3.0
FeatureSet: em_fmcOtdPlugin 12.2.1.3.0
Component: oracle.sysman.fmw.plugin.webtier.otd 12.2.1.3.0
FeatureSet: webgate_otd 12.2.1.3.0
Component: oracle.oamclient.webgate.otd 12.2.1.3.0
```

For more information about the `viewInventory` script, see [Understanding viewInventory script](#).

Configuring Oracle Traffic Director Domain

You need to configure a domain after installing Oracle Traffic Director.

In case of collocated installation, ensure that WLS is already installed. For more information, see [Configuring a WebLogic Domain for Oracle Traffic Director in Administering Oracle Traffic Director](#).

4

Uninstalling or Reinstalling Oracle Traffic Director

Follow the instructions in this section to uninstall or reinstall Oracle Traffic Director.

Oracle recommends that you always use the instructions in this section to remove the software. If you try to remove the software manually, you may encounter problems when you try to reinstall the software again at a later time. Following the procedures in this section ensures that the software is properly removed.

- [Removing Your Database Schemas](#)
Before you remove the Oracle home, Oracle recommends that you run the Repository Creation Utility (RCU) to remove database schemas associated with this domain.
- [Uninstalling the Software](#)
Follow the instructions in this section to start the Uninstall Wizard and remove the software.
- [Removing the Oracle Home Directory Manually](#)
After you uninstall the software, you must manually remove your Oracle home directory and any existing subdirectories that the Uninstall Wizard did not remove.
- [Removing the Program Shortcuts on Windows Operating Systems](#)
On Windows operating systems, you must also manually remove the program shortcuts; the Deinstallation Wizard does not remove them for you.
- [Removing the Domain and Application Data](#)
After you uninstall the software, you must remove the domain and application data.
- [Reinstalling the Software](#)
You can reinstall your software into the same Oracle home as a previous installation only if you uninstalled the software by following the instructions in this section, including manually removing the Oracle home directory.

Removing Your Database Schemas

Before you remove the Oracle home, Oracle recommends that you run the Repository Creation Utility (RCU) to remove database schemas associated with this domain.

Each domain has its own set of schemas, uniquely identified by a custom prefix. For more information about custom prefixes, see *About Custom Prefixes* in *Creating Schemas with the Repository Creation Utility*. This set of schemas cannot be shared with any other domain. For more information about creating schemas with the RCU, see *Planning Your Schema Creation* in *Creating Schemas with the Repository Creation Utility*.

If there are multiple sets of schemas on your database, be sure to identify the schema prefix associated with the domain that you are removing.

For schema removal steps, see Dropping Schemas in *Creating Schemas with the Repository Creation Utility*.

Uninstalling the Software

Follow the instructions in this section to start the Uninstall Wizard and remove the software.

If you want to uninstall the product in a silent (command-line) mode, see Running the Oracle Universal Installer for Silent Uninstallation in *Installing Software with the Oracle Universal Installer*.

- [Starting the Uninstall Wizard](#)
- [Selecting the Product to Uninstall](#)
- [Navigating the Uninstall Wizard Screens](#)

Starting the Uninstall Wizard

To start the Uninstall Wizard:

1. Change to the following directory:
(UNIX) `ORACLE_HOME/oui/bin`
(Windows) `ORACLE_HOME\oui\bin`
2. Enter the following command:
(UNIX) `./deinstall.sh`
(Windows) `deinstall.cmd`

Selecting the Product to Uninstall

Because multiple products exist in the Oracle home, ensure that you are uninstalling the correct product.

After you run the Uninstall Wizard, the Distribution to Uninstall screen opens. From the dropdown menu, select **WebCenter Sites 12.2.1.3.0** and click **Uninstall**. The uninstallation program shows the screens listed in [Navigating the Uninstall Wizard Screens](#).



Note:

You can uninstall Oracle Fusion Middleware Infrastructure after you uninstall Oracle Traffic Director software by running the Uninstall Wizard again. Before doing so, make sure that there are no other products using the Infrastructure; those products will no longer function once the Infrastructure is removed. You will not encounter the Distribution to Uninstall screen if no other software depends on Oracle Fusion Middleware Infrastructure. See Uninstalling Oracle Fusion Middleware Infrastructure in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

Navigating the Uninstall Wizard Screens

The Uninstall Wizard shows a series of screens to confirm the removal of the software. If you need help on screen listed in [Table 4-1](#), click **Help** on the screen.

Table 4-1 Uninstall Wizard Screens and Descriptions

Screen	Description
Welcome	Introduces you to the product Uninstall Wizard.
Uninstall Summary	Shows the Oracle home directory and its contents that are uninstalled. Verify that this is the correct directory. If you want to save these options to a response file, click Save Response File and enter the response file location and name. You can use the response file later to uninstall the product in silent (command-line) mode. See <i>Running the Oracle Universal Installer for Silent Uninstall</i> in <i>Installing Software with the Oracle Universal Installer</i> . Click Deinstall , to begin removing the software.
Uninstall Progress	Shows the uninstallation progress.
Uninstall Complete	Appears when the uninstallation is complete. Review the information on this screen, then click Finish to close the Uninstall Wizard.

Removing the Oracle Home Directory Manually

After you uninstall the software, you must manually remove your Oracle home directory and any existing subdirectories that the Uninstall Wizard did not remove.

For example, if your Oracle home directory is `/home/Oracle/product/ORACLE_HOME` on a UNIX operating system, enter the following commands:

```
cd /home/Oracle/product
rm -rf ORACLE_HOME
```

On a Windows operating system, if your Oracle home directory is `C:\Oracle\Product\ORACLE_HOME`, use a file manager window and navigate to the `C:\Oracle\Product` directory. Right-click on the `ORACLE_HOME` folder and select **Delete**.

Removing the Program Shortcuts on Windows Operating Systems

On Windows operating systems, you must also manually remove the program shortcuts; the Deinstallation Wizard does not remove them for you.

To remove the program shortcuts on Windows:

1. Change to the following directory: `C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Oracle\ORACLE_HOME\Product`
2. If you only have one product installed in your Oracle home, delete the `ORACLE_HOME` directory. If you have multiple products installed in your Oracle home, delete all products before you delete the `ORACLE_HOME` directory.

Removing the Domain and Application Data

After you uninstall the software, you must remove the domain and application data.

To remove the domain and application data:

1. Manually remove your Domain home directory. For example:

On a UNIX operating system, if your Domain home directory is `/home/Oracle/config/domains/bi_domain`, enter the following command:

```
cd /home/Oracle/config/domains
rm -rf bi_domain
```

On a Windows operating system, if your Domain home directory is `C:\Oracle\Config\domains\bi_domain`, use a file manager window and navigate to the `C:\Oracle\Config\domains` directory. Right-click on the `bi_domain` folder and select **Delete**.

2. Manually remove your Application home directory. For example:

On a UNIX operating system, if your Application home directory is `/home/Oracle/config/applications/bi_domain`, enter the following commands:

```
cd /home/Oracle/config/applications
rm -rf bi_domain
```

On a Windows operating system, if your Application home directory is `C:\Oracle\Config\applications\bi_domain`, use a file manager window and navigate to the `C:\Oracle\Config\applications` directory. Right-click on the `bi_domain` folder and select **Delete**.

3. Back up the `domain_registry.xml` file in your Oracle home, then edit the file and remove the line associated with the domain that you are removing. For example, to remove the `bi_domain`, find the following line and remove it:

```
<domain location="/home/Oracle/config/domains/bi_domain"/>
```

Save and exit the file when you are finished.

Reinstalling the Software

You can reinstall your software into the same Oracle home as a previous installation only if you uninstalled the software by following the instructions in this section, including manually removing the Oracle home directory.

When you reinstall, you can then specify the same Oracle home as your previous installation.

If ODI is installed again in the same location where it was previously deleted, delete the entire Oracle Home where it was previously installed.

Consider the following cases where the Oracle home is not empty:

- Installing in an existing Oracle home that contains the same feature sets.

The installer warns you that the Oracle home that you specified during installation already contains the same software you are trying to install.

- Installing in an existing, non-empty Oracle home.

For example, suppose you chose to create your Domain home or Application home somewhere inside your existing Oracle home. This data is not removed when you uninstall a product, so if you try to reinstall into the same Oracle home, the installer does not allow it. Your options are:

- Uninstall your software from the Oracle home (as this section describes) and then remove the Oracle home directory. After you uninstall the software and remove the Oracle home directory, you can reinstall and reuse the same Oracle home location. Any domain or application data that was in the Oracle home must be re-created.
- Select a different Oracle home directory.

A

Configuring OAM Agent (WebGate) for Oracle Traffic Director

WebGate is installed by default along with Oracle Traffic Director. However, you still need to configure it.

A WebGate intercepts HTTP requests and forwards them to the Oracle Access Manager for authentication and authorization.

This section contains the following topics:

- [Prerequisites for Configuring](#)
You need to install Oracle Access Manager (OAM) before configuring Oracle Traffic Director. Also, there are version and environment related limitations for installing OAM.
- [Configuring WebGate for Oracle Traffic Director 12c \(12.2.1.3.0\)](#)
- [Getting Started with a New Oracle Traffic Director 12c WebGate](#)

Prerequisites for Configuring

You need to install Oracle Access Manager (OAM) before configuring Oracle Traffic Director. Also, there are version and environment related limitations for installing OAM.

Before you can configure Oracle Traffic Director 12c (12.2.1.3.0) WebGate, you must install one of the following versions of Oracle Access Manager.

Note:

It is highly recommended that Oracle Access Manager is installed in its own environment and not on the same machine as WebLogic Server. Oracle Access Manager and WebLogic Server can be installed on the same machine if they are both 11g versions.

For more information on Identity and Access Management, see the following:

- [Oracle Fusion Middleware 11gR2 Release 2\(11.1.2.2.0\)](#)
- [Oracle Fusion Middleware 11gR2 Release 2\(11.1.2.3.0\)](#)

Configuring WebGate for Oracle Traffic Director 12c (12.2.1.3.0)

Complete the following steps after installing Oracle Traffic Director to configure Oracle Traffic Director 12c (12.2.1.3.0) WebGate for Oracle Access Manager.

- **On UNIX**

1. Go to the `ORACLE_HOME/webgate/otd/tools/deployWebGate` directory (Please note that `ORACLE_HOME` is the location set as the OracleHome when installing Oracle Traffic Director) by entering the following command:

```
cd ORACLE_HOME/webgate/otd/tools/deployWebGate
```

2. Run the following command to create the OTD WebGate Instance Directory from `ORACLE_HOME/webgate/otd/tools/deployWebGate`:

```
./deployWebGateInstance -w webgate_instanceDirectory -oh ORACLE_HOME -ws otd
```

In this command:

- `ORACLE_HOME` is the path to where Oracle Traffic Director has been installed.

Example:

```
/home/oracle
```

- `webgate_instanceDirectory` is the location of the directory where you will copy the WebGate profile.

Example:

```
DOMAIN_HOME/config/fmwconfig/components/OTD/instances/Instance_Name
```

Please note that `DOMAIN_HOME` is the path to the directory which contains the OTD domain.

3. Set the environment variable `LD_LIBRARY_PATH` to `WebGate_Oracle_Home/lib`

For example:

For Linux 64:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:ORACLE_HOME/lib
```

For Solaris/Sparc:

```
export LD_PRELOAD_64=ORACLE_HOME/lib/libclntsh.so.11.1:ORACLE_HOME/lib/libnnz11.so
```

4. Change to the following directory:

For Unix-based platforms:

```
ORACLE_HOME/webgate/otd/tools/setup/InstallTools
```

5. On the command line, enter the following command for updating OTD configuration files, such as `magnus.conf` and `obj.conf`.

For a standalone Oracle Traffic Director installation:

```
./EditObjConf -f Domain_Home/config/fmwconfig/components/OTD/instances/Instance_Name/config/Instance_Name-obj.conf -w webgate_instanceDirectory -oh Oracle_Home -ws otd
```

For a collocated Oracle Traffic Director installation:

```
./EditObjConf -f Domain_Home/config/fmwconfig/components/OTD/Instance_Name/config/Instance_Name-obj.conf -w webgate_instanceDirectory -oh Oracle_Home -ws otd
```

In this command:

- Oracle_Home is the path to the parent directory of a valid WebLogic Server installation, or to where Oracle Traffic Director is installed.

Example:

```
/home/oracle
```

- webgate_instanceDirectory is the location of the directory where you will copy the WebGate profile.

Example:

```
Domain_Home/config/fmwconfig/components/OTD/instances/  
Instance_Name
```

- **On Windows**

1. Go to the %Oracle_Home%\webgate\otd\tools\deployWebGate directory by running the following command:

```
cd %Oracle_Home%\webgate\otd\tools\deployWebGate
```

2. Enter the following command to copy the required bits of agent from the %Oracle_Home% directory to the webgate_instanceDirectory location:

```
deployWebGateInstance.bat -w webgate_instanceDirectory -oh  
Oracle_Home -ws otd
```

In this command:

- Oracle_Home is the directory in which you have installed Oracle Traffic Director WebGate.

Example:

```
\home\oracle
```

- webgate_instanceDirectory is the location of the directory where you will copy the WebGate profile.

Example:

```
DOMAIN_HOME /config/fmwconfig/components/OTD/instances/  
Instance_Name
```

3. Run the following command to set the PATH environment variable:

```
set PATH=PATH; ORACLE_HOME\webgate\otd\lib;%Oracle_Home%\bin
```

4. Go to the following directory:

```
ORACLE_HOME\webgate\otd\tools>EditObjConf
```

5. On the command line, run the following command for updating OTD conf files, such as magnus.conf and obj.conf.

For a standalone Oracle Traffic Director installation:

```
EditObjConf -f DOMAIN_HOME/config/fmwconfig/components/OTD/  
instances/Instance_Name/config/Instance_Name-obj.conf -w  
webgate_instanceDirectory -oh $(Oracle_Home) -ws otd
```

For a collocated Oracle Traffic Director installation:

```
./EditObjConf -f Domain_Home/config/fmwconfig/components/OTD/  
Instance_Name/config/Instance_Name-obj.conf -w  
webgate_instanceDirectory -oh $(Oracle_Home)-ws otd
```

In this command:

- Oracle_Home is the directory in which you have installed Oracle Traffic Director WebGate for Oracle Access Manager.

Example:

```
\home\oracle
```

- webgate_instanceDirectory is the location of the directory where you will copy the WebGate profile.

Example:

```
Domain_Home/config/fmwconfig/components/OTD/instances/  
Instance_Name
```

Getting Started with a New Oracle Traffic Director 12c WebGate

Before you can use the new Oracle Traffic Director 12c (12.2.1.3.0) WebGate agent for Oracle Access Manager, you must complete the following tasks:

1. [Registering the New Oracle Traffic Director 12c WebGate](#)
 2. [Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance](#)
 3. [Restarting the Oracle Traffic Director Instance](#)
- [Registering the New Oracle Traffic Director 12c WebGate](#)
 - [Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance](#)
 - [Restarting the Oracle Traffic Director Instance](#)

Registering the New Oracle Traffic Director 12c WebGate

You can register the newly configured WebGate agent with Oracle Access Manager by using the Oracle Access Manager Administration Console. For more information, see *Registering an OAM Agent Using the Console* in *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*.

Alternatively, you can use the RREG command-line tool to register a new WebGate agent. You can use the tool to run in two modes: In-Band and Out-Of_Band.

This section contains the following topics:

- [Setting Up the RREG Tool](#)
- [Updating the OAM11gRequest.xml File](#)
- [Registering a New WebGate Agent Using the In-Band Mode](#)
- [Registering a New WebGate Agent Using the Out-of-Band Mode](#)
- [Files and Artifacts Generated by RREG](#)

Setting Up the RREG Tool

To set up the RREG tool, follow the procedure below:

- On UNIX
 1. After installing and configuring Oracle Access Manager, change to the following directory:

```
ORACLE_IDM2/oam/server/rreg/client
```

2. Extract the RREG.tar.gz file.

Example:

```
gunzip RREG.tar.gz
```

```
tar -xvf RREG.tar
```

The tool for registering the agent is located at:

```
RREG_HOME/bin/oamreg.sh
```

RREG_HOME is the directory in which you extracted the contents of RREG.tar.gz/rreg.

- On Windows
 1. After installing and configuring Oracle Access Manager, change to the following location:

```
ORACLE_IDM2\oam\server\rreg\client
```

2. Extract the contents of the RREG.tar.zip file to a destination of your choice.

The tool for registering the agent is located at:

```
RREG_Home\bin\oamreg.bat
```

RREG_Home is the directory in which you extracted the contents of RREG.tar.gz/rreg.

Set the following environment variables in the oamreg.sh script, on UNIX, and oamreg.bat script, on Windows.

- OAM_REG_HOME
Set this variable to the absolute path to the directory in which you extracted the contents of RREG.tar/rreg.
- JDK_HOME
Set this variable to the absolute path to the directory in which Java or JDK is installed on your machine.

Updating the OAM11gRequest.xml File

You must update the agent parameters, such as agentName, in the OAM11gRequest.xml file in the *RREG_HOME*\input directory on Windows. On UNIX, the file is in the *RREG_HOME*/input directory.

 **Note:**

The `OAM11GRequest.xml` file or the short version `OAM11GRequest_short.xml` is used as a template. You can copy this template file and use it.

Modify the following required parameters in the `OAM11GRequest.xml` file or in the `OAM11GRequest_short.xml` file:

- `serverAddress`
Used to specify the host and the port of the OAM Administration Server.
- `agentName`
Used to specify any custom name for the agent.
- `agentBaseUrl`
Used to specify the host and the port of the machine on which Oracle Traffic Director 12c WebGate is installed.
- `preferredHost`
Used to specify the host and the port of the machine on which Oracle Traffic Director 12c WebGate is installed.
- `security`
Used to specify the security mode, such as `open`, based on the WebGate installed.
- `primaryServerList`
Used to specify the host and the port of Managed Server for the Oracle Access Manager proxy, under a `Server` container element.

After modifying the file, save and close it.

Registering a New WebGate Agent Using the In-Band Mode

If you run the RREG tool once after updating the WebGate parameters in the `OAM11GRequest.xml` file, the files and artifacts required by WebGate are generated in the following directory:

On UNIX:

`RREG_HOME/output/agent_name`

On Windows:

`RREG_HOME\output\agent_name`

 **Note:**

You can run RREG either on a client machine or on the server. If you are running it on the server, you must manually copy the artifacts back to the client.

To register a new WebGate Agent, perform the following steps:

1. Open the `OAM11GRequest.xml` file, which is in `RREG_HOME/input/` on UNIX and `RREG_HOME\input` on Windows. `RREG_HOME` is the directory on which you extracted the contents of `RREG.tar.gz`.

Edit the XML file and specify the parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager.

2. To register, enter the following command:

On UNIX:

```
./RREG_HOME/bin/oamreg.sh inband input/OAM11GRequest.xml
```

On Windows:

```
RREG_HOME\bin\oamreg.bat inband input\OAM11GRequest.xml
```

Registering a New WebGate Agent Using the Out-of-Band Mode

If you are an end user with no access to the server, you can e-mail your updated `OAM11GRequest.xml` file to the system administrator, who can run RREG in the out-of-band mode. You can collect the generated `AgentID_Response.xml` file by the system administrator and run RREG on this file to obtain the WebGate files and artifacts you require.

After you receive the generated `AgentID_Response.xml` file from the administrator, you must manually copy the file to the `input` directory on your machine.

- On UNIX:

To register a new WebGate agent:

1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in `RREG_HOME/input/`.

`RREG_HOME` is the directory on which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file and specify parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager. Send the updated file to your system administrator.

2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in `RREG_HOME/input/` directory.

This is the file that you received from the end user. Go to your (administrator's) `RREG_HOME` directory and enter the following command:

```
./RREG_HOME/bin/oamreg.sh outofband input/OAM11GRequest.xml
```

An `Agent_ID_Response.xml` file is generated in the `output` directory on the administrator's machine, in the `RREG_HOME/output/` directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

3. If you are an end user, copy the generated `Agent_ID_Response.xml` file, which is in `RREG_HOME/input/`.

This is the file that you received from the administrator. Go to your (client's) RREG home directory and enter the following command:

```
./RREG_HOME/bin/oamreg.sh outofband input/Agent_ID_Response.xml
```

 **Note:**

If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in Registering an OAM Agent Using the Console in *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the `ORACLE_HOME/user_projects/domains/name_of_the_WebLogic_domain_for_OAM/output/Agent_ID` directory.

- On Windows:

Complete the following steps:

1. If you are an end user with no access to the server, open the `OAM11GRequest.xml` file, which is in `RREG_Home\input\` directory.

`RREG_HOME` is the directory in which you extracted the contents of `RREG.tar.gz/rreg`. Edit this XML file, specify parameters for the new Oracle Traffic Director WebGate for Oracle Access Manager, and send the updated file to your system administrator.

2. If you are an administrator, copy the updated `OAM11GRequest.xml` file, which is in `RREG_HOME\input\`. This is the file you received from the end user. Go to your (administrator's) `RREG_HOME` directory and run the following command:

```
RREG_HOME\bin\oamreg.bat outofband input\OAM11GRequest.xml
```

An `Agent_ID_Response.xml` file is generated on the administrator's machine in the `RREG_HOME\output\` directory. Send this file to the end user who sent you the updated `OAM11GRequest.xml` file.

3. If you are an end user, copy the generated `Agent_ID_Response.xml` file, which is in `RREG_HOME\input\`. This is the file you received from the administrator. Go to your (client's) RREG home directory and run the following command:

```
RREG_HOME\bin\oamreg.bat outofband input\Agent_ID_Response.xml
```

 **Note:**

If you register the WebGate agent by using the Oracle Access Manager Administration Console, as described in Registering an OAM Agent Using the Console in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Management*, you must manually copy the files and artifacts generated after the registration from the server (the machine on which the Oracle Access Manager Administration Console is running) to the client machine. The files and artifacts are generated in the `ORACLE_HOME/user_projects/domains/name_of_the_WebLogic_domain_for_OAM/output/Agent_ID` directory.

Files and Artifacts Generated by RREG

Regardless of the method or mode you use to register the new WebGate agent, the following files and artifacts are generated in the `RREG_HOME/output/Agent_ID` directory:

- `wallet/cwallet.sso`
- `cwallet.sso`
- `ObAccessClient.xml`
- In the **SIMPLE** mode, RREG generates:
 - `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be the same as the passphrase used on the server.
 - `aaa_key.pem`
 - `aaa_cert.pem`
- In the **CERT** mode, RREG generates `password.xml`, which contains the obfuscated global passphrase to encrypt the private key used in SSL. This passphrase can be different than the passphrase used on the server.

Note:

You can use these files generated by RREG to generate a certificate request and get it signed by a third-party Certification Authority. To install an existing certificate, you must use the existing `aaa_cert.pem` and `aaa_chain.pem` files along with `password.xml` and `aaa_key.pem`.

Copying Generated Files and Artifacts to the Oracle Traffic Director WebGate Instance

After RREG generates these files and artifacts, you must manually copy them, based on the security mode you are using, from the `RREG_HOME/output/Agent_ID` directory to the `webgate_instanceDirectory` directory.

Do the following according to the security mode you are using:

- In **OPEN** mode, copy the following files from the `RREG_HOME/output/Agent_ID` directory to the `webgate_instanceDirectory/webgate/config` directory:
 - `wallet/cwallet.sso`
 - `ObAccessClient.xml`
 - `cwallet.sso`
- In **SIMPLE** mode, copy the following files from the `RREG_HOME/output/Agent_ID` directory to the `webgate_instanceDirectory/webgate/config` directory:
 - `ObAccessClient.xml`
 - `cwallet.sso`

- password.xml

In addition, copy the following files from the `RREG_HOME/output/Agent_ID` directory to the `webgate_instanceDirectory/webgate/config/simple` directory:

- aaa_key.pem
- aaa_cert.pem
- In CERT mode, copy the following files from the `RREG_HOME/output/Agent_ID` directory to the `webgate_instanceDirectory/webgate/config` directory:
 - ObAccessClient.xml
 - cwallet.sso
 - password.xml
- [Generating a New Certificate](#)
- [Migrating an Existing Certificate](#)

Generating a New Certificate

You can generate a new certificate:

1. Change to the `ORACLE_HOME/webgate/otd/tools/openssl` directory:
2. Create a certificate request as follows:

```
./openssl req -utf8 -new -nodes -config
openssl_silent_otd11g.cnf -keyout aaa_key.pem -out
aaa_req.pem -rand ORACLE_HOME/webgate/otd/config/random-seed/
```

3. Self-sign the certificate as follows:

```
./openssl ca -config openssl_silent_otd11g.cnf -policy policy_anything
-batch -out aaa_cert.pem -infiles aaa_req.pem
```

4. Copy the following certificates to the `webgate_instanceDirectory/webgate/config` directory:

- aaa_key.pem
- aaa_cert.pem
- cacert.pem located in the `simpleCA` directory

Note:

After copying the `cacert.pem` file, rename the file to `aaa_chain.pem`.

Migrating an Existing Certificate

If you want to migrate an existing certificate (`aaa_key.pem`, `aaa_cert.pem`, and `aaa_chain.pem`), ensure that you use the same passphrase that you used to encrypt `aaa_key.pem`. You must enter the same passphrase during the RREG registration process. If you do not use the same passphrase, the `password.xml` file generated by RREG does not match the passphrase used to encrypt the key.

If you enter the same passphrase, you can copy these certificates as follows:

1. Change to the `webgate_instanceDirectory/webgate/config` directory.
2. Copy the following certificates to the `webgate_instanceDirectory/webgate/config` directory:
 - `aaa_key.pem`
 - `aaa_cert.pem`
 - `aaa_chain.pem`

Restarting the Oracle Traffic Director Instance

For information about restarting the Oracle Traffic Director instance, see Starting, Stopping, and Restarting Oracle Traffic Director Instances by Using WLST in *Administering Oracle Traffic Director*.

If you have configured Oracle Traffic Director in a WebLogic Server domain, you can also use Enterprise Manager Fusion Middleware Control to restart the Oracle Traffic Director Instances. For more information, see Starting, Stopping, and Restarting Oracle Traffic Director Instances Using Fusion Middleware Control in *Administering Oracle Traffic Director*.

For a standalone instance, you can restart from `DOMAIN_HOME/config/fmwconfig/components/OTD/instances/Instance_Name/bin` using the `./restart` command.

B

Requirements for Installing Oracle Traffic Director on Engineered Systems

This appendix describes additional procedures required for configuring engineered systems before installing Oracle Traffic Director.

This appendix contains the following sections:

- [Configuring Shared Storage on Exalogic before Installing Oracle Traffic Director](#)
- [Configuring and Creating Zones on Oracle SuperCluster for Installing Oracle Traffic Director](#)

Configuring Shared Storage on Exalogic before Installing Oracle Traffic Director

This section describes how to configure shared storage on the ZFS appliance in Exalogic, before installing Oracle Traffic Director.

The setup that is discussed in this section is ideal when you are looking for application-level traffic management capabilities to monitor and shape the traffic within Exalogic. In order to achieve this, two compute nodes are allocated, wherein incoming traffic is appropriately screened and routed to one of the back-end application servers. In this scenario, Oracle Traffic Director, that acts as a web tier, is typically hosted on two compute nodes and the application tier is located on other compute nodes. The web tier and application tier traffic here are isolated both at the physical level as well as the network level.

Note:

On Exalogic (Solaris), Oracle Traffic Director can be configured for high availability only when installed on a global zone. In addition, all administration nodes must be running on the global zone.

This section contains the following sections:

- [Overview of Shared Storage in Exalogic](#)
- [Creating Projects and Shares](#)
- [Mounting Shares](#)

Overview of Shared Storage in Exalogic

In an Exalogic environment, all compute nodes are connected to a shared storage array (ZFS storage appliance) through the InfiniBand fabric. The shared storage array

is used to install and configure all applications, and it is mounted locally within each of these compute nodes through Network File System (NFS).

Before installing Oracle Traffic Director on Exalogic, you must first create new projects and shares, and then mount these shares locally.

For an Oracle Traffic Director installation, it is recommended that the share hosting Oracle Traffic Director is unique to the compute node. For example, if Oracle Traffic Director is installed on two compute nodes for high availability, then the following installation layout is recommended:

- Create a share named `primary` within the storage array and mount this share locally within one compute node.
- Create a share named `secondary` within the storage array and mount this share locally within another compute node.

Creating Projects and Shares

If you wish to configure Oracle Traffic Director for high availability, the administration server and administration node must have root access within the instance root directory. Similarly, the ZFS share location needs to be configured appropriately so that a `root` user can read and write to this share location. This can be accomplished by enabling root access as NFS exception within the ZFS console.

Perform the following steps for creating and mounting shares with root access:



Note:

It is recommended that you install Oracle Traffic Director on each node. This is to ensure that there is no application downtime while patching Oracle Traffic Director.

1. Create a new project and create new shares within it, or create new shares within an existing project.
2. Sign in to the ZFS storage appliance.
3. Ensure that the shares that you just created are configured to allow root access on the compute nodes that will host Oracle Traffic Director. This can be done by:
 - Using the ZFS shared storage Administration Console:

In the NFS Exceptions section in the ZFS shared storage administration console, ensure that the share hosting Oracle Traffic Director configuration has appropriate NFS exceptions to allow root access.

In addition, in the Properties section in the Project Settings page, deselect the following options:

 - Update access time on read
 - Restrict ownership change

For more information about using these options, see the following guides:

 - Oracle Exalogic Elastic Cloud Machine Owner's Guide
 - Oracle Exalogic Elastic Cloud Administrator's Guide

- Using the CLI:

Enter the following command:

```
sharenfs ="sec=sys,rw=@<ip-address-1>/<network-prefix-bits>,root=@<ip-address-2>/<network-prefix-bits>"
```

- For an Exalogic physical configuration, `ip-address-1` and `ip-address-2` would be the `BOND0` IP addresses of the compute nodes.
- For an Exalogic virtual configuration, `ip-address-1` and `ip-address-2` would be the IP addresses of the vServers on the `IPoIB-vServer-shared-storage` network.

Example:

```
set sharenfs="sec=sys,rw=@196.168.10.0/24,root=@192.168.10.1/24"
```

Note:

- The terms `BOND0` and `BOND1` refer to the default interfaces for IP over InfiniBand (IPoIB) and Ethernet over InfiniBand (EoIB), respectively, on the Oracle Linux operating system.
- Oracle Solaris uses the IP Multipathing (IPMP) technology to support IPMP Groups that consist of one or more physical interfaces on the same system that are configured with the same IPMP group name. This technology provides the same functionality as Bonded Interfaces on Oracle Linux. You can name the IPMP groups anything. In this guide, `BOND0` and `BOND1` are used as example names to keep the terminology consistent with Oracle Linux.

For shares that were created without root access, run the following commands. This ensures that a root user within a compute node that hosts Oracle Traffic Director is able to start the administration server and administration node:

```
<ZFS-SharedStorage> shares
<ZFS-SharedStorage> select <Project-used-for-OTD>
<ZFS-SharedStorage> get sharenfs
<ZFS-SharedStorage> set sharenfs ="sec=sys,rw=@<ip-address-1>/<network-prefix-bits>,root=@<ip-address-2>/<network-prefix-bits>"
<ZFS-SharedStorage> commit
```

Mounting Shares

After creating the shares with the appropriate permission, mount the shares based on your requirement:

- For information about mounting shares on an Exalogic physical configuration, see *Creating NFSv4 Mount Points on Oracle Linux* in *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

- For information about mounting shares on an Exalogic virtual configuration, see *Setting Up Access to the ZFS Storage Appliance for a vServer in Oracle Exalogic Elastic Cloud Administrator's Guide*.

The mount point that you create is the location where Oracle Traffic Director will be installed. For more information, see [Installing Oracle Traffic Director](#).

Configuring and Creating Zones on Oracle SuperCluster for Installing Oracle Traffic Director

This section provides information about global and non-global zones, and discusses the various options for installing Oracle Traffic Director on Oracle SuperCluster.

The setup that is discussed in this chapter is ideal when you are looking for application-level traffic management capabilities to monitor and shape the traffic within Oracle SuperCluster. In Oracle SuperCluster, two zones (global or non-global) are allocated, wherein incoming traffic is screened and routed to one of the back-end application servers. In this scenario, Oracle Traffic Director (web tier) is typically hosted on two zones and the application tier is located on another zone.

This section contains the following sections:

- [Overview of Installing Oracle Traffic Director on Oracle SuperCluster](#)
- [Installing Oracle Traffic Director on Oracle SuperCluster](#)

Overview of Installing Oracle Traffic Director on Oracle SuperCluster

Before installing Oracle Traffic Director on Oracle SuperCluster, you must consider the following.

- Oracle Traffic Director requires an application domain, such as Oracle VM Server for SPARC (formerly called Logical Domains), running Solaris 11.1 for it to run successfully.
- In an Oracle VM Server for SPARC, Oracle Traffic Director can be installed on either a global zone or a non-global zone.

The global zone is the default operating system and has control over all the processes. A global zone always exists even when no other zones are configured. A global zone is also used for system-wide administrative control.

A non-global zone, referred to as a zone, is configured inside the global zone. Each zone is an isolated OS environment that you can use to run applications. The applications and processes that are running in one zone do not affect what is running in other zones.

For more information about global and non-global zones, see Oracle Solaris Zones section of *Oracle Solaris 11.1 Administration: Oracle Solaris Zones, Oracle Solaris 10 Zones, and Resource Management*: http://docs.oracle.com/cd/E26502_01/html/E29024/zone.html.

- One important factor to consider when choosing global or non-global zones is that Oracle Traffic Director can be configured for high availability only when installed on a global zone. In addition, all administration nodes must be running on the global zone.

 **Note:**

Configuring VRRP and hence configuring failover groups is supported only in the global zone, and for a privileged user. This is because of Solaris VRRP limitations. For more information, see the VRRP Limitations section of the *Managing Oracle Solaris 11.1 Network Performance Guide*: http://docs.oracle.com/cd/E26502_01/html/E28993/gkmfl.html.

Installing Oracle Traffic Director on Oracle SuperCluster

Oracle Traffic Director can be installed on a global or non-global zone. Note that in order to take advantage of Oracle Traffic Director's high availability capability, you must install it on a global zone.

 **Note:**

Another option to configure Oracle Traffic Director for HA is to install Oracle Solaris Cluster. For more information, see the *Oracle Solaris Cluster Data Services Planning and Administration Guide*: http://docs.oracle.com/cd/E29086_01/html/E29475/index.html.

For an Oracle Traffic Director installation, it is recommended that the zone (global or non-global) hosting Oracle Traffic Director is unique. Note that for installing Oracle Traffic Director on a non-global zone, it must be configured with appropriate disk and network information.

The steps for installing Oracle Traffic Director on Oracle SuperCluster are as follows:

1. Configure and create a new zone, either global or non-global. For more information about leveraging zones, see Oracle Solaris Zones in http://docs.oracle.com/cd/E26502_01/html/E29024/zone.html.
2. Download and install Oracle Traffic Director on the zone. For more information on installing, see [Installing Oracle Traffic Director](#).

C

Updating the JDK After Installing and Configuring an Oracle Fusion Middleware Product

Consider that you have a JDK version `jdk1.8.0_121` installed on your machine. When you install and configure an Oracle Fusion Middleware product, the utilities, such as Configuration Wizard (`config.sh|exe`), OPatch, or RCU point to a default JDK, for example, `jdk1.8.0_121`. After some time, Oracle releases a new version of the JDK, say `jdk1.8.0_131` that carries security enhancements and bug fixes. From 12c (12.2.1.3.0) onwards, you can upgrade the existing JDK to a newer version, and can have the complete product stack point to the newer version of the JDK.

You can maintain multiple versions of JDK and switch to the required version on need basis.

- [About Updating the JDK Location After Installing an Oracle Fusion Middleware Product](#)

The binaries and other metadata and utility scripts in the Oracle home and Domain home, such as RCU or Configuration Wizard, use a JDK version that was used while installing the software and continue to refer to the same version of the JDK. The JDK path is stored in a variable called `JAVA_HOME` which is centrally located in `.globalEnv.properties` file inside the `ORACLE_HOME/oui` directory.

About Updating the JDK Location After Installing an Oracle Fusion Middleware Product

The binaries and other metadata and utility scripts in the Oracle home and Domain home, such as RCU or Configuration Wizard, use a JDK version that was used while installing the software and continue to refer to the same version of the JDK. The JDK path is stored in a variable called `JAVA_HOME` which is centrally located in `.globalEnv.properties` file inside the `ORACLE_HOME/oui` directory.

The utility scripts such as `config.sh|cmd`, `launch.sh`, or `opatch` reside in the `ORACLE_HOME`, and when you invoke them, they refer to the `JAVA_HOME` variable located in `.globalEnv.properties` file. To point these scripts and utilities to the newer version of JDK, you must update the value of the `JAVA_HOME` variable in the `.globalEnv.properties` file by following the directions listed in [Updating the JDK Location in an Existing Oracle Home](#).

To make the scripts and files in your Domain home directory point to the newer version of the JDK, you can follow one of the following approaches:

- Specify the path to the newer JDK on the Domain Mode and JDK screen while running the Configuration Wizard.

For example, consider that you installed Oracle Fusion Middleware Infrastructure with the JDK version `8u121`. So while configuring the WebLogic domain with the Configuration Assistant, you can select the path to the newer JDK on the Domain

Mode and JDK screen of the Configuration Wizard. Example: `/scratch/jdk/jdk1.8.0_131`.

- Manually locate the files that have references to the JDK using `grep` (UNIX) or `findstr` (Windows) commands and update each reference. See [Updating the JDK Location in an Existing Domain Home](#).

Note:

If you install the newer version of the JDK in the same location as the existing JDK by overwriting the files, then you don't need to take any action.

- [Updating the JDK Location in an Existing Oracle Home](#)
The `getProperty.sh|cmd` script displays the value of a variable, such as `JAVA_HOME`, from the `.globalEnv.properties` file. The `setProperty.sh|cmd` script is used to set the value of variables, such as `OLD_JAVA_HOME` or `JAVA_HOME` that contain the locations of old and new JDKs in the `.globalEnv.properties` file.
- [Updating the JDK Location in an Existing Domain Home](#)
You must search the references to the current JDK, for example `jdk1.8.0_121` manually, and replace those instances with the location of the new JDK.

Updating the JDK Location in an Existing Oracle Home

The `getProperty.sh|cmd` script displays the value of a variable, such as `JAVA_HOME`, from the `.globalEnv.properties` file. The `setProperty.sh|cmd` script is used to set the value of variables, such as `OLD_JAVA_HOME` or `JAVA_HOME` that contain the locations of old and new JDKs in the `.globalEnv.properties` file.

The `getProperty.sh|cmd` and `setProperty.sh|cmd` scripts are located in the following location:

(UNIX) `ORACLE_HOME/oui/bin`

(Windows) `ORACLE_HOME\oui\bin`

Where, `ORACLE_HOME` is the directory that contains the products using the current version of the JDK, such as `jdk1.8.0_121`.

To update the JDK location in the `.globalEnv.properties` file:

1. Use the `getProperty.sh|cmd` script to display the path of the current JDK from the `JAVA_HOME` variable. For example:

(UNIX) `ORACLE_HOME/oui/bin/getProperty.sh JAVA_HOME`

(Windows) `ORACLE_HOME\oui\bin\getProperty.cmd JAVA_HOME`

`echo JAVA_HOME`

Where `JAVA_HOME` is the variable in the `.globalEnv.properties` file that contains the location of the JDK.

2. Back up the path of the current JDK to another variable such as `OLD_JAVA_HOME` in the `.globalEnv.properties` file by entering the following commands:

(UNIX) `ORACLE_HOME/oui/bin/setProperty.sh -name OLD_JAVA_HOME -value specify_the_path_of_current_JDK`

(Windows) `ORACLE_HOME\oui\bin\setProperty.cmd -name OLD_JAVA_HOME -value specify_the_path_of_current_JDK`

This command creates a new variable called `OLD_JAVA_HOME` in the `.globalEnv.properties` file, with a value that you have specified.

3. Set the new location of the JDK in the `JAVA_HOME` variable of the `.globalEnv.properties` file, by entering the following commands:

```
(UNIX) ORACLE_HOME/oui/bin/setProperty.sh -name JAVA_HOME -  
value specify_the_location_of_new_JDK  
(Windows) ORACLE_HOME\oui\bin\setProperty.cmd -name JAVA_HOME  
-value specify_the_location_of_new_JDK
```

After you run this command, the `JAVA_HOME` variable in the `.globalEnv.properties` file now contains the path to the new JDK, such as `jdk1.8.0_131`.

Updating the JDK Location in an Existing Domain Home

You must search the references to the current JDK, for example `jdk1.8.0_121` manually, and replace those instances with the location of the new JDK.

You can use the `grep` (UNIX) or `findstr` (Windows) commands to search for the `jdk`-related references.

You'll likely be required to update the location of JDK in the following three files:

```
(UNIX) DOMAIN_HOME/bin/setNMJavaHome.sh  
(Windows) DOMAIN_HOME\bin\setNMJavaHome.cmd
```

```
(UNIX) DOMAIN_HOME/nodemanager/nodemanager.properties  
(Windows) DOMAIN_HOME\nodemanager\nodemanager.properties
```

```
(UNIX) DOMAIN_HOME/bin/setDomainEnv.sh  
(Windows) DOMAIN_HOME\bin\setDomainEnv.cmd
```

Index

B

built-in SAFs in obj.conf, [3-1](#)

C

core SAFs in obj.conf, [3-1](#)

D

directives
obj.conf, [3-1](#)

E

elements in the server.xml file, [2-4](#)

I

installation log files, [3-1](#)

O

obj.conf
directives, [3-1](#)

P

predefined SAFs in obj.conf, [3-1](#)

S

SAFs
predefined in obj.conf, [3-1](#)