Oracle® Traffic Director

Installation Guide

11g Release 1 (11.1.1.9.0)

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Oracle Traffic Director Installation Guide 11g Release 1 (11.1.1.9.0)

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Preface

This document provides information about installing Oracle Traffic Director.

Audience

The intended audience for this document is the person who administers and maintains Oracle Traffic Director.

This document assumes you are familiar with the following topics:

- Working in a terminal window

- HTTP

- XML

- Executing operating system commands on UNIX-like platforms

Documentation Accessibility

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Related Documents

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

- *Oracle Traffic Director Configuration File Reference*

- *Oracle Traffic Director Command-line Reference*

- *Oracle Traffic Director Administrator Guide*

- *Oracle Traffic Director Release Notes*

Conventions

The following text conventions are used in this document:

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

1

Overview of Installing Oracle Traffic Director

Oracle Traffic Director is a software load balancer for load balancing HTTP/S and TCP traffic to servers in the back-end. These 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. For information about the features of the product, see "Getting Started with Oracle Traffic Director" section of the *Oracle Traffic Director Administrator's Guide*.

This guide provides information about installing Oracle Traffic Director on:

- Oracle's engineered systems platform, including Exalogic (running either Oracle Linux or Oracle Solaris), or Oracle SuperCluster, or,

- Red Hat Enterprise Linux (RHEL) or Oracle Enterprise Linux (OEL) systems outside of Exalogic, with an appropriate restricted use license.

> **Note:** Before you start installing Oracle Traffic Director, it is recommended that you get a basic understanding of the product and its features, the related terminology, and the installation topology. For more information, see the "Getting Started with Oracle Traffic Director" section of the *Oracle Traffic Director Administrator's Guide*.

This chapter contains the following sections:

- Installation, Deinstallation and Reinstallation Task Flow

- Prerequisites for Installing Oracle Traffic Director

1.1 Installation, Deinstallation and Reinstallation Task Flow

Table 1–1 provides information about the tasks that need to be performed for installing Oracle Traffic Director, including tasks to be performed if you are installing on Exalogic physical and virtual configurations or on Oracle SuperCluster. In addition, it includes information about deinstalling and reinstalling Oracle Traffic Director.

Table 1–1   Installation, Deinstallation and Reinstallation Task Flow

Task	For more information, see...
Prerequisites for Installing Oracle Traffic Director	Section 1.2
Installing Oracle Traffic Director	Section 3.1
Creating the administration server	Section 4.1

Table 1–1   (Cont.) Installation, Deinstallation and Reinstallation Task Flow

Task	For more information, see...
Creating an administration node	Section 4.2
Verifying the installation	Section 5.1
Deinstalling Oracle Traffic Director	Section 5.2
Reinstalling Oracle Traffic Director	Section 5.3

For information about upgrading Oracle Traffic Director from 11.1.1.6.0 or 11.1.1.7.0 to 11.1.1.9.0, see Chapter 6, "Upgrading Oracle Traffic Director."

1.2 Prerequisites for Installing Oracle Traffic Director

This section provides the following information:

- "Prerequisites for Installing Oracle Traffic Director on Exalogic"

- "Prerequisites for Installing Oracle Traffic Director on Oracle SuperCluster"

- "Prequisites for Installing Oracle Traffic Director on Linux"

1.2.1 Prerequisites for Installing Oracle Traffic Director on Exalogic

The following are the prerequisites for installing Oracle Traffic Director on Exalogic.

- Perform the procedures in Chapter 2, "Requirements for Installing Oracle Traffic Director on Engineered Systems", in section Chapter 2.1, "Configuring Shared Storage on Exalogic for Installing Oracle Traffic Director".

- In an environment where the underlying InfiniBand fabric is leveraging the InfiniBand partition technology, Oracle Traffic Director will need to be part of the partition with full membership. A full member of an IB partition can communicate with any other member of the partition. Full membership ensures that the Oracle Traffic Director administration server and all the administration nodes are able to communicate with each other without any issues. In addition, the Oracle Traffic Director instances should have two-way communication with app-tier nodes. So the compute nodes running Oracle Traffic Director and the compute nodes in the app-tier should all be full members of an IB partition. For more information about leveraging InfiniBand partitions, see "Using InfiniBand Partitions in Exalogic Physical Environments" in the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*:

- Supported Platforms: Exalogic physical and virtual configurations.

- Minimum memory: 2 GB RAM for a vServer hosting the administration server.

> **Note:**
>
> - A vServer hosting Oracle Traffic Director server instances can also be configured with 2GB RAM. However, memory and vCPU requirements for administration server instances can vary depending on the configuration and load requirements.
>
> - If Oracle Traffic Director is configured with content caching, then the virtual memory size must be increased based on how much memory is allocated for caching static content. For more information about content caching, see the *Oracle Traffic Director Administrator's Guide*.

- CPUs per administration server/node: 2 CPUs in an Exalogic physical configuration; 2 to 4 vCPUs in an Exalogic virtual configuration.

- Java runtime environment (JRE): JRE 7, included in the installer.

- The following packages are mandatory for installing Oracle Traffic Director on Oracle Linux 5.

  - compat-glibc-2.3.4-x86_64 or higher

  - compat-libstdc++-33-3.2.3-x86_64 or higher

  - glibc-2.5-12-x86_64 or higher

  - libgcc-4.1.1-x86_64 or higher

  - libstdc++-4.1.1-x86_64 or higher

- Two hosts (either physical compute node or virtual machine) within Exalogic.

  > **Note:** Oracle Traffic Director needs to be installed on two hosts only if you wish to provide high availability. You can install Oracle Traffic Director on a single host if you do not wish to configure it for high availability.

- If you intend to configure Oracle Traffic Director for high availability, a floating/virtual IP address within the network interface is required.

1.2.2 Prerequisites for Installing Oracle Traffic Director on Oracle SuperCluster

The following are the prerequisites for installing Oracle Traffic Director on Oracle SuperCluster.

- Perform the procedures in Chapter 2, "Requirements for Installing Oracle Traffic Director on Engineered Systems", in section Chapter 2.2, "Configuring and Creating Zones on Oracle SuperCluster for Installing Oracle Traffic Director".

- Supported Platforms: Solaris 11.1 global zones residing in Oracle SuperCluster domains.

  > **Note:** While Oracle Traffic Director can be deployed on non-global zones, it will not have high availability capability.

- Minimum memory: 2 GB RAM for an Oracle VM Server for SPARC hosting the administration server.

> **Note:**
>
> - An Oracle VM Server for SPARC hosting Oracle Traffic Director server instances can also be configured with 2GB RAM. However, memory and CPU requirements for administration server instances can vary depending on the configuration and load requirements.
>
> - If Oracle Traffic Director is configured with content caching, then the virtual memory size must be increased based on how much memory is allocated for caching static content. For more information about content caching, see the *Oracle Traffic Director Administrator's Guide*.

- Java runtime environment (JRE): JRE 7, included in the installer.
- Oracle VM Servers for SPARC hosting global zones or non-global zones within Oracle SuperCluster.

> **Note:** If you wish to configure Oracle Traffic Director for high availability, it must be installed on two global zones. In addition, all administration nodes must be running on the global zone.
>
> You can install Oracle Traffic Director on a single global or non-global zone if you do not wish to configure it for high availability. For more information about configuring Oracle Traffic Director for high availability, see "Configuring Oracle Traffic Director for High Availability" section of the *Oracle Traffic Director Administrator's Guide*.

- If you intend to configure Oracle Traffic Director for high availability, a floating/virtual IP address within the network interface is required.

1.2.3 Prequisites for Installing Oracle Traffic Director on Linux

The following are the prerequisites for installing Oracle Traffic Director on Oracle Linux with an appropriate restricted use license:

- At least 1 core CPU with 4 GB RAM and 4 GB Swap.
- The following packages are mandatory for installing Oracle Traffic Director on Oracle Linux 5.
  - compat-glibc-2.3.4-x86_64 or higher
  - compat-libstdc++-33-3.2.3-x86_64 or higher
  - glibc-2.5-12-x86_64 or higher
  - libgcc-4.1.1-x86_64 or higher
  - libstdc++-4.1.1-x86_64 or higher
- If you are planning to install Oracle Traffic Director on a NFS, then you must ensure that the Oracle Traffic Director instance home (the Oracle Traffic Director configuration location) has write access as a root user.

2

Requirements for Installing Oracle Traffic Director on Engineered Systems

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

This chapter contains the following sections:

- Configuring Shared Storage on Exalogic for Installing Oracle Traffic Director
- Configuring and Creating Zones on Oracle SuperCluster for Installing Oracle Traffic Director

2.1 Configuring Shared Storage on Exalogic for 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 (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 subsections:

- Overview of Shared Storage in Exalogic
- Creating Projects and Shares
- Mounting Shares

2.1.1 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.

2.1.2 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.

Ensure that the Oracle User ID and Group ID of non-root users and groups are same on the both the administration server and administration node which it is mounted.

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. For information about creating projects and shares, see the following sections in the "Configuring the Sun ZFS Storage 7320 Appliance" chapter of the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*:

   - Creating Custom Projects

   - Creating Custom Shares

2. Log 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:

  Run the following command:

  ```
  sharenfs
  ="sec=sys,rw=@<ip-address-1>/<network-prefix-bits>,root=@<ip-address-2>/<ne
  twork-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>/<n
etwork-prefix-bits>"
<ZFS-SharedStorage> commit
```

2.1.3 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 the *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 the *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 Chapter 3, "Installing Oracle Traffic Director."

2.2 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 section 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 subsections:

■ Overview of Installing Oracle Traffic Director on Oracle SuperCluster

■ Installing Oracle Traffic Director on Oracle SuperCluster

2.2.1 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.

2.2.2 Installing Oracle Traffic Director on Oracle SuperCluster

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

2. Download and install Oracle Traffic Director on the zone. For more information, see Chapter 3, "Installing Oracle Traffic Director."

3

Installing Oracle Traffic Director

This chapter provides information about installing Oracle Traffic Director on an NFS share that is mounted locally within a compute node.

If installing Oracle Traffic Director on engineered systems, first perform the procedures described in Chapter 2, "Requirements for Installing Oracle Traffic Director on Engineered Systems."

> **Note:** Oracle Traffic Director can be configured within a Solaris Zone/Container and provide high availability for IP over InfiniBand (IPoIB) on Solaris 11.2 or above.

This chapter contains the following sections:

- Installation Procedure
- Troubleshooting Installation Problems

3.1 Installation Procedure

This section describes how to install Oracle Traffic Director as a physical application.

> **Note:** Before installing Oracle Traffic Director, verify that the prerequisites listed in Section 1.2, "Prerequisites for Installing Oracle Traffic Director" are fulfilled.

You can install Oracle Traffic Director either by using a graphical wizard or in silent mode.

- Section 3.1.1, "Installing Oracle Traffic Director in Graphical Mode"
- Section 3.1.2, "Installing Oracle Traffic Director in Silent Mode"

3.1.1 Installing Oracle Traffic Director in Graphical Mode

This section describes how to install Oracle Traffic Director by using an interactive graphical wizard provided by the Oracle Universal Installer. In order to configure Oracle Traffic Director for high availability, the steps below must be performed on two mount points.

1. Download the installer zip file, `TrafficDirector.zip`.

The location from which you should download the installer zip file varies depending on how you intend to use the product:

- **For development**: Oracle Technology Network

  http://www.oracle.com/technetwork/indexes/downloads/index.html

- **For production**: Oracle Software Delivery Cloud

  http://edelivery.oracle.com/

2. Extract the contents of the installer zip file to a directory of your choice. The directory should be on the host on which you want to install the administration server instance of the product.

3. Go to the `Disk1` subdirectory in the directory in which you unzipped the installer.

4. Run the following command:

   ```
   $./runInstaller
   ```

5. If a central inventory directory is not already available on the host, the **Specify Inventory Directory** screen is displayed.

   The inventory directory is used to store information about all Oracle software products installed in all Oracle homes on a host, provided the product was installed using Oracle Universal Installer. The directory also contains all the installation log files.

   The default inventory location is *USER_HOME*/oraInventory. Oracle recommends that you use a directory on the local file system that is not shared by other systems.

   a. Specify the Oracle inventory directory and the group to which you want to grant access to the inventory directory. The group must have write permissions to the Oracle inventory directory. All members of this group will be able to install products on this host.

      Click **OK** to continue.

      The **Inventory Location Confirmation** screen is displayed, prompting you to run the following script as the `root` user:

      inventory_directory/createCentralInventory.sh

      Note: If you run the `createCentralInventory.sh` script, the next time you install any Oracle software on this host, the Oracle Universal Installer automatically locates and updates the inventory, without prompting you to specify the inventory directory.

      ---

   b. If you do not have `root` access on this host and want to continue the installation with the local (instead of central) inventory location, select **Continue installation with local inventory**.

      Click **OK** to continue.

   The Oracle Traffic Director installation wizard starts.

6. Follow the on-screen prompts and instructions provided on the screens of the installation wizard. Table 3–1 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 3–1   Screens of the Installation Wizard

Screen	Description and Action Required
Welcome	Click **Next**.
Install Software Updates	You can use this screen to search for and download the latest software updates, including important security updates, through your My Oracle Support account.
	■ To skip this step, select **Skip Software Updates** and click **Next**.
	■ To search for and download software updates, specify whether you want to search for updates on My Oracle Support or on a local directory, enter the necessary information, and click **Search for Updates**.
Prerequisite Checks	The installer analyzes the host computer to ensure that the prerequisites are fulfilled. The results of the prerequisite checks are displayed on this screen.
	If a prerequisite check fails, an error or warning message is displayed.
	■ Fix the error and click **Retry**. 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 **Continue**.
	■ To stop the prerequisite checking process, click **Abort**.
	Click **Next** to continue.
Specify Installation Location	Specify the Oracle home directory.
	Oracle home is the directory in which software binaries for Oracle products are stored. This location is the NFS share that is mounted locally within the compute node. Note that run-time processes cannot write to this directory.
	Note: Oracle Traffic Director does not have any run-time dependencies on other Oracle products. So you can install the product in any directory that is currently empty.
	Click **Next** to continue.
Installation Summary	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.
	Review information on this screen.
	To change the Oracle home directory, click the **Back** button or the **Installation Location** link in the left navigation pane.
	To save the settings specified so far in the installation wizard in a text file (called a *response* file), click **Save**. If necessary, you can use the response file to perform the same installation from the command line.
	Click **Install** to proceed with the installation process.
Installation Progress	This screen shows the progress and status of the installation process.
	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.
	Click **Next** to continue.

Table 3–1   (Cont.) Screens of the Installation Wizard

Screen	Description and Action Required
Installation Complete	Click **Finish**.

> **Note:**   After installing Oracle Traffic Director, you must create the administration server instance as described in Section 4.1, "Creating the Administration Server."

3.1.2 Installing Oracle Traffic Director in Silent Mode

This section describes how to install Oracle Traffic Director in noninteractive mode by specifying installation options at the command line. On Exalogic, in order to configure Oracle Traffic Director for high availability, the steps below must be performed on two mount points.

> **Note:**   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 the "UNIX Users: Creating the oraInst.loc File" section of the *Oracle Fusion Middleware Installation Planning Guide*.

1. Download the installer zip file, `TrafficDirector.zip`.

   The location from which you should download the installer zip file varies depending on how you intend to use the product:

   - **For development**: Oracle Technology Network

     http://www.oracle.com/technetwork/indexes/downloads/index.html

   - **For production**: Oracle Software Delivery Cloud

     http://edelivery.oracle.com/

2. Extract the contents of the installer zip file to a directory of your choice. The directory should be on the host on which you want to install the administration server instance of the product.

3. Go to the `Disk1` subdirectory in the directory in which you unzipped the installer.

4. Run the following command:

```
$./runInstaller -silent -waitforcompletion
 -invPtrLoc path_to_oraInst.loc_file ORACLE_HOME=oracle_home
 SKIP_SOFTWARE_UPDATES=true
```

   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 cannot be used while performing silent installation of Oracle Traffic Director, as this option will cause the installation to fail.

For information about the options of the `runInstaller` command, see the "Silent Oracle Fusion Middleware Installation and Deinstallation" section of the *Oracle Fusion Middleware Installation Planning Guide*.

3.2 Troubleshooting Installation Problems

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

- Verify that your computer meets the requirements specified in Section 1.2, "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 Section 5.1.1, "Examine the Installation Log."

  2. Remove the failed installation by running the following command:

     `$ORACLE_HOME/oui/bin/`**`runInstaller -d`**

  3. Correct the issue that caused the error.

  4. Restart the installation process.

4

Creating the Administration Server and an Administration Node

This chapter provides information about creating administration server and administration nodes for Oracle Traffic Director.

This chapter contains the following sections:

- Creating the Administration Server
- Creating an Administration Node

4.1 Creating the Administration Server

After installing Oracle Traffic Director, create the Oracle Traffic Director administration server by performing the following steps:

> **Note:** For more information about the administration server, see "Managing the Administration Server" in the *Oracle Traffic Director Administration Guide*.

1. Use the `configure-server` command to create the administration server. You can configure Oracle Traffic Director as the `root` or a non-`root` user.

   When the administration server is configured as `root`, then Oracle Traffic Director starts the `keepalived` daemon automatically when you start instances that are part of a failover group, and stops the daemon when you stop the instances. On the other hand, if the administration server is configured as non-`root` and if the administration node process is running as non-`root` on the node where the instances are located, then the `keepalived` daemon does not start or stop automatically. In this case, you will need to run the `start-failover` command on those nodes as a `root` user. This is to manually start the failover. If this command is not executed, failover will not start and there will be no high availability. For more information about creating and managing failover groups, see "Configuring Oracle Traffic Director for High Availability" in the *Oracle Traffic Director Administrator's Guide*.

   To configure Oracle Traffic Director as the `root` user, run the following command:

   ```
   $ORACLE_HOME/bin/tadm configure-server [--user=admin-user]
   [--password-file=admin-passwd-file] [--host=admin-host] [--port=admin-port]
   [--rcfile=rcfile] [--echo] [--no-prompt] [--verbose] ([--admin-node]
   [--node-host=node-host] [--node-port=node-port]) [--server-user=root]
   [--java-home=java-home] [--bind-ip=ip] --instance-home=instance-home
   ```

> **Note:**
>
> - `ORACLE_HOME` is the directory in which you installed Oracle Traffic Director.
>
> - The user name can contain a maximum of 100 characters and must not contain spaces.

Example:

```
$ORACLE_HOME/bin/tadm configure-server --user=otd_admin --server-user=root
--instance-home=production/otd/
```

> **Note:** If the `--port` option is not specified, it defaults to 8989.

To configure Oracle Traffic Director as a non-`root` user, run the `configure-server` command without the `--server-user` option. Oracle Traffic Director supports high availability even when it is configured as a non-`root` user. For more inform see "Configuring Oracle Traffic Director for High Availability" in the *Oracle Traffic Director Administrator's Guide*.

If you do not use the `--password-file` option to specify the file containing the password, the following prompt is displayed:

```
Please enter admin-user-password>
```

> **Note:**
>
> You can remove the administration server instance by running the following command:
>
> ```
> $ORACLE_HOME/bin/tadm unconfigure-server --instance-home=path
> ```
>
> For more information about the `configure-server` and `unconfigure-server` commands, see the *Oracle Traffic Director Command-Line Interface Reference*.

2. Enter the administrator password. You will later use this password to log in to the Oracle Traffic Director administration console.

   A prompt to re-enter the administrator password is displayed, as follows:

   ```
   Please enter admin-user-password again>
   ```

3. Confirm the administrator password by entering it again.

   An administration server instance of Oracle Traffic Director is created and deployed on the local host in a directory named `admin-server` within the `instance-home` directory that you specified in step 1.

4.2 Creating an Administration Node

To create an administration node, make sure that the administration server is running, and then run the `configure-server` command from the shell prompt of the host that

you want to designate as the administration node. You can create the administration node as the `root` or a non-`root` user.

For example, to designate a mount point called `secondary` as an Oracle Traffic Director administration node that is registered with the administration server on the host `admin_server`, do the following:

> **Note:** To create the administration node as `root`, run the `configure-server` command as `root` and include the `--server-user=root` option.

1. Run the `configure-server` command from the `secondary` system.

   Example:

   ```
   $ORACLE_HOME/bin/tadm configure-server --user=admin --host=admin_server
   --port=8889 --admin-node --node-host=secondary --node-port=8900
    --instance-home=/home/otd/instances
   ```

   - `ORACLE_HOME` is the path to the directory or mount point containing the Oracle Traffic Director installation on the node that you want to designate as the administration node.

   - The `--instance-home` option specifies the directory in which the instance directories should be created on the node.

   - The `--admin-node` option specifies that the specified host should be configured as an administration node.

   - The `--port` option specifies the port where the administration server is running. If the `--port` option is not specified, it defaults to 8989.

   - The `--node-port` option specifies the port where the administration node will run. If the `--node-port` option is not specified, it defaults to 8989.

   The following message is displayed.

   ```
   This command will create an administration node and register it with the remote
   administration server: https://secondary:8900.
   Enter admin-user-password>
   ```

2. Enter the password for the administration server user.

   The `configure-server` command attempts to connect to the remote administration server by using the specified administration server host, port, user, and password.

   > **Note:** If the administration server is not reachable, the following error message is displayed.
   >
   > ```
   > OTD-70104 Unable to communicate with the administration server:
   >  Unable to connect to admin-server. Please check if the server is
   >  up and running and that the host and port provided are correct.
   > ```
   >
   > Start the administration server and run the `configure-server` command again.

If this is the first time that the host on which you are creating the administration node is attempting to connect to the administration server, the server certificate of the administration server is displayed.

3. Enter `y` to trust the certificate.

The following message is displayed:

```
OTD-70215 The administration node has been configured successfully.
The node can be started by executing:
/home/otd/instances/admin-server/bin/startserv
```

For more information about `configure-server`, see the *Oracle Traffic Director Command-Line Reference* or run the command with the `--help` option.

After you start the administration node, you can create instances of Oracle Traffic Director configurations on the administration node. Note that on each administration node, you can create only one instance of a configuration.

5

Post Installation

This chapter provides information about verifying the installation to check if it completed successfully. In addition, it provides information about the steps for deinstalling and reinstalling Oracle Traffic Director.

This document contains the following sections:

- Verifying the Installation
- Deinstalling Oracle Traffic Director
- Reinstalling Oracle Traffic Director

5.1 Verifying the Installation

You can verify whether the installation was completed properly by examining the installation log file, looking at the directories and files in the Oracle home directory, and by trying to access the Oracle Traffic Director administration console.

- Section 5.1.1, "Examine the Installation Log"
- Section 5.1.2, "Verifying the Installation Directory Structure"
- Section 5.1.3, "Login to the Administration Console"

5.1.1 Examine 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 `logs` directory contains the following files:

- `install`*date-time-stamp*`.log`

  This is the main log file.

- `install`*date-time-stamp*`.out`

  This log file contains the output and error streams during the installation.

- `installActions`*date-time-stamp*`.log`

  This file is used by the installer GUI to keep track of internal information.

- `installProfile`*`date-time-stamp`*`.log`

  This log file contains the overall statistics, like time taken to complete the installation, as well as configuration, memory, and CPU details.

- `oraInstall`*`date-time-stamp`*`.log`

  This log file contains the output stream of the copy session.

- `timeTaken`*`date-time-stamp`*`.log`

  This file is created only if you start the installer with the `-printtime` option. It contains information for the amount of time taken to move between screens (applicable for GUI installations only).

- `time`*`date-time-stamp`*`.log`

  This file is created only if you start the installer with the `-printtime` option. It contains time information for the copy session.

- `memory`*`date-time-stamp`*`.log`

  This file is created only if you start the installer with the `-printmemory` option. It contains memory usage information for the copy session.

5.1.2 Verifying the Installation Directory Structure

After installing Oracle Traffic Director and performing the post-installation steps, verify that the Oracle home directory contains the following directories:

After installing Oracle Traffic Director and performing the post-installation steps, verify that the Oracle home directory contains the following directories:

```
bin
cfgtoollogs
diagnostics
inventory
jdk
lib
Opatch
oui
```

> **Note:** If you created the administration server as described in Section 4.1, "Creating the Administration Server," and while doing so, if you specified the Oracle home directory for the `instance-home` option of the `configure-server` command, then you will see a directory named `admin-server` as well in the Oracle home directory.

For information about the contents of each of these directories, see the "Directory Structure" section in the *Oracle Traffic Director Configuration Files Reference*.

5.1.3 Login to the Administration Console

After installing Oracle Traffic Director and performing the steps described in Section 4.1, "Creating the Administration Server," you can verify the installation by trying to log in to the administration console of the Oracle Traffic Director administration server, by performing the following steps:

1. Start the administration server instance, by running the following command:

   ```
   $ORACLE_HOME/admin-server/bin/startserv
   ```

> **Note:** If Oracle Traffic Director is configured for high availability, make sure to start the administration node by running the following command:
>
> ```
> /home/otd/instances/admin-server/bin/startserv
> ```

2. From the resulting console messages, note the URL of the administration console, as indicated by the bold text in the following example:

```
Oracle Traffic Director 11.1.1.9.0 B01/16/2014 11:12
[NOTIFICATION:1] [OTD-80118] Using [Java HotSpot(TM) 64-Bit Server VM, Version
1.6.0_35] from [Sun Microsystems Inc.]
[NOTIFICATION:1] [OTD-80000] Loading web module in virtual server
[admin-server] at [/admin]
[NOTIFICATION:1] [OTD-80000] Loading web module in virtual server
[admin-server] at [/jmxconnector]
[NOTIFICATION:1] [OTD-10358] admin-ssl-port: https://bin.example.com:1895 ready
to accept requests
[NOTIFICATION:1] [OTD-10487] successful server startup
```

3. In your web browser, enter the URL that you noted in the previous step.

   An error message about a problem with the server's security certificate is displayed. The text of the message varies depending on the browser you use. The error message is displayed because the Oracle Traffic Director administration server uses a self-signed certificate, rather than a certificate issued by a trusted certificate authority.

4. Proceed to the log-in page of the administration console by choosing to trust the certificate.

   The steps to be performed to trust a certificate vary depending on the browser you use. As an example, in Mozilla Firefox 4.0, click on the **I Understand the Risks** link on the error page, then click the **Add Exception** button, and finally, on the result page, click the **Confirm Security Exception** button.

5. Log in using the administrator user name and password that you specified while creating the administration server instance, as described in Section 4.1, "Creating the Administration Server."

5.2 Deinstalling Oracle Traffic Director

You might want to remove an Oracle Traffic Director installation, either to remove files pertaining to a failed installation or to install a newer version.

You should always use the instructions provided here for removing the software. If you try to remove the software manually, you may experience problems when you try to reinstall the software at a later time. Following the procedure described here will ensure that the software is properly removed.

To deinstall Oracle Traffic Director, perform the following steps:

1. Run the `unconfigure-server` command from the Oracle Traffic Director command-line interface to remove the administration server and all instances of Oracle Traffic Director on the specified INSTANCE_HOME directory. This command also ensures that all related configuration settings such as services, keepalived and so on are fully removed.

```
$ORACLE_HOME/bin/tadm unconfigure-server --instance-home=instance_home
```

2. After running the `unconfigure-server` command, run the following command:

```
$ORACLE_HOME/oui/bin/runInstaller -d
```

The deinstallation wizard starts.

3. Follow the on-screen prompts and instructions provided on the screens of the installation wizard.

For more information about a specific screen, click the **Help** button on the screen.

5.3 Reinstalling Oracle Traffic Director

You cannot reinstall Oracle Traffic Director in a directory that already contains an installation of the product.

To reinstall Oracle Traffic Director, perform the following steps:

1. Deinstall the existing installation by following the procedure described in Section 5.2, "Deinstalling Oracle Traffic Director."

2. Install Oracle Traffic Director as described in Section 3.1, "Installation Procedure."

6

Upgrading Oracle Traffic Director

This chapter provides information about upgrading Oracle Traffic Director from 11.1.1.6.0 or 11.1.1.7.0 to 11.1.1.9.0.

This chapter contains the following sections:

- Preparing to Upgrade Oracle Traffic Director
- Upgrade Procedure
- Post-Upgrade Steps

6.1 Preparing to Upgrade Oracle Traffic Director

Before upgrading Oracle Traffic Director, perform the following steps:

- Stop the administration server and all the instances across all nodes.

  Use the following command to stop the administration server:

  ```
  > $INSTANCE_HOME/admin-server/bin/stopserv
  ```

  Use the following command from within the instance directory to stop the instances:

  ```
  > $INSTANCE_HOME/net-config_name/bin/stopserv
  ```

- Perform the following step only if you had used the `configure-server` command as `root` for configuring your existing 11.1.1.6.0 or 11.1.1.7.0 installation, and if the current `INSTANCE_HOME` location is the same as `ORACLE_HOME`.

  Oracle Traffic Director requires configuration files for administration server, administration nodes and instances be kept separate. Hence, before upgrading Oracle Traffic Director from 11.1.1.6.0 or 11.1.1.7.0 to 11.1.1.9.0, ownership of the files in the following directories must be changed to that of the user installing Oracle Traffic Director:

  - `ORACLE_HOME`
  - `ORACLE_HOME/bin` (recursively)
  - `ORACLE_HOME/lib` (recursively)

6.2 Upgrade Procedure

The steps for upgrading Oracle Traffic Director from 11.1.1.6.0 or 11.1.1.7.0 to 11.1.1.9.0 are the same as the steps for installing Oracle Traffic Director. While performing the upgrade process, ensure that the installation location that you provide is the same as

the 11.1.1.6.0 or 11.1.1.7.0 location. For more information, see Chapter 3, "Installing Oracle Traffic Director."

6.3 Post-Upgrade Steps

After upgrading Oracle Traffic Director from 11.1.1.6.0 or 11.1.1.7.0 to 11.1.1.9.0, you must rotate the logs for all instances, including the administration server.

After starting the administration server, run the following command:

```
$INSTANCE_HOME/admin-server/bin/rotate
```

Similarly, after starting all the Oracle Traffic Director instances, rotate the logs for each instance by running the following command:

```
$INSTANCE_HOME/net-config_name/bin/rotate
```