Oracle® Fusion Middleware
Upgrading Oracle Traffic Director

12*c* (12.2.1.3.0)
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ORACLE®

Oracle Fusion Middleware Upgrading Oracle Traffic Director, 12*c* (12.2.1.3.0)

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Preface

This document describes how to upgrade an existing Oracle Traffic Director environment to 12*c* (12.2.1.3.0).

- **Audience**
  Identify the target audience for your book and learn more about this document intended for.

- **Documentation Accessibility**
  Get more information about Oracle's commitment to accessibility and support through My Oracle Support.

- **Related Documents**
  Look for all the documents that you want to refer in Fusion Middleware from various documentation libraries.

- **Conventions**
  Learn about the conventions used in this document.

Audience

Identify the target audience for your book and learn more about this document intended for.

This document is intended for system administrators who are responsible for installing, maintaining, and upgrading Oracle Traffic Director. It is assumed that readers have knowledge of the following:

- Oracle Fusion Middleware system administration and configuration.

- Configuration parameters and expected behavior of the system being upgraded.

Documentation Accessibility

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For information about Oracle's commitment to accessibility, see Oracle Accessibility Program website at `http://www.oracle.com`.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support.

For details, see `My Oracle Support`. If you are hearing impaired, see `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs`.

Related Documents

Look for all the documents that you want to refer in Fusion Middleware from various documentation libraries.

For more information, see the following documents, which are available on the home page of *Fusion Middleware Documentation*:

- For Oracle Fusion Middleware getting started related information, see *Fusion Middleware Getting Started*.

- For Oracle Fusion Middleware installation related information, see *Fusion Middleware Installation Documentation*.

- For Oracle Fusion Middleware upgrade related information, see *Fusion Middleware Upgrade Documentation*.

- For Oracle Fusion Middleware administration-related information, see *Fusion Middleware Administration Documentation*.

- For Oracle Fusion Middleware release-related information, see *Fusion Middleware Release Notes Documentation*.

Conventions

Learn about the conventions used in this document.

This document uses the following text conventions:

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.

Part I
Getting Started

This part of Upgrading Oracle Traffic Director introduces Oracle Traffic Director and provides steps you must perform to prepare for upgrading to the latest version of 12*c* (12.2.1.3.0).

- Introduction to Upgrading Oracle Traffic Director to 12c (12.2.1.3.0)
  Before you begin an upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0), make sure that you understand the standard upgrade topologies and upgrade paths for your domain.

- Pre-Upgrade Requirements
  Before you begin to upgrade Oracle Traffic Director 12*c* (12.2.1.3.0), you must perform pre-upgrade tasks such as backing up, cloning your current environment, and verifying that your system meets certified requirements.

1

Introduction to Upgrading Oracle Traffic Director to 12*c* (12.2.1.3.0)

Before you begin an upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0), make sure that you understand the standard upgrade topologies and upgrade paths for your domain.

Following the introductory information and preparation steps, the procedures in this guide are divided into two sections. It is important that you refer to the correct set of procedures for your domain.

- Upgrades from 11*g*, described in Upgrading Oracle Traffic Director from 11*g* Release

- Upgrades from a previous 12*c* release, described in Upgrading Oracle Traffic Director from an Earlier or a Previous 12*c* Release

> **Note:**
>
> For general information about Fusion Middleware upgrade planning and other upgrade concepts and resources, see the following sections in *Planning an Upgrade of Oracle Fusion Middleware*.
>
> - Planning an Upgrade to Oracle Fusion Middleware 12*c*
>
> - Understanding In-Place Versus Out-of-Place Upgrades
>
> - Understanding the Basic 12*c* Upgrade Tasks

See the following documents for more information on Oracle Traffic Director:

- Fusion Middleware Release Notes for Oracle Traffic Director

- Fusion Middleware Administering Oracle Traffic Director

The following topics describe the concepts related to upgrading Oracle Traffic Director:

- About the Starting Points for Oracle Traffic Director Upgrade
  You can upgrade Oracle Traffic Director from 11*g* or from a previous 12*c* release.This guide provides information for upgrading from supported 11*g* and 12*c* releases.

- About Oracle Traffic Director Standard Topologies
  The steps to upgrade Oracle Traffic Director to 12*c* (12.2.1.3.0) depend on the current production topology (either 11*g* or a previous 12*c* release).

- About Upgrade Restrictions
  If you are using two or more Oracle Fusion Middleware products of the same or different versions in a single, supported, Oracle Fusion Middleware configuration, you must consider the interoperability and compatibility factors before planning the upgrade.

About the Starting Points for Oracle Traffic Director Upgrade

You can upgrade Oracle Traffic Director from 11*g* or from a previous 12*c* release.This guide provides information for upgrading from supported 11*g* and 12*c* releases.

You can upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0) from the following earlier versions:

- Oracle Traffic Director 11*g* Release 1 (11.1.1.7 and 11.1.1.9)

- Oracle Traffic Director 12*c* Release (12.2.1.0, 12.2.1.1, and 12.2.1.2)

The upgrade procedures in this guide explain how to upgrade an existing Oracle Traffic Director 11*g* or existing 12*c* release version to the latest Oracle Fusion Middleware 12*c* (12.2.1.3.0) release version. If your domain contains other components that also need to be upgraded, links to supporting documentation are provided.

> **❶ Important:**
>
> To run your upgrade process, you must have an existing WebLogic Server domain. You cannot upgrade from your existing 11*g* to an Oracle Traffic Director standalone domain, as upgrading Oracle Traffic Director from 11*g* to 12*c* standalone is not supported.

About Oracle Traffic Director Standard Topologies

The steps to upgrade Oracle Traffic Director to 12*c* (12.2.1.3.0) depend on the current production topology (either 11*g* or a previous 12*c* release).

As a result, it is difficult to provide exact upgrade instructions for every possible Oracle Traffic Director installation. Therefore, this upgrade documentation provides instructions for upgrading several typical Oracle Traffic Director topologies. These typical topologies are referred to as *standard upgrade topologies*.

Your actual topology may vary, but the topologies described here provide an example that can be used as a guide to upgrade other similar Oracle Traffic Director topologies.

> **✎ Note:**
>
> For your upgrade process and planning resources, see Preparing to Upgrade in *Planning an Upgrade of Oracle Fusion Middleware*.

> **💡 Tip:**
>
> For a list of Oracle Fusion Middleware documents available in HTML and PDF formats, see the documentation website: https://docs.oracle.com/en/middleware/.

About Upgrade Restrictions

If you are using two or more Oracle Fusion Middleware products of the same or different versions in a single, supported, Oracle Fusion Middleware configuration, you must consider the interoperability and compatibility factors before planning the upgrade.

Interoperability

In the context of Oracle Fusion Middleware products, interoperability is defined as the ability of two Oracle Fusion Middleware products or components of the same version (or release) to work together (interoperate) in a supported Oracle Fusion Middleware configuration. Specifically, interoperability applies when the first 4 digits of the release or version number are the same. For example, Oracle Fusion Middleware 12*c* (12.2.1.0) components are generally interoperable with other 12*c* (12.2.1.3.0) components.

Compatibility

In the context of Oracle Fusion Middleware products, compatibility is defined as the ability of two Oracle Fusion Middleware components of different versions (or releases) to interoperate.

For a list of products and features available in Oracle Fusion Middleware Release 12.2.1.3.0, see Products and Features Available in Oracle Fusion Middleware in *Understanding Interoperability and Compatibility*.

When performing the upgrade of your hardware or software, verify that your Oracle Fusion Middleware software is certified to support the new operating system or computer hardware. For more information, refer to the following resources:

- Oracle Fusion Middleware Supported System Configurations
- Oracle® Fusion Middleware System Requirements and Specifications

2

Pre-Upgrade Requirements

Before you begin to upgrade Oracle Traffic Director 12*c* (12.2.1.3.0), you must perform pre-upgrade tasks such as backing up, cloning your current environment, and verifying that your system meets certified requirements.

- Oracle Fusion Middleware Pre-Upgrade Checklist
  Perform the tasks in this checklist before you begin any upgrade to ensure that you have a successful upgrade and limited downtime.

- Creating a Complete Backup
  Before you start an upgrade, back up all system-critical files, including the databases that host your Oracle Fusion Middleware schemas.

- Verifying Certification and System Requirements
  Review the certification matrix and system requirements documents to verify that your environment meets the necessary requirements for installation.

- Updating Policy Files when Using Enhanced Encryption (AES 256)
  If you plan to use enhanced encryption, such as Advanced Encryption Standard (AES) 256, in your upgraded environment, Oracle recommends that you apply the latest required policy files to the JDK before you upgrade.

- Purging Unused Data
  Purging unused data and maintaining a purging methodology before an upgrade can optimize the upgrade process.

- Creating an Edition on the Server for Edition-Based Redefinition
  Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12*c*.

- Creating a Non-SYSDBA User to Run the Upgrade Assistant
  Oracle recommends that you create a non-SYSDBA user called `FMW` to run the Upgrade Assistant. This user has the privileges required to modify schemas, but does not have full administrator privileges.

- Identifying Existing Schemas Available for Upgrade
  This optional task enables you to review the list of available schemas before you begin the upgrade by querying the schema version registry. The registry contains schema information such as version number, component name and ID, date of creation and modification, and custom prefix.

Oracle Fusion Middleware Pre-Upgrade Checklist

Perform the tasks in this checklist before you begin any upgrade to ensure that you have a successful upgrade and limited downtime.

Upgrades are performed while the servers are down. This checklist identifies important, and often time-consuming, pre-upgrade tasks that you can perform before the upgrade to limit your downtime. The more preparation you can do before you begin the upgrade process, the less time you will spend offline.

> **✎ Note:**
>
> The pre-upgrade procedures you perform depend on the configuration of your existing system, the components you are upgrading, and the environment you want to create at the end of the upgrade and configuration process. Complete only those tasks that apply to your configurations or use cases.

Table 2-1   Tasks to Perform Before You Upgrade to Oracle Fusion Middleware 12*c*: Pre-Upgrade Checklist

Task	Description
Required Create a complete backup of your existing environment.	Before you begin your upgrade, back up all system-critical files and databases that contain any schemas that are to be upgraded. If the upgrade fails, then you must restore your pre-upgrade environment and begin the upgrade again. See Creating a Complete Backup. • Make sure that your backup includes the schema version registry table. See Backing Up the Schema Version Registry Table. • If you modified any of the startup scripts in your existing domain, then you need to copy them to a temporary directory location (outside of the existing domain) during the upgrade and redeploy them after the upgrade. See Maintaining Customized Domain and Environment Settings.
Required Verify that you are installing and upgrading your product on a supported hardware and software configuration.	Verify that your hardware and software configurations (including operating systems) are supported by the latest certifications and requirements documents. Also make sure to use a supported JDK version before you install the 12*c* product distributions. **⚠ Caution:** Do not attempt an upgrade if you are unable to use the latest supported operating system. As with all supported configurations, failure to comply with these requirements may cause your upgrade to fail. **❗ Important:** Before you begin your upgrade tasks: • Oracle recommends that you verify this information immediately, because the certification requirements are frequently updated. • Ensure that you have applied the latest patches to your components. See Verifying Certification and System Requirements.

Table 2-1   (Cont.) Tasks to Perform Before You Upgrade to Oracle Fusion Middleware 12*c*: Pre-Upgrade Checklist

Task	Description
Optional Update security policy files if you are using enhanced encryption (AES 256).	Some of the security algorithms used in Fusion Middleware 12*c* require additional policy files for the JDK. If you plan to use enhanced encryption such as AES 256, then Oracle recommends that you apply the latest required policy files to the JDK before you upgrade. See Updating Policy Files when Using Enhanced Encryption (AES 256).
Optional Purge any outdated or unused data before you upgrade.	To optimize performance, Oracle strongly recommends that you purge data and objects that will not be used in the upgraded environment. See Purging Unused Data.
Required for Oracle Database Users Only Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12*c* (12.2.1.3.0).	If you are using an Edition-Based Redefinition (EBR) database, you must create the edition before starting the upgrade. See Creating an Edition on the Server for Edition-Based Redefinition.
Optional Create a Non-SYSDBA user to run the Upgrade Assistant.	Oracle recommends that you create the FMW user to run Upgrade Assistant. User FMW can run the Upgrade Assistant without system administration privileges. See Creating a Non-SYSDBA User to Run the Upgrade Assistant.

Creating a Complete Backup

Before you start an upgrade, back up all system-critical files, including the databases that host your Oracle Fusion Middleware schemas.

The backup must include the `SYSTEM.SCHEMA_VERSION_REGISTRY$` table so that you can restore the contents back to its pre-upgrade state if the upgrade fails.

The Upgrade Assistant Prerequisites screen prompts you to acknowledge that backups have been performed before you proceed with the actual upgrade. However, note that the Upgrade Assistant does not verify that a backup has been created.

See:

- Backing Up Your Environment in *Administering Oracle Fusion Middleware*

- Upgrading and Preparing Your Oracle Databases for 12*c* in *Planning an Upgrade of Oracle Fusion Middleware*

- Backing Up the Schema Version Registry Table
  Your system backup must include the `SYSTEM.SCHEMA_VERSION_REGISTRY$` table or the `FMWREGISTRY.SCHEMA_VERSION_REGISTRY$` table.

- Maintaining Customized Domain and Environment Settings
  If you have modified any domain-generated, server startup scripts, or configuration files in your pre-upgrade environment, it is important to note that these changes are overwritten during the installation, domain upgrade, and reconfiguration

operations. Save your customized files to a shared library location so that you can continue to use them after the upgrade.

Backing Up the Schema Version Registry Table

Your system backup must include the `SYSTEM.SCHEMA_VERSION_REGISTRY$` table or the `FMWREGISTRY.SCHEMA_VERSION_REGISTRY$` table.

Each Fusion Middleware schema has a row in the `SYSTEM.SCHEMA_VERSION_REGISTRY$` table. If you run the Upgrade Assistant to update an existing schema and it does not succeed, you must restore the original schema before you can try again. Before you run the Upgrade Assistant, make sure you back up your existing database schemas and the schema version registry.

> **✎ Note:**
>
> Before you upgrade a schema using the Upgrade Assistant, you must perform a complete database backup. During the upgrade, you are required to acknowledge that backups have been performed.

Maintaining Customized Domain and Environment Settings

If you have modified any domain-generated, server startup scripts, or configuration files in your pre-upgrade environment, it is important to note that these changes are overwritten during the installation, domain upgrade, and reconfiguration operations. Save your customized files to a shared library location so that you can continue to use them after the upgrade.

Every domain installation includes dynamically-generated domain and server startup scripts, such as `setDomainEnv`. These files are replaced by newer versions during the installation and upgrade process. To maintain your custom domain-level environment settings, Oracle recommends that you create a separate file to store the custom domain information before you upgrade, instead of modifying the scripts directly.

For example, if you want to customize server startup parameters that apply to all servers in a domain, you can create a file called `setUserOverrides.cmd` (Windows) or `setUserOverrides.sh` (UNIX) and configure it to add custom libraries to the WebLogic Server classpath, specify additional command-line options for running the servers, or specify additional environment variables. When using the `pack` and `unpack` commands, any custom settings that you add to this file are preserved during the domain upgrade operation and are carried over to the remote servers.

The following example illustrates startup customizations in a `setUserOverrides` file:

```
# add custom libraries to the WebLogic Server system claspath
  if [ "${POST_CLASSPATH}" != "" ] ; then
    POST_CLASSPATH="${POST_CLASSPATH}${CLASSPATHSEP}${HOME}/foo/fooBar.jar"
    export POST_CLASSPATH
  else
    POST_CLASSPATH="${HOME}/foo/fooBar.jar"
    export POST_CLASSPATH
  fi
```

```
# specify additional java command-line options for servers
JAVA_OPTIONS="${JAVA_OPTIONS}  -Dcustom.property.key=custom.value"
```

If the `setUserOverrides` file exists during a server startup, the file is included in the startup sequence and any overrides contained within this file take effect. You must store the `setUserOverrides` file in the *EXISTING_DOMAIN_HOME*/bin directory.

> **✎ Note:**
>
> If you are unable to create the `setUserOverrides` script before an upgrade, you need to reapply your settings as described in Re-apply Customizations to Startup Scripts in *Upgrading Oracle WebLogic Server*.

Verifying Certification and System Requirements

Review the certification matrix and system requirements documents to verify that your environment meets the necessary requirements for installation.

> **✎ Note:**
>
> When checking the certification, system requirements, and interoperability information, be sure to check specifically for any 32-bit or 64-bit system requirements. It is important for you to download software specifically designed for the 32-bit or 64-bit environment, explicitly.

> **⚠ WARNING:**
>
> Make sure that your current environment has been patched to the latest patch set *before* you begin the upgrade. Certifications are based on fully patched environments, unless stated otherwise.

- Verify Your Environment Meets Certification Requirements
  Oracle has tested and verified the performance of your product on all certified systems and environments. Make sure that you are installing your product on a supported hardware or software configuration.

- Verify System Requirements and Specifications
  It is important to verify that the system requirements such as disk space, available memory, specific platform packages and patches, and other operating system-specific items are met.

- Verify That the Database Hosting Oracle Fusion Middleware is Supported
  You must have a supported Oracle database configured with the required schemas before you run Oracle Fusion Middleware 12*c*.

- Verify That the JDK Is Certified for This Release of Oracle Fusion Middleware
  At the time this document was published, the certified JDK for 12*c* (12.2.1.3.0) was 1.8.0_131.

Verify Your Environment Meets Certification Requirements

Oracle has tested and verified the performance of your product on all certified systems and environments. Make sure that you are installing your product on a supported hardware or software configuration.

Whenever new certifications occur, they are added to the appropriate certification document right away. New certifications can occur at any time, and for this reason the certification documents are kept outside of the documentation libraries and are available on Oracle Technology Network. See the Certification Matrix for 12*c* (12.2.1.3.0).

Verify System Requirements and Specifications

It is important to verify that the system requirements such as disk space, available memory, specific platform packages and patches, and other operating system-specific items are met.

Use the *Oracle Fusion Middleware System Requirements and Specifications* document to verify that the requirements of the certification are met. For example, if the Certification Matrix for 12*c* (12.2.1.3.0) indicates that your product is certified for installation on 64-Bit Oracle Linux 7, the System Requirements and Specifications document should be used to verify that your Oracle Linux 7 system has met the required minimum specifications such as disk space, available memory, specific platform packages and patches, and other operating system-specific items. This document is updated as needed and resides outside of the documentation libraries on the Oracle Technology Network (OTN).

> **✎ Note:**
>
> When you install the Oracle Fusion Middleware Release 12*c* software in preparation for upgrade, you should use the same user account that you used to install and configure the existing, pre-upgrade Oracle Fusion Middleware software. On UNIX operating systems, this ensures that the proper owner and group is applied to new Oracle Fusion Middleware 12*c* files and directories.

If you are running a 32–bit environment, you will need to perform an additional set of steps:

Verify That the Database Hosting Oracle Fusion Middleware is Supported

You must have a supported Oracle database configured with the required schemas before you run Oracle Fusion Middleware 12*c*.

Review the Fusion Middleware database requirements before starting the upgrade to ensure that the database hosting Oracle Fusion Middleware is supported and has sufficient space to perform an upgrade. See the Certification Matrix for 12*c* (12.2.1.3.0).

> **Note:**
>
> If your database version is no longer supported, you must upgrade to a supported version before starting an upgrade. See Upgrading and Preparing Your Oracle Databases for 12c in *Planning an Upgrade of Oracle Fusion Middleware*.

Verify That the JDK Is Certified for This Release of Oracle Fusion Middleware

At the time this document was published, the certified JDK for 12*c* (12.2.1.3.0) was 1.8.0_131.

Refer to the Oracle Fusion Middleware Supported System Configurations information on the Oracle Technology Network (OTN) to verify that the JDK you are using is supported.

If your JDK is not supported, or you do not have a JDK installed, you must download the required Java SE JDK, from the following website:

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

Make sure that the JDK is installed outside of the Oracle home. The Oracle Universal Installer validates that the designated Oracle home directory is empty, and the install does not progress until an empty directory is specified. If you install JDK under Oracle home, you may experience issues in future operations. Therefore, Oracle recommends that you use install the JDK in the following directory: `/home/oracle/products/jdk`.

For more information on the difference between generic and platform-specific installers, see Understanding the Difference Between Generic and Platform-Specific Distributions in the *Oracle Fusion Middleware Download, Installation, and Configuration Readme Files*.

Updating Policy Files when Using Enhanced Encryption (AES 256)

If you plan to use enhanced encryption, such as Advanced Encryption Standard (AES) 256, in your upgraded environment, Oracle recommends that you apply the latest required policy files to the JDK before you upgrade.

The Java platform defines a set of APIs spanning major security areas, including cryptography, public key infrastructure, authentication, secure communication, and access control. These APIs allow developers to easily integrate security mechanisms into their application code.

Some of the security algorithms used in Fusion Middleware 12*c* require additional policy files for the JDK. See Java Cryptography Architecture Oracle Providers Documentation.

> **Note:**
>
> If you attempt to use enhanced encryption without applying these policy files to the JDK before you begin the upgrade, the upgrade can fail and you must restore the entire pre-upgrade environment and start the upgrade from the beginning.

Purging Unused Data

Purging unused data and maintaining a purging methodology before an upgrade can optimize the upgrade process.

Some components have automated purge scripts. If you are using purge scripts, wait until the purge is complete before starting the upgrade process. The upgrade may fail if the purge scripts are running while using the Upgrade Assistant to upgrade your schemas.

Creating an Edition on the Server for Edition-Based Redefinition

Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12*c*.

Edition-based redefinition enables you to upgrade an application's database objects while the application is in use, thus minimizing or eliminating downtime. This is accomplished by changing (redefining) database objects in a private environment known as an edition. Only when all the changes have been made and tested, you make the new version of the application available to users.

> **Note:**
>
> This task must be completed by an Oracle Database User with DBA privileges.

Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12*c*. The new edition for 12*c* must be a child of your existing 11*g* or 12*c* edition.

To create an edition on the database server, sign in as an SYS user (or another Oracle user that has DBA privileges) and enter the following command:

```
create edition Oracle_FMW_12_2_1_1 as child of
Oracle_FMW_11_1_1_7_0;
```

where `Oracle_FMW_11_1_1_7_0` is an example of the edition name you specified in RCU 11.1.1.7 when the 11.1.1.7 schemas were created. Be sure to provide the actual name used when creating the edition.

The following message notifies you that the edition is created successfully:

```
Edition created.
```

During the upgrade, you are prompted to launch the Reconfiguration Wizard to reconfigure your existing domain. Before running the Reconfiguration Wizard, you must specify the database default edition. Use the following SQL command to manually set up the default edition name for the database, for example:

```
ALTER DATABASE DEFAULT EDITION = Oracle_FMW_12_2_1_1;
```

Creating a Non-SYSDBA User to Run the Upgrade Assistant

Oracle recommends that you create a non-SYSDBA user called `FMW` to run the Upgrade Assistant. This user has the privileges required to modify schemas, but does not have full administrator privileges.

SYSDBA is an administrative privilege that is required to perform high-level administrative operations such as creating, starting up, shutting down, backing up, or recovering the database. The SYSDBA system privilege is for a fully empowered database administrator. When you connect with the SYSDBA privilege, you connect with a default schema and not with the schema that is generally associated with your user name. For SYSDBA, this schema is SYS. Access to a default schema can be a very powerful privilege. For example, when you connect as user SYS, you have unlimited privileges on data dictionary tables. Therefore, Oracle recommends that you create a non-SYSDBA user to upgrade the schemas. The privileges listed below must be granted to user FMW before starting the Upgrade Assistant.

> **✎ Notes:**
>
> The non-SYSDBA user FMW is created solely for the purpose of running the Upgrade Assistant. After this step is complete, drop the FMW user. Note that privileges required for running the Upgrade Assistant may change from release to release.
> By default, the `v$xatrans$` table does not exist. You must run the `XAVIEW.SQL` script to create this table before creating the user. Moreover, the `grant select` privilege on the`v$xatrans$` table is required only by Oracle Identity Governance. If you do not require Oracle Identity Governance for configuration, or if you do not have the `v$xatrans$` table, then remove the following line from the script:
>
> ```
> grant select on v$xatrans$ to FMW with grant option;
> ```

In the example below, `password` is the password that you set for the FMW user. When granting privileges, make sure that you specify your actual password.

```
create user FMW identified by password;
grant dba to FMW;
grant execute on DBMS_LOB to FMW with grant option;
grant execute on DBMS_OUTPUT to FMW with grant option;
grant execute on DBMS_STATS to FMW with grant option;
grant execute on sys.dbms_aqadm to FMW with grant option;
grant execute on sys.dbms_aqin to FMW with grant option;
```

```
grant execute on sys.dbms_aqjms to FMW with grant option;
grant execute on sys.dbms_aq to FMW with grant option;
grant execute on utl_file to FMW with grant option;
grant execute on dbms_lock to FMW with grant option;
grant select on sys.V_$INSTANCE to FMW with grant option;
grant select on sys.GV_$INSTANCE to FMW with grant option;
grant select on sys.V_$SESSION to FMW with grant option;
grant select on sys.GV_$SESSION to FMW with grant option;
grant select on dba_scheduler_jobs to FMW with grant option;
grant select on dba_scheduler_job_run_details to FMW with grant option;
grant select on dba_scheduler_running_jobs to FMW with grant option;
grant select on dba_aq_agents to FMW with grant option;
grant execute on sys.DBMS_SHARED_POOL to FMW with grant option;
grant select on dba_2pc_pending to FMW with grant option;
grant select on dba_pending_transactions to FMW with grant option;
grant execute on DBMS_FLASHBACK to FMW with grant option;
grant execute on dbms_crypto to FMW with grant option;
grant execute on DBMS_REPUTIL to FMW with grant option;
grant execute on dbms_job to FMW with grant option;
grant select on pending_trans$ to FMW with grant option;
grant select on dba_scheduler_job_classes to FMW with grant option;
grant select on sys.DBA_TABLESPACE_USAGE_METRICS to FMW with grant option;
grant select on SYS.DBA_DATA_FILES to FMW with grant option;
grant select on SYS.V_$ASM_DISKGROUP to FMW with grant option;
grant select on v$xatrans$ to FMW with grant option;
grant execute on sys.dbms_system to FMW with grant option;
grant execute on DBMS_SCHEDULER to FMW with grant option;
grant select on dba_data_files to FMW with grant option;
grant execute on UTL_RAW to FMW with grant option;
grant execute on DBMS_XMLDOM to FMW with grant option;
grant execute on DBMS_APPLICATION_INFO to FMW with grant option;
grant execute on DBMS_UTILITY to FMW with grant option;
grant execute on DBMS_SESSION to FMW with grant option;
grant execute on DBMS_METADATA to FMW with grant option;
grant execute on DBMS_XMLGEN to FMW with grant option;
grant execute on DBMS_DATAPUMP to FMW with grant option;
grant execute on DBMS_MVIEW to FMW with grant option;
grant select on ALL_ENCRYPTED_COLUMNS to FMW with grant option;
grant select on dba_queue_subscribers to FMW with grant option;
grant execute on SYS.DBMS_ASSERT to FMW with grant option;
grant select on dba_subscr_registrations to FMW with grant option;
grant manage scheduler to FMW;
```

If you are upgrading Oracle Identity Manager (OIM) schema, ensure that the FMW user has the following additional privileges:

```
grant execute on SYS.DBMS_FLASHBACK to fmw with grant option;
grant execute on sys.DBMS_SHARED_POOL to fmw with grant option;
grant execute on SYS.DBMS_XMLGEN to FMW with grant option;
grant execute on SYS.DBMS_DB_VERSION to FMW with grant option;
grant execute on SYS.DBMS_SCHEDULER to FMW with grant option;
grant execute on SYS.DBMS_SQL to FMW with grant option;
grant execute on SYS.DBMS_UTILITY to FMW with grant option;
grant ctxapp to FMW with admin option;
```

```
grant execute on SYS.DBMS_FLASHBACK TO FMW with grant option;
grant create MATERIALIZED VIEW to FMW with admin option;
grant all on SCHEMA_VERSION_REGISTRY TO FMW with grant option;
grant create SYNONYM to FMW with admin option;
grant execute on CTXSYS.CTX_ADM to FMW with grant option;
grant execute on CTXSYS.CTX_CLS TO FMW with grant option;
grant execute on CTXSYS.CTX_DDL TO FMW with grant option;
grant execute on CTXSYS.CTX_DOC TO FMW with grant option;
grant execute on CTXSYS.CTX_OUTPUT TO FMW with grant option;
grant execute on CTXSYS.CTX_QUERY TO FMW with grant option;
grant execute on CTXSYS.CTX_REPORT TO FMW with grant option;
grant execute on CTXSYS.CTX_THES TO FMW with grant option;
grant execute on CTXSYS.CTX_ULEXER TO FMW with grant option;
grant create JOB to FMW with admin option;
```

Identifying Existing Schemas Available for Upgrade

This optional task enables you to review the list of available schemas before you begin the upgrade by querying the schema version registry. The registry contains schema information such as version number, component name and ID, date of creation and modification, and custom prefix.

You can let the Upgrade Assistant upgrade all of the schemas in the domain, or you can select individual schemas to upgrade. To help decide, follow these steps to view a list of all the schemas that are available for an upgrade:

1. If you are using an Oracle database, connect to the database by using an acount that has Oracle DBA privileges, and run the following from SQL*Plus:

   ```
   SET LINE 120
   COLUMN MRC_NAME FORMAT A14
   COLUMN COMP_ID FORMAT A20
   COLUMN VERSION FORMAT A12
   COLUMN STATUS FORMAT A9
   COLUMN UPGRADED FORMAT A8
   SELECT MRC_NAME, COMP_ID, OWNER, VERSION, STATUS, UPGRADED FROM
   SCHEMA_VERSION_REGISTRY ORDER BY MRC_NAME, COMP_ID;
   ```

2. Examine the report that is generated.

   If an upgrade is not needed for a schema, the `schema_version_registry` table retains the schema at its pre-upgrade version.

3. Note the schema prefix name that was used for your existing schemas. You will use the same prefix when you create new 12*c* schemas.

> **✎ Notes:**
>
> - If your existing schemas are not from a supported version, then you must upgrade them to a supported version before using the 12*c* (12.2.1.3.0) upgrade procedures. Refer to your pre-upgrade version documentation for more information.
>
> - Some components, such as Oracle Enterprise Data Quality, Oracle GoldenGate Monitor, and Oracle GoldenGate Veridata, support an upgrade from versions other than the standard Oracle Fusion Middleware supported versions.
>
> - If you used an OID-based policy store in 11*g*, make sure to create a new OPSS schema before you perform the upgrade. After the upgrade, the OPSS schema remains an LDAP-based store.
>
> - You can only upgrade schemas for products that are available for upgrade in Oracle Fusion Middleware release 12*c* (12.2.1.3.0). Do not attempt to upgrade a domain that includes components that are not yet available for upgrade to 12*c* (12.2.1.3.0).

Part II

Upgrading Oracle Traffic Director from 11*g* Release

This part of Upgrading Oracle Traffic Director provides information about upgrading Oracle Traffic Director from any of the 11*g* release version to the latest version of 12*c* (12.2.1.3.0).

- Upgrading Oracle Traffic Director from 11g Release
  You can upgrade Oracle Traffic Director from an earlier Oracle Fusion Middleware Release 11*g* version to the latest 12*c* (12.2.1.3.0) release version.

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3

Upgrading Oracle Traffic Director from 11*g* Release

You can upgrade Oracle Traffic Director from an earlier Oracle Fusion Middleware Release 11*g* version to the latest 12*c* (12.2.1.3.0) release version.

Oracle Fusion Middleware Upgrade Assistant supports an out-of-place upgrade to 12*c* (12.2.1.3.0) release for the following Oracle Traffic Director 11*g* releases:

- Oracle Traffic Director FMW 11*g* Release 1, Version: 11.1.1.6.0
- Oracle Traffic Director FMW 11*g* Release 1, Version: 11.1.1.7.0
- Oracle Traffic Director FMW 11*g* Release 1, Version: 11.1.1.9.0

The following topics describe how to upgrade Oracle Traffic Director to 12*c* (12.2.1.3.0) release:

- About Oracle Traffic Director Upgrade Process from 11g Release
  Review the roadmap for an overview of the upgrade process for Oracle Traffic Director from 11*g* release.

- Preparing to Upgrade Oracle Traffic Director 11g to the Latest 12c (12.2.1.3.0) Version
  This section describes the steps to prepare the upgrade for 11*g* versions of Oracle Traffic Director to the latest 12*c* (12.2.1.3.0) version.

- Performing Pre-Upgrade Tasks on Oracle Traffic Director 11g Environment to be Upgraded
  You must perform the tasks as in this section, before you begin any upgrade from Oracle Traffic Director 11*g* specific environment to the latest 12*c* (12.2.1.3.0). These tasks ensure you have a successful upgrade and a limited amount of downtime.

- Stopping Servers and Processes
  Before you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.

- Starting the Upgrade Assistant for Oracle Traffic Director 11g Specific Upgrade
  Run the Upgrade Assistant to migrate Oracle Traffic Director component configurations from 11*g* versions to 12*c* (12.2.1.3.0) domain.

- Upgrading Oracle Traffic Director 11g Component Configurations
  When you run the Upgrade Assistant to upgrade the 11*g* versions of component configurations, consider the following points based on the Oracle Traffic Director domain.

- Verifying Oracle Traffic Director Component Configurations for a Successful Upgrade
  After completing all the component configurations upgrade steps, verify whether it is successful by checking your upgraded configuration for Oracle Traffic Director domain.

- **Post-Upgrade Tasks**
  Follow the process to complete post-upgrade tasks for Oracle Traffic Director from 11*g* to the latest 12*c* (12.2.1.3.0) version.
- **Starting Servers and Processes After an Upgrade for Oracle Traffic Director**
  After a successful Oracle Traffic Director upgrade from a 11*g* to the latest 12*c* (12.2.1.3.0) version, start all the processes and servers, including the Administration Server and any Managed Servers and system components.

About Oracle Traffic Director Upgrade Process from 11*g* Release

Review the roadmap for an overview of the upgrade process for Oracle Traffic Director from 11*g* release.

The steps you take to upgrade your existing domain will vary depending on how your domain is configured and which components are being upgraded. Follow only those steps that are applicable to your deployment.

Table 3-1   Tasks for Upgrading Oracle Traffic Director from 11*g* Release

Task	Description
Required If you have not done so already, review the introductory topics in this guide and complete the required pre-upgrade tasks.	See: • Introduction to Upgrading Oracle Traffic Director to 12*c* (12.2.1.3.0) • Pre-Upgrade Requirements • Oracle Fusion Middleware Pre-Upgrade Checklist
Required Download and install the Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions into a new Oracle home.	See Installing the Product Distributions. 💡 **Tip:** See the following documents for more information on the installation and configuration of Oracle Fusion Middleware Infrastructure and Oracle Traffic Director: • *Installing and Configuring the Oracle Fusion Middleware Infrastructure* • *Installing Oracle Traffic Director*

Table 3-1   (Cont.) Tasks for Upgrading Oracle Traffic Director from 11g Release

Task	Description
Required Create an Oracle Traffic Director domain.	The 11g releases of Oracle Traffic Director do not install into a WebLogic Server domain. Since only an out of place upgrade is supported from these releases, you need to create a 12c (12.2.1.3.0) WebLogic Server domain extended with Oracle Traffic Director and dependent Java Required Files (JRF) templates before starting an upgrade.
Required Shut down the 11g and 12c environment (stop all the Administration and Managed Servers).	**⚠ WARNING:** Failure to shut down your servers during an upgrade may lead to data corruption. See Stopping Servers and Processes .
Required Start the Upgrade Assistant to upgrade the component configurations.	The Upgrade Assistant is used to update the component configurations. Start the Upgrade Assistant to migrate the component configurations from 11g to 12c (12.2.1.3.0) Oracle Traffic Director domain. For 11g to 12c upgrades, see Upgrading Oracle Traffic Director 11g Component Configurations.
Optional Setup the remote managed nodes.	If your Oracle Traffic Director 11g installation is part of a failover setup with remote nodes managed by the administration server, you must recreate the similar topology as specified in Configuring Failover.
Required Create Oracle Traffic Director instances.	The Upgrade Assistant does not create Oracle Traffic Director instances. These instances must be created post upgrade by targeting Oracle Traffic Director configurations to machines, using Fusion Middleware Control UI or Oracle WebLogic Scripting Tool (WLST). See Post-Upgrade Tasks.
Required Start all process and servers. Restart the servers and Oracle Traffic Director 12c (12.2.1.3.0) instance.	Once the upgrade process is complete, start all processes and servers including the Admin Server, Managed Servers and Oracle Traffic Director 12c (12.2.1.3.0) instances. See Starting Servers and Processes.

Table 3-1   (Cont.) Tasks for Upgrading Oracle Traffic Director from 11*g* Release

Task	Description
Required Complete and verify the upgrade.	Perform the required post-upgrade configuration tasks (if needed), including starting the new Administration and Managed Servers and node manager to ensure there are no issues. ❗ **Important:** Oracle recommends that you ensure all of the upgraded components are working as expected before deleting your backups. See Verifying The Component Configurations.

Preparing to Upgrade Oracle Traffic Director 11*g* to the Latest 12*c* (12.2.1.3.0) Version

This section describes the steps to prepare the upgrade for 11*g* versions of Oracle Traffic Director to the latest 12*c* (12.2.1.3.0) version.

Before you upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0), you must complete the following steps:

1. Ensure that **12*c* (12.2.1.3.0) binaries** are installed in a **new `FMW_HOME`**.

    > 💡 **Tip:**
    >
    > See Installing Oracle Traffic Director in *Installing Oracle Traffic Director*

    A valid WebLogic Server domain extended with Oracle Traffic Director and dependant JRF templates must also be created at the target location.

    > 💡 **Tip:**
    >
    > See Creating a Managed Domain in *Administering Oracle Traffic Director*.

2. Shutdown the target 12*c* (12.2.1.3.0) environment, before you run the Upgrade Assistant to upgrade your schemas and configurations.

    You must shut down all of the pre-upgrade processes and servers, including the Administration Server and any Managed Servers and Node Manager.

> **✎ Note:**
>
> For more information on starting, stopping, and restarting your Oracle Traffic Director instances in:
>
> • 11*g* environment, see Stopping Oracle Traffic Director Instances in 11*g* Environment
>
> • 12*c* (12.2.1.3.0) environment, see Managing Oracle Traffic Director Instances in 12*c* Environment.

> **✎ Note:**
>
> The following are the restrictions for Oracle Traffic Director upgrade activities:
>
> • Upgrading across different platforms is not supported. For example, you cannot upgrade Oracle Traffic Director from a Linux to Solaris environment.
>
> • Upgrading from an Oracle Traffic Director 11*g* to an Oracle Traffic Director 12*c* (12.2.1.3.0) standalone domain is not supported.

For more information on installing 12*c* (12.2.1.3.0) binaries in a new `FMW_HOME`, stopping Administration and Managed Servers, and Node Manager, see the following topic with more details on the procedure, processes, and servers.

• Installing the Product Distributions
  Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions on the target system and install them using Oracle Universal Installer.

Installing the Product Distributions

Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions on the target system and install them using Oracle Universal Installer.

> **✎ Note:**
>
> When Infrastructure is required for the upgrade, you must install the Oracle Fusion Middleware distribution first before you install other Fusion Middleware products.

The following install instructions are for the standard Oracle Fusion Middleware installation topology. Refer to the Oracle Traffic Director Installation Guide for more information about installing the other supported topologies.

To install 12*c* (12.2.1.3.0) distributions:

1. Sign in to the target system.

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2. Download the following from Oracle Technology Network or Oracle Software Delivery Cloud to your target system:

   - Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.3.0_infrastructure_generic.jar`)

   - Oracle Traffic Director (UNIX: `distribution_name_12.2.1.3.0_otd_linux64.bin`), (Windows: `distribution_name_12.2.1.3.0_otd_win64.exe`)

3. Change to the directory where you downloaded the 12*c* (12.2.1.3.0) product distribution.

4. Start the installation program for Oracle Fusion Middleware Infrastructure:

   - (UNIX) *JDK_HOME*`/bin/java -jar fmw_12.2.1.3.0_infrastructure_generic.jar`

   - (Windows) *JDK_HOME*`\bin\java -jar fmw_12.2.1.3.0_infrastructure_generic.jar`

5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an 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, and click **Next**.

   > **Note:**
   >
   > The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.

7. On the Auto Updates screen, select an option:

   - **Skip Auto Updates**: If you do not want your system to check for software updates at this time.

   - **Select patches from directory**: To navigate to a local directory if you downloaded patch files.

   - **Search My Oracle Support for Updates**: To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

   Click **Next**.

8. On the Installation Location screen, specify the location for the Oracle home directory and click **Next**.

   For more information about Oracle Fusion Middleware directory structure, see Understanding Directories for Installation and Configuration in *Oracle Fusion Middleware Planning an Installation of Oracle Fusion Middleware*.

9. On the Installation Type screen, select the following:

   a. For Infrastructure, select **Fusion Middleware Infrastructure**

b. For Oracle Traffic Director, select Oracle Traffic Director

Select the type of installation and consequently, the products and feature sets you want to install.

- 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.

- Select **Collocated OTD** (Managed through WebLogic server) if you are installing Oracle Traffic Director in a WebLogic Server domain on the administration server node.

> **❗ Important:**
>
> You can only upgrade earlier versions of Oracle Traffic Director 12*c* in the standalone OTD. Upgrading Oracle Traffic Director from 11*g* to 12*c* standalone is not supported.

Click **Next**.
See Installing Oracle Traffic Director for more information.

10. The Prerequisite Checks screen analyzes the host computer to ensure that the specific operating system prerequisites have been met.

To view the list of tasks that are verified, select **View Successful Tasks**. To view log details, select **View Log**. If any prerequisite check fails, then an error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or the warning message and continue with the installation, click **Skip** (not recommended).

11. On the Installation Summary screen, verify the installation options that you selected.

If you want to save these options to a response file, click **Save Response File** and enter the response file location and name. The response file collects and stores all the information that you have entered, and enables you to perform a silent installation (from the command line) at a later time.
Click **Install** to begin the installation.

12. On the Installation Progress screen, when the progress bar displays 100%, click **Finish** to dismiss the installer, or click **Next** to see a summary.

13. The Installation Complete screen displays the Installation Location and the Feature Sets that are installed. Review this information and click **Finish** to close the installer.

14. After you have installed Oracle Fusion Middleware Infrastructure, enter the following command to start the installer for your product distribution and repeat the steps above to navigate through the installer screens:

(UNIX) `./distribution_name_12.2.1.3.0_otd_linux64.bin`

(Windows) `distribution_name_12.2.1.3.0_otd_win64.exe`

Performing Pre-Upgrade Tasks on Oracle Traffic Director 11*g* Environment to be Upgraded

You must perform the tasks as in this section, before you begin any upgrade from Oracle Traffic Director 11*g* specific environment to the latest 12*c* (12.2.1.3.0). These tasks ensure you have a successful upgrade and a limited amount of downtime.

Before you upgrade to the latest version of Oracle Traffic Director 12*c* (12.2.1.3.0), you must follow these steps:

1. Shutdown your running 11*g* environment.

    > **Note:**
    >
    > To stop Oracle Traffic Director instances in 11*g* environment, see Stopping Oracle Traffic Director Instances in 11*g* Environment.

2. Verify and ensure Oracle Traffic Director 11*g* `INSTANCE_HOME` has read permissions for the user, running the Upgrade Assistant to access the configurations within 11*g* Administration Server config-store.

3. If Oracle Traffic Director 11*g* and Oracle Traffic Director 12*c* installations are on different hosts or machines (for example: 11*g* on OEL5 and 12*c* on OEL6), then the user must perform one of the following:

    a. In the Upgrade Assistant, once you select 11*g* source as the source version for the upgrade, then you must specify the remote directory path for Oracle Traffic Director 11*g* instances.

        > **Tip:**
        >
        > See Upgrading the Component Configurations in *Installing Oracle Traffic Director*.

    b. Remotely copy `ORACLE_HOME` and `INSTANCE_HOME` directories from 11*g* host to 12*c* preserving the same path as it was on 11*g* host.

        For example, on 12*c* host:

        ```
        # scp -r <11g host>:/otd/oracle_home /otd/oracle_home
        # scp -r <11g host>:/otd/oracle_home /otd/oracle_home
        ```

    c. Mount 11*g* `ORACLE_HOME` and `INSTANCE_HOME` paths on 12*c* host preserving the same path as it was on 11*g* host.

        For example, on 12*c* host:

        ```
        # mount <11g host>:/otd/oracle_home on /otd/oracle_home
        # mount <11g host>:/otd/instance_home on /otd/instance_home
        ```

4. If you have configured `webgate` plug-in on Oracle Traffic Director instance, then you must ensure that the related changes are pulled into the corresponding Oracle Traffic Director configuration before you run the upgrade.

> ### 💡 Tip:
>
> See pull-config in *Traffic Director Command-Line Reference 11g Release 1 (11.1.1.7)*.

Stopping Servers and Processes

Before you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.

An Oracle Fusion Middleware environment can consist of an Oracle WebLogic Server domain, an Administration Server, multiple managed servers, Java components, system components such as Identity Management components, and a database used as a repository for metadata. The components may be dependent on each other, so they must be stopped in the correct order.

> ### ✏️ Note:
>
> The procedures in this section describe how to stop the existing, pre-upgrade servers and processes using the WLST command-line utility or a script. You can also use the Oracle Fusion Middleware Control and the Oracle WebLogic Server Administration Console. See Starting and Stopping Administration and Managed Servers and Node Manager.

To stop your pre-upgrade Fusion Middleware environment, navigate to the pre-upgrade domain and follow the steps below:

Step 1: Stop System Components

To stop system components, such as Oracle HTTP Server, use the `stopComponent` script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopComponent.sh *component_name*
- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopComponent.cmd *component_name*

You can stop system components in any order.

Step 2: Stop the Managed Servers

To stop a WebLogic Server Managed Server, use the `stopManagedWebLogic` script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopManagedWebLogic.sh *managed_server_name admin_url*
- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopManagedWebLogic.cmd *managed_server_name admin_url*

When prompted, enter your user name and password.

Step 3: Stop Oracle Identity Management Components

Stop any Oracle Identity Management components, such as Oracle Internet Directory:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopComponent.sh *component_name*

- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopComponent.cmd *component_name*

Step 4: Stop the Administration Server

When you stop the Administration Server, you also stop the processes running in the Administration Server, including the WebLogic Server Administration Console and Fusion Middleware Control.

To stop the Administration Server, use the stopWebLogic script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopWebLogic.sh

- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopWebLogic.cmd

When prompted, enter your user name, password, and the URL of the Administration Server.

Step 5: Stop Node Manager

To stop Node Manager, close the command shell in which it is running.

Alternatively, after setting the nodemanager.properties attribute QuitEnabled to true (the default is false), you can use WLST to connect to Node Manager and shut it down. See stopNodeManager in *WLST Command Reference for WebLogic Server*.

- Stopping Oracle Traffic Director Instances in 11g Environment
  Learn more about how you can stop one or more Oracle Traffic Director 11*g* instances in multiple modes.

Stopping Oracle Traffic Director Instances in 11*g* Environment

Learn more about how you can stop one or more Oracle Traffic Director 11*g* instances in multiple modes.

To stop your Oracle Traffic Director instances in 11*g* environment, you can either use the administration console or the CLI.

For more information on how you can stop one or more Oracle Traffic Director 11*g* instances in multiple modes, see the following topics:

- Stopping Oracle Traffic Director 11g Instances Using the Administration Console
  Learn more about stopping one or more Oracle Traffic Director 11*g* instances in the graphical mode.

- Stopping Oracle Traffic Director 11g Instances Using the CLI Mode
  Learn more about stopping one or more Oracle Traffic Director 11*g* instances in the command line mode.

Stopping Oracle Traffic Director 11*g* Instances Using the Administration Console

Learn more about stopping one or more Oracle Traffic Director 11*g* instances in the graphical mode.

To stop Oracle Traffic Director 11*g* instances by using the Administration Console, you must perform the following:

1. Sign in to the Administration Console for Oracle Traffic Director.

   > 💡 **Tip:**
   >
   > For more details and procedures on the following topics, see *Oracle Traffic Director 11.1.1.9 Administrator's Guide*:
   >
   > • To access the Administration Console, see Accessing the Administration Console.
   >
   > • To stop Oracle Traffic Director 11*g* Administration Server, using the Administration Console, see Stopping and Restarting the Administration Server.

2. Click **Configurations** button at the upper left corner of the page.

   A list of the available configurations is displayed.

3. Select the configuration for which you want to start, stop, or restart instances.

4. In the navigation pane, select **Instances**.

5. Click **Start/Restart** or **Stop** as required, for the instance that you want to start, restart, or stop.

   > ✏️ **Note:**
   >
   > If you want to:
   >
   > • Start or restart all instances of the selected configuration, Click **Start/Restart Instances** in the Common Tasks pane.
   >
   > • Stop all instances of the configuration, Click **Stop Instances**.

A message is displayed in the Console Messages pane confirming that the instances were stopped.

Stopping Oracle Traffic Director 11*g* Instances Using the CLI Mode

Learn more about stopping one or more Oracle Traffic Director 11*g* instances in the command line mode.

To stop one or more Oracle Traffic Director 11*g* instances, run the following command:

Table 3-2   Configuration Command for Oracle Traffic Director 11*g* Instances

Action	Command
To Stop	`stop-instance`

> 💡 **Tip:**
>
> For more details and procedures on the above topics, see *Oracle Traffic Director 11.1.1.9 Administrator's Guide*:
>
> - To invoke the CLI shell, see Accessing the Command-Line Interface.
> - To stop Oracle Traffic Director 11*g* Administration Server, using the Administration Console or CLI, see Stopping and Restarting the Administration Server.

The following example is for your reference and requirement.

The command `stop` the instances of the configuration `soa` on the nodes `apps1.example.com` and `apps2.example.com` is as the following:

```
tadm> stop-instance --config=soa apps1.example.com apps2.example.com
```

> ✏️ **Note:**
>
> Alternatively, you can use the following stop command from within the instance directory to stop the instances.
>
> ```
> > $INSTANCE_HOME/net-config_name/bin/stopserv
> ```

Starting the Upgrade Assistant for Oracle Traffic Director 11*g* Specific Upgrade

Run the Upgrade Assistant to migrate Oracle Traffic Director component configurations from 11*g* versions to 12*c* (12.2.1.3.0) domain.

Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade one domain at a time.

> **Note:**
>
> Before you start the Upgrade Assistant, make sure that the JVM character encoding is set to UTF-8 for the platform on which the Upgrade Assistant is running.
>
> If the character encoding is not set to UTF-8, then you will not be able to download files containing Unicode characters in their names. This can cause the upgrade to fail.

To start the Upgrade Assistant

1. Go to the `oracle_common/upgrade/bin` directory:

   - (UNIX) *NEW_ORACLE_HOME*`/oracle_common/upgrade/bin`

   - (Windows) *NEW_ORACLE_HOME*`\oracle_common\upgrade\bin`

2. Start the Upgrade Assistant:

   - (UNIX) `./ua`

   - (Windows) `ua.bat`

For information about other parameters that you can specify on the command line, see the following topic.

- Upgrade Assistant Parameters Specific to Oracle Traffic Director
  You can start the Upgrade Assistant, using the specific command line parameters for Oracle Traffic Director.

Upgrade Assistant Parameters Specific to Oracle Traffic Director

You can start the Upgrade Assistant, using the specific command line parameters for Oracle Traffic Director.

When you start the Upgrade Assistant from the command line, you can specify additional parameters. The Table 3-3 shows the specific Command-Line Parameters for Oracle Traffic Director upgrade in Upgrade Assistant.

Table 3-3   Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
`-readiness`	Not applicable	Performs the upgrade readiness check without performing an actual upgrade.
		This option is not applicable for upgrade from OTD 11*g* as OTD does not install into a WebLogic domain in 11*g*.

Table 3-3   (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
`-threads`	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
`-response`	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in *silent mode* (without displaying Upgrade Assistant screens).
`-examine`	Optional	Performs the examine phase but does not perform an actual upgrade. Do not specify this parameter if you have specified the `-readiness` parameter.
`-logLevel` *attribute*	Optional	Sets the logging level, specifying one of the following attributes: `TRACE` `NOTIFICATION` `WARNING` `ERROR` `INCIDENT_ERROR` The default logging level is `NOTIFICATION`. Consider setting the `-logLevel TRACE` attribute to so that more information is logged. This is useful when troubleshooting a failed upgrade. The Upgrade Assistant's log files can become very large if `-logLevel TRACE` is used.

Table 3-3   (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
`-logDir` *location*	Optional	Sets the default location of upgrade log files and temporary files. You must specify an existing, writable directory where the Upgrade Assistant will create log files and temporary files.
		The default locations are:
		(UNIX)
		NEW_ORACLE_HOME`/` `oracle_common/upgrade/` `logs` *NEW_ORACLE_HOME*`/` `oracle_common/upgrade/` `temp`
		(Windows)
		NEW_ORACLE_HOME `\oracle_common\upgrade` `\logs` *NEW_ORACLE_HOME* `\oracle_common\upgrade` `\temp`
`-help`	Optional	Displays all of the command-line options.

Upgrading Oracle Traffic Director 11*g* Component Configurations

When you run the Upgrade Assistant to upgrade the 11*g* versions of component configurations, consider the following points based on the Oracle Traffic Director domain.

The Upgrade Assistant must be run to migrate Oracle Traffic Director component configurations from 11*g* to the 12*c* (12.2.1.3.0) collocated domain.

You can run the Upgrade Assistant in the following modes:

- Upgrading Oracle Traffic Director 11g in Graphical Mode
  To upgrade Oracle Traffic Director using the graphical mode, run the upgrade wizard.

- Upgrading Oracle Traffic Director 11g in Silent Mode
  You can upgrade your collocated Oracle Traffic Director in silent mode (command line mode).

Upgrading Oracle Traffic Director 11*g* in Graphical Mode

To upgrade Oracle Traffic Director using the graphical mode, run the upgrade wizard.

Launch the upgrade assistance and follow the steps below:

1. The Welcome screen displays the pre-upgrade tasks that need to be performed.

    Ensure you perform these tasks and Click **Next** to continue.

2. In the Upgrade Type screen, select **All Configurations Used By a Domain** and provide the 12*c* (12.2.1.3.0) domain path in the **Domain Directory** field.

    Click **Next** to continue.

3. In the Component List screen, the list of components that needs to be upgraded are displayed.

    Click **Next** to continue.

4. In the Prerequisites screen, ensure you have met all the prerequisites as mentioned in the screen.

    Select all the check boxes, then Click **Next** to continue.

5. In Oracle Traffic Director Upgrade Path screen, select the source version for the upgrade as **11*g* source**.

    Select the check box **Remote directory**, if the directory containing the 11*g* instances resides in a different node.

    Specify the directory containing **Oracle Traffic Director 11*g*** instances.

    Figure 3-1   Oracle Traffic Director 11*g* Upgrade Path in the Upgrade Assistant

    Then Click **Next** to continue.

6. **Optional:** Oracle Traffic Director 11*g* **SSL Token Pin** screen is displayed only if any of Oracle Traffic Director configurations are **SSL** enabled and if the **SSL tokens** are protected with a **token pin**.

    Enter the pin for the SSL token in the **SSL Token Pin** field and a **Oracle Wallet Password** to be set for Oracle Traffic Director configuration in 12*c*.

Figure 3-2   Oracle Traffic Director 11*g* **SSL Token Pin in the Upgrade Assistant**
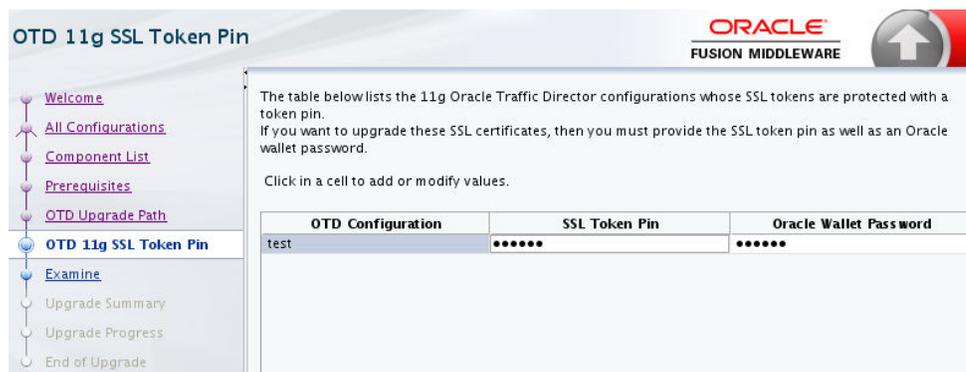
Then Click **Next** to continue.

7. The Examine screen shows the status of the examination process, where it is checked if the components are ready to be upgraded.

   Once the process is complete, then Click **Next** to continue.

8. The Upgrade Summary screen is displayed.

   Click the **Save Response File...** button to create a response file.

   A response file is a text file the Upgrade Assistant can write out that saves all of your inputs to the various screens.

   This file can be used later as an input for Command Line upgrade bypassing the GUI.

   Then Click **Upgrade** to continue.

9. The **Upgrade Progress** screen displays the upgrade progress.

   Once the upgrade process is done, then Click **Next** to continue.

10. In the **Upgrade Success** screen, check the log file in case of any errors during the upgrade.

    Then Click **Close** to complete the upgrade.

Upgrading Oracle Traffic Director 11*g* in Silent Mode

You can upgrade your collocated Oracle Traffic Director in silent mode (command line mode).

To upgrade Oracle Traffic Director using silent mode, run the Upgrade Assistant command with the response file generated using the upgrade wizard.

Syntax

After a successful upgrade, a success message is displayed on the console. Log file is available under the following path:

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/logs
```

Command Line for Silent Upgrade (on UNIX)

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/bin/ua -response <response-
file> -logLevel <Log-verbosity>
```

> **Note:**
>
> The `SSL_TOKEN*` fields are applicable only if the 11*g* instance has SSL
> enabled configuration.

Sample Response File

The following is a sample response file as an example for your requirement.

```
# This is a response file for the Fusion Middleware Upgrade Assistant.
# Individual component upgrades are performed in the order they are
described here.
# Each upgrade is introduced by a section header containing the name of
the component and name of the upgrade plugin.
# The form of the section header is
# [ComponentName.PluginName]

# These names can be found in the Upgrade Descriptor files for the
components.
# Individual input lines consist of a name, an equal sign, and a value.
# The name is in two parts separated by a period. The first part is the
"name" attribute from the Descriptor File XML tag by which the plugin
refers to the value.
# The second part of the name identifies a field within that value. Some
input types have only one field, while other types can have half a dozen.
# Do not intermix input lines that apply to different XML tags.
[GENERAL]

# This is the file format version number.  Do not change the next line.
fileFormatVersion = 3

# The next section contains information for accessing a WebLogic Server
domain.
[UAWLSINTERNAL.UAWLS]

# The following number uniquely identifies this instance of an upgrade
plugin.
# Do not change it.
pluginInstance = 1

# Specifies the WebLogic Server domain directory:
UASVR.path = /export/orahome/domains/otd_domain

# The next section contains the information for performing a mid-tier
upgrade on Oracle JRF, as described in the Upgrade Descriptor file located
at
```

```
#    /export/orahome/oracle_common/plugins/upgrade/jrfua.xml
# Do not change the next line.
[JRF.JRF_CONFIG_PLUGIN]

# The following number uniquely identifies this instance of an upgrade
plugin.  Do not change it.
pluginInstance = 1

# The next section contains the information for performing a mid-tier
upgrade on System Components Infrastructure, as described in the Upgrade
Descriptor file located at
#    /export/orahome/oracle_common/plugins/upgrade/syscomp.xml
# Do not change the next line.
[CAM.SYSCOMP]

# The next section contains the information for performing a mid-tier
upgrade on Oracle Traffic Director, as described in the Upgrade Descriptor
file located at
#    /export/orahome/otd/plugins/upgrade/otd-upgrade.xml
# Do not change the next line.
[OTD.CONFIG_UPGRADE]

# The following number uniquely identifies this instance of an upgrade
plugin.  Do not change it.
pluginInstance = 12

# Specifies a choice from a collection of values,
# "Select the source version for the upgrade"
UPGRADE_CHOICE.choose = 11-12

# Specifies the choice for a yes/no option:
#  "Remote directory"
REMOTE_INSTANCE_HOME.option = no

# Specifies a file or directory:
#  "Enter the directory that contains Oracle Traffic Director 11g
instances (including admin-server)."
OTD_11_INSTANCE_HOME.path = /export/otd_11g_home/instances

# The SSL_TOKEN* fields below are applicable only if the 11g instance has
SSL enabled config.
# The table below lists the 11g Oracle Traffic Director configurations
whose SSL tokens are protected with a token pin. If you want to upgrade
these SSL certificates, then you must provide the SSL token pin as well as
an Oracle wallet password
# The below lines describe a Table input:
#      Each non-comment line represents a cell in the table in the form of
#      TABLE-NAME.COLUMN-NAME.ROW-NUMBER.DATATYPE-KEYWORD.
#      Simple strings have a "string" keyword suffix.
#      Boolean options have an "option" keyword suffix and yes/no values.
#      Encrypted passwords have an "encryptedPassword" keyword suffix.
#      To specify a different password in cleartext, use the
"cleartextPassword" keyword instead.
SSL_TOKEN_TABLE.CONFIG_NAME.0.string = test
SSL_TOKEN_TABLE.SSL_TOKEN_PIN.0.encryptedPassword =
```

050C0F4F5030C0A319B1DE00BBC3AD79C7
SSL_TOKEN_TABLE.WALLET_PSWD.0.encryptedPassword =
057033B2E49C479BDC52E21ABA8FF28263DF8EB1DCCA2C93C5

Verifying Oracle Traffic Director Component Configurations for a Successful Upgrade

After completing all the component configurations upgrade steps, verify whether it is successful by checking your upgraded configuration for Oracle Traffic Director domain.

This section describes the steps to verify the component configurations upgrade for Oracle Traffic Director domain.

For Oracle Traffic Director 11*g* Configuration

- The version in `server.xml` of `config-store` is modified to 12*c* (12.2.1.3.0).

- The value of `ORACLE_HOME` in the scripts and in the `obj.conf` file are updated as the new `ORACLE_HOME` for local Oracle Traffic Director instances.

Post-Upgrade Tasks

Follow the process to complete post-upgrade tasks for Oracle Traffic Director from 11*g* to the latest 12*c* (12.2.1.3.0) version.

Review the following list of post-upgrade tasks to be performed after using the Upgrade Assistant to upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0):

- Oracle Traffic Director system component instances must be created post-upgrade, by targeting Oracle Traffic Director system component configurations to the machines using Fusion Middleware Control or Oracle WebLogic Scripting Tool (WLST).

  > **Tip:**
  >
  > See Managing Instances in *Administering Oracle Traffic Director*.

- Setting up failover is a deployment task.

  These steps are best handled outside the upgrade as post-upgrade steps.

  > **Tip:**
  >
  > For more information on deployment topology and configuring failover groups, see Configuring Oracle Traffic Director for High Availability in *Administering Oracle Traffic Director*.

- Any references in Oracle Traffic Director configuration files to the paths outside of `INSTANCE_HOME` and `ORACLE_HOME` may not be accessible post upgrade.

  This must be configured manually.

Starting Servers and Processes After an Upgrade for Oracle Traffic Director

After a successful Oracle Traffic Director upgrade from a 11*g* to the latest 12*c* (12.2.1.3.0) version, start all the processes and servers, including the Administration Server and any Managed Servers and system components.

The components may be dependent on each other and hence, they must be started in the correct order.

To start Oracle Traffic Director instances in 12*c* environment, see Starting Servers and Processes.

For more information on starting Administration and Managed Servers and Node Manager, see the following topic with more details on the procedure, processes, and servers.

- Starting Servers and Processes
  After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.

Starting Servers and Processes

After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.

The components may be dependent on each other so they must be started in the correct order.

> **Note:**
>
> The procedures in this section describe how to start servers and process using the WLST command line or a script. You can also use the Oracle Fusion Middleware Control and the Oracle WebLogic Server Administration Console. See Starting and Stopping Administration and Managed Servers and Node Manager in *Administering Oracle Fusion Middleware.*

To start your Fusion Middleware environment, follow the steps below:

Step 1: Start the Administration Server

When you start the Administration Server, you also start the processes running in the Administration Server, including the WebLogic Server Administration Console and Fusion Middleware Control.

To start the Administration Server, use the `startWebLogic` script:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startWebLogic.sh
- (Windows) *NEW_DOMAIN_HOME*\bin\startWebLogic.cmd

When prompted, enter your user name, password, and the URL of the Administration Server.

Step 2: Start Node Manager

To start Node Manager, use the `startNodeManager` script:

- (UNIX) *NEW_DOMAIN_HOME*`/bin/startNodeManager.sh`
- (Windows) *NEW_DOMAIN_HOME*`\bin\startNodeManager.cmd`

Step 3: Start Oracle Identity Management Components

Start any Oracle Identity Management components, such as Oracle Internet Directory, that form part of your environment:

- (UNIX) *NEW_DOMAIN_HOME*`/bin/startComponent.sh` *component_name*
- (Windows) *NEW_DOMAIN_HOME*`\bin\startComponent.cmd` *component_name*

Step 4: Start the Managed Servers

To start a WebLogic Server Managed Server, use the `startManagedWebLogic` script:

- (UNIX) *NEW_DOMAIN_HOME*`/bin/startManagedWebLogic.sh` *managed_server_name admin_url*
- (Windows) *NEW_DOMAIN_HOME*`\bin\startManagedWebLogic.cmd` *managed_server_name admin_url*

When prompted, enter your user name and password.

> **✎ Note:**
>
> The startup of a Managed Server will typically start the applications that are deployed to it. Therefore, it should not be necessary to manually start applications after the Managed Server startup.

Step 5: Start System Components

To start system components, such as Oracle HTTP Server, use the `startComponent` script:

- (UNIX) *NEW_DOMAIN_HOME*`/bin/startComponent.sh` *component_name*
- (Windows) *NEW_DOMAIN_HOME*`\bin\startComponent.cmd` *component_name*

You can start system components in any order.

Part III

Upgrading Oracle Traffic Director from an Earlier or a Previous 12*c* Release

This part of Upgrading Oracle Traffic Director introduces Oracle Traffic Director and provides steps you must perform to prepare for upgrading to the latest version of 12*c* (12.2.1.3.0).

- Upgrading Oracle Traffic Director from an Earlier or a Previous 12c Release
  You can upgrade Oracle Traffic Director from an earlier 12*c* release version to the latest 12*c* (12.2.1.3.0) release version.

4

Upgrading Oracle Traffic Director from an Earlier or a Previous 12*c* Release

You can upgrade Oracle Traffic Director from an earlier 12*c* release version to the latest 12*c* (12.2.1.3.0) release version.

Oracle Fusion Middleware Upgrade Assistant supports an in-place upgrade to 12*c* (12.2.1.3.0) for the following Oracle Traffic Director release versions:

- Oracle Traffic Director FMW 12*c* Release 2, Version: 12.2.1.0.0
- Oracle Traffic Director FMW 12*c* Release 2, Version: 12.2.1.1.0
- Oracle Traffic Director FMW 12*c* Release 2, Version: 12.2.1.2.0

The following topics describe how to upgrade Oracle Traffic Director to 12*c* (12.2.1.3.0):

- About Oracle Traffic Director Upgrade Process from an Earlier or a Previous 12c Release
  Review the roadmap for an overview of the upgrade process for Oracle Traffic Director from a previous 12*c* release.

- Preparing to Upgrade Oracle Traffic Director from an Earlier or a Previous 12c to the Latest 12c
  This section describes preparing the upgrade Oracle Traffic Director from an earlier or previous 12*c* version to the latest 12*c* (12.2.1.3.0) release version.

- Performing Pre-Upgrade Tasks on Oracle Traffic Director Domain to be Upgraded
  You must perform the tasks as in this section, before you begin any upgrade from an earlier or previous Oracle Traffic Director 12*c* domain to the latest 12*c* (12.2.1.3.0). These tasks ensure you have a successful upgrade and a limited amount of downtime.

- Stopping Servers and Processes
  Before you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.

- Reconfiguring the Existing Domain in Oracle Traffic Director
  Run the Reconfiguration Wizard to reconfigure your Oracle Traffic Director domain component configurations to 12*c* (12.2.1.3.0).

- Starting the Upgrade Assistant for Oracle Traffic Director 12c Specific Upgrade
  Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12*c* (12.2.1.3.0). Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade for one domain at a time.

- Upgrading a Collocated Domain
  Run the Upgrade Assistant to upgrade Oracle Traffic Director component configurations on the collocated domain. You can upgrade a collocated Oracle Traffic Director, from an earlier or a previous 12*c* domain to the latest 12c (12.2.1.3.0) version.

- Upgrading a Standalone Domain
  Run the Upgrade Assistant to upgrade Oracle Traffic Director component configurations on the standalone domain. You can upgrade a standalone Oracle Traffic Director, from an earlier or a previous 12*c* domain to the latest 12*c* (12.2.1.3.0) version.

- Verifying the Component Configurations for a Successful Upgrade
  After completing all the component configurations upgrade steps, verify whether it is successful by checking your upgraded configuration for Oracle Traffic Director domain.

- Post-Upgrade Tasks
  Follow the process to complete post-upgrade tasks for Oracle Traffic Director from an earlier/previous 12*c* to the latest 12*c* (12.2.1.3.0) version.

- Starting Servers and Processes
  After a successful upgrade from an earlier/previous 12*c* to the latest 12*c* (12.2.1.3.0) version, start all the processes and servers, including the Administration Server and any Managed Servers and system components.

About Oracle Traffic Director Upgrade Process from an Earlier or a Previous 12*c* Release

Review the roadmap for an overview of the upgrade process for Oracle Traffic Director from a previous 12*c* release.

The steps you take to upgrade your existing domain will vary depending on how your domain is configured and which components are being upgraded. Follow only those steps that are applicable to your deployment.

Table 4-1   Tasks for Upgrading Oracle Traffic Director from a Previous 12*c* Release

Task	Description
Required If you have not done so already, review the introductory topics in this guide and complete the required pre-upgrade tasks.	See: • Introduction to Upgrading Oracle Traffic Director to 12*c* (12.2.1.3.0) • Pre-Upgrade Requirements • Oracle Fusion Middleware Pre-Upgrade Checklist

Table 4-1   (Cont.) Tasks for Upgrading Oracle Traffic Director from a Previous 12*c* Release

Task	Description
Required Download and install the Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions into a new Oracle home.	See Installing the Product Distributions. 💡 **Tip:** See the following documents for more information on the installation and configuration of Oracle Fusion Middleware Infrastructure and Oracle Traffic Director: • *Installing and Configuring the Oracle Fusion Middleware Infrastructure* • *Installing Oracle Traffic Director*
Required Shut down the source and target environments (stop all the Administration and Managed Servers).	⚠ **WARNING:** Failure to shut down your servers during an upgrade may lead to data corruption. See Stopping Servers and Processes .
Required Reconfigure the existing domain.	Run the reconfiguration wizard targeting the existing domain to update WebLogic Server core infrastructure and the domain to 12*c* (12.2.1.3.0) version.
Required Start the Upgrade Assistant to upgrade domain component configurations.	The Upgrade Assistant is used to update the domain's component configurations on the node that hosts the Administration Server. See Starting the Upgrade Assistant for Oracle Traffic Director 12*c* Specific Upgrade.

Table 4-1   (Cont.) Tasks for Upgrading Oracle Traffic Director from a Previous 12*c* Release

Task	Description
Required Create Oracle Traffic Director instances.	The Upgrade Assistant does not create Oracle Traffic Director instances. These instances must be created post upgrade by targeting Oracle Traffic Director configurations to machines, using Fusion Middleware Control UI or Oracle WebLogic Scripting Tool (WLST). See Post-Upgrade Tasks. **✎ Note:** This is not applicable for upgrading standalone domain.
Optional Upgrade remote managed domains.	For the collocated domain managed remote nodes, we need to upgrade the managed domains on the remote nodes by packing the upgraded collocated domain and recopying the same on to the remote nodes. **✎ Note:** This is not applicable for upgrading standalone domain.
Optional Setup failover.	If your source Oracle Traffic Director installation is part of a failover setup with remote nodes managed by the administration server, you must recreate the similar topology as specified in Configuring Failover. **✎ Note:** This is not applicable for upgrading standalone domain.
Required Start Upgrade Assistant to upgrade standalone system component configurations.	Upgrade Assistant updates the standalone agent's component configurations. See Starting the Upgrade Assistant for Oracle Traffic Director 12*c* Specific Upgrade.

Table 4-1   (Cont.) Tasks for Upgrading Oracle Traffic Director from a Previous 12*c* Release

Task	Description
Required Start all process and servers. Restart the servers and Oracle Traffic Director 12*c* (12.2.1.3.0) instance.	When the upgrade process is complete, restart Oracle Traffic Director 12*c* (12.2.1.3.0) instance. Once the upgrade process is complete, start all processes and servers including the Admin Server, Managed Servers and Oracle Traffic Director instances. See Starting Servers and Processes.
Required Complete and verify the upgrade.	Perform the required post-upgrade configuration tasks (if needed), including starting the new Administration and Managed Servers and node manager to ensure there are no issues. **❗ Important:** Oracle recommends that you ensure all of the upgraded components are working as expected before deleting your backups. See Verifying the Component Configurations.

Preparing to Upgrade Oracle Traffic Director from an Earlier or a Previous 12*c* to the Latest 12*c*

This section describes preparing the upgrade Oracle Traffic Director from an earlier or previous 12*c* version to the latest 12*c* (12.2.1.3.0) release version.

> **❗ Important:**
>
> Before you upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0), you must ensure that 12*c* (12.2.1.3.0) binaries are installed in a **new** `FMW_HOME`.

> **✎ Note:**
>
> Upgrading across different platforms is not supported. For example, you cannot upgrade Oracle Traffic Director from a Linux to Solaris environment.

For more information on installing 12*c* (12.2.1.3.0) binaries in a new `FMW_HOME`, see the following topic with more details on the procedure and processes.

- Installing the Product Distributions
  Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions on the target system and install them using Oracle Universal Installer.

Installing the Product Distributions

Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Traffic Director 12*c* (12.2.1.3.0) distributions on the target system and install them using Oracle Universal Installer.

> **Note:**
>
> When Infrastructure is required for the upgrade, you must install the Oracle Fusion Middleware distribution first before you install other Fusion Middleware products.

The following install instructions are for the standard Oracle Fusion Middleware installation topology. Refer to the Oracle Traffic Director Installation Guide for more information about installing the other supported topologies.

To install 12*c* (12.2.1.3.0) distributions:

1. Sign in to the target system.

2. Download the following from Oracle Technology Network or Oracle Software Delivery Cloud to your target system:

   - Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.3.0_infrastructure_generic.jar`)

   - Oracle Traffic Director (UNIX: `distribution_name_12.2.1.3.0_otd_linux64.bin`), (Windows: `distribution_name_12.2.1.3.0_otd_win64.exe`)

3. Change to the directory where you downloaded the 12*c* (12.2.1.3.0) product distribution.

4. Start the installation program for Oracle Fusion Middleware Infrastructure:

   - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.3.0_infrastructure_generic.jar`

   - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.3.0_infrastructure_generic.jar`

5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an 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, and click **Next**.

> **Note:**
>
> The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.

7. On the Auto Updates screen, select an option:

   • **Skip Auto Updates**: If you do not want your system to check for software updates at this time.

   • **Select patches from directory**: To navigate to a local directory if you downloaded patch files.

   • **Search My Oracle Support for Updates**: To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

   Click **Next**.

8. On the Installation Location screen, specify the location for the Oracle home directory and click **Next**.

   For more information about Oracle Fusion Middleware directory structure, see Understanding Directories for Installation and Configuration in *Oracle Fusion Middleware Planning an Installation of Oracle Fusion Middleware*.

9. On the Installation Type screen, select the following:

   a. For Infrastructure, select **Fusion Middleware Infrastructure**

   b. For Oracle Traffic Director, select Oracle Traffic Director

   Select the type of installation and consequently, the products and feature sets you want to install.

   • 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.

   • Select **Collocated OTD** (Managed through WebLogic server) if you are installing Oracle Traffic Director in a WebLogic Server domain on the administration server node.

   > **Important:**
   >
   > You can only upgrade earlier versions of Oracle Traffic Director 12*c* in the standalone OTD. Upgrading Oracle Traffic Director from 11*g* to 12*c* standalone is not supported.

   Click **Next**.
   See Installing Oracle Traffic Director for more information.

10. The Prerequisite Checks screen analyzes the host computer to ensure that the specific operating system prerequisites have been met.

To view the list of tasks that are verified, select **View Successful Tasks**. To view log details, select **View Log**. If any prerequisite check fails, then an error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or the warning message and continue with the installation, click **Skip** (not recommended).

11. On the Installation Summary screen, verify the installation options that you selected.

    If you want to save these options to a response file, click **Save Response File** and enter the response file location and name. The response file collects and stores all the information that you have entered, and enables you to perform a silent installation (from the command line) at a later time.
    Click **Install** to begin the installation.

12. On the Installation Progress screen, when the progress bar displays 100%, click **Finish** to dismiss the installer, or click **Next** to see a summary.

13. The Installation Complete screen displays the Installation Location and the Feature Sets that are installed. Review this information and click **Finish** to close the installer.

14. After you have installed Oracle Fusion Middleware Infrastructure, enter the following command to start the installer for your product distribution and repeat the steps above to navigate through the installer screens:

    (UNIX) `./`*`distribution_name`*`_12.2.1.3.0_otd_linux64.bin`

    (Windows) *`distribution_name`*`_12.2.1.3.0_otd_win64.exe`

Performing Pre-Upgrade Tasks on Oracle Traffic Director Domain to be Upgraded

You must perform the tasks as in this section, before you begin any upgrade from an earlier or previous Oracle Traffic Director 12*c* domain to the latest 12*c* (12.2.1.3.0). These tasks ensure you have a successful upgrade and a limited amount of downtime.

Before you upgrade your earlier or previous Oracle Traffic Director 12*c* version to the latest Oracle Traffic Director 12*c* (12.2.1.3.0) environment, you must follow these steps:

1. If you have configured `webgate` plug-in on Oracle Traffic Director instance, then you must ensure that the related changes are pulled into the corresponding Oracle Traffic Director configuration before you run the upgrade.

   > **Tip:**
   >
   > See pullComponentChanges in *WebLogic Scripting Tool Command Reference for Oracle Traffic Director*.

2. Shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.

> **Tip:**
>
> To stop Oracle Traffic Director instances in 12*c* environment, see
> Managing Oracle Traffic Director Instances in 12*c* Environment.

For more information on stopping Administration and Managed Servers and Node Manager, see the following topic with more details on the procedure, processes, and servers.

Stopping Servers and Processes

Before you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.

An Oracle Fusion Middleware environment can consist of an Oracle WebLogic Server domain, an Administration Server, multiple managed servers, Java components, system components such as Identity Management components, and a database used as a repository for metadata. The components may be dependent on each other, so they must be stopped in the correct order.

> **Note:**
>
> The procedures in this section describe how to stop the existing, pre-upgrade servers and processes using the WLST command-line utility or a script. You can also use the Oracle Fusion Middleware Control and the Oracle WebLogic Server Administration Console. See Starting and Stopping Administration and Managed Servers and Node Manager.

To stop your pre-upgrade Fusion Middleware environment, navigate to the pre-upgrade domain and follow the steps below:

Step 1: Stop System Components

To stop system components, such as Oracle HTTP Server, use the `stopComponent` script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopComponent.sh *component_name*
- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopComponent.cmd *component_name*

You can stop system components in any order.

Step 2: Stop the Managed Servers

To stop a WebLogic Server Managed Server, use the `stopManagedWebLogic` script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopManagedWebLogic.sh *managed_server_name admin_url*
- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopManagedWebLogic.cmd *managed_server_name admin_url*

When prompted, enter your user name and password.

Step 3: Stop Oracle Identity Management Components

Stop any Oracle Identity Management components, such as Oracle Internet Directory:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopComponent.sh *component_name*

- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopComponent.cmd *component_name*

Step 4: Stop the Administration Server

When you stop the Administration Server, you also stop the processes running in the Administration Server, including the WebLogic Server Administration Console and Fusion Middleware Control.

To stop the Administration Server, use the stopWebLogic script:

- (UNIX) *EXISTING_DOMAIN_HOME*/bin/stopWebLogic.sh

- (Windows) *EXISTING_DOMAIN_HOME*\bin\stopWebLogic.cmd

When prompted, enter your user name, password, and the URL of the Administration Server.

Step 5: Stop Node Manager

To stop Node Manager, close the command shell in which it is running.

Alternatively, after setting the nodemanager.properties attribute QuitEnabled to true (the default is false), you can use WLST to connect to Node Manager and shut it down. See stopNodeManager in *WLST Command Reference for WebLogic Server*.

- Managing Oracle Traffic Director Instances in 12c Environment
  Before you start upgrading your domain, you must stop all the instances of Oracle Traffic Director.

Managing Oracle Traffic Director Instances in 12*c* Environment

Before you start upgrading your domain, you must stop all the instances of Oracle Traffic Director.

For more information on how you can configure in multiple modes, see the following topics:

- Starting, Stopping, and Restarting 12c Oracle Traffic Director Instances Using Fusion Middleware Control
  Learn more about starting, stopping, or restarting one or more 12*c* Oracle Traffic Director instances in the graphical mode.

- Starting, Stopping, and Restarting Oracle Traffic Director 12c Instances Using Oracle WebLogic Scripting Tool (WLST)
  Learn more about starting, stopping, or restarting one or more Oracle Traffic Director 12*c* instances in the command line mode.

Starting, Stopping, and Restarting 12*c* Oracle Traffic Director Instances Using Fusion Middleware Control

Learn more about starting, stopping, or restarting one or more 12*c* Oracle Traffic Director instances in the graphical mode.

To start, stop, or restart 12*c* Oracle Traffic Director instances by using Fusion Middleware Control, you must perform the following:

1. Sign in to Fusion Middleware Control for Oracle Traffic Director.

   > **Tip:**
   >
   > For more details, see Displaying Fusion Middleware Control in
   > *Administering Oracle Traffic Director*.

2. Click **WebLogic Domain** button at the upper left corner of the page.
3. Select Administration **>** OTD Configurations.

   A list of the available configurations is displayed.
4. Select the configuration for which you want to start, stop, or restart instances.
5. Click **Oracle Traffic Director Configuration**, in the Common Tasks pane.
6. Select Administration **>** Instances.

   The Instances page is displayed.
7. Select on the list of instances available.

   Click **Start Instances**, or **Stop Instances**, or **Restart Instances** button, as required, for the instance that you want to start, stop, or restart.

Starting, Stopping, and Restarting Oracle Traffic Director 12*c* Instances Using Oracle WebLogic Scripting Tool (WLST)

Learn more about starting, stopping, or restarting one or more Oracle Traffic Director 12*c* instances in the command line mode.

To start, stop, or restart one or more Oracle Traffic Director 12*c* instances, you must run the following commands:

Table 4-2   Configuration Commands for 12*c* Oracle Traffic Director Instances

Action	Commands
To Start	start
To Stop	shutdown
To Restart	softRestart

The following examples are for your reference and requirement.

The three commands `start`, `shutdown`, and `softRestart` the instance on the machine `otd_foo_machine1`.

```
start('otd_foo_machine1')

shutdown('otd_foo_machine1')

softRestart('otd_foo_machine1')
```

> 💡 **Tip:**
>
> For more information on Oracle WebLogic Scripting Tool (WLST) commands mentioned in this section, see *WebLogic Scripting Tool Command Reference for Oracle Traffic Director*.

Reconfiguring the Existing Domain in Oracle Traffic Director

Run the Reconfiguration Wizard to reconfigure your Oracle Traffic Director domain component configurations to 12*c* (12.2.1.3.0).

Follow the process to reconfigure the source Oracle Traffic Director domain on the machine that hosts the Administration Server or the Standalone Domain.

> ⬥ **WARNING:**
>
> Before you start your reconfiguration process for an existing collocated domain, you must ensure that the Administration Server is not running.

You can run the Reconfiguration Wizard in the following modes:

- Reconfiguring the Existing Oracle Traffic Director Domain in Graphical Mode
  To reconfigure your existing Oracle Traffic Director domain using the graphical mode, run the Reconfiguration Wizard.

- Reconfiguring the Existing Oracle Traffic Director Domain Using Oracle WebLogic Scripting Tool
  Learn about how you can reconfigure your existing Oracle Traffic Director domain in the command line mode.

Reconfiguring the Existing Oracle Traffic Director Domain in Graphical Mode

To reconfigure your existing Oracle Traffic Director domain using the graphical mode, run the Reconfiguration Wizard.

Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

1. Launch `<12.2.1.3.0 oracle home>/oracle_common/common/bin/reconfig.sh` from 12.2.1.3.0 installation location.

While the steps described are for collocated domain, the screens are very similar for standalone domain as well.

In the Select Domain screen, provide the domain path of the previous 12*c* release in the *Existing Domain Location* field.

2. The setup progress screen is displayed.

   Click **Next** to continue.

3. The Reconfig Summary screen is displayed.

   Click **Next** to continue.

4. Click **Next** to continue in the Domain mode and the JDK screen.

5. The Advanced Configuration screen is displayed.

   Click **Next** to continue.

6. Click **Reconfig** on the Configuration Summary screen to continue.

Figure 4-1   Reconfiguring the Existing Oracle Traffic Director Domain Configuration Summary in the Upgrade Assistant
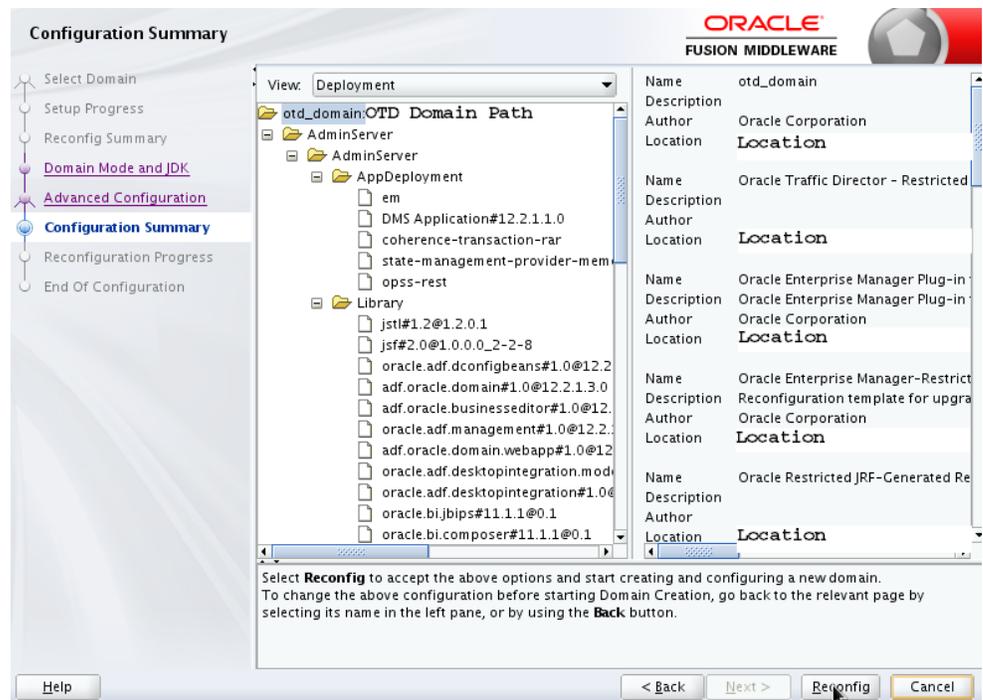
7. The Reconfiguration Progress screen is displayed.

   Click **Next** to continue once the progress is completed and shows 100%.

8. Click **Close** in the End of Configuration screen to finish the Reconfiguration.

Reconfiguring the Existing Oracle Traffic Director Domain Using Oracle WebLogic Scripting Tool

Learn about how you can reconfigure your existing Oracle Traffic Director domain in the command line mode.

You can also reconfigure the domain using Oracle WebLogic Scripting Tool in the offline mode using the `readDomainForUpgrade` command.

> **Tip:**
>
> For more information, see Reconfiguring a WebLogic Domain Using WebLogic Scripting Tool.

Starting the Upgrade Assistant for Oracle Traffic Director 12*c* Specific Upgrade

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12*c* (12.2.1.3.0). Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade for one domain at a time.

> **Note:**
>
> Before you start the Upgrade Assistant, make sure that the JVM character encoding is set to UTF-8 for the platform on which the Upgrade Assistant is running. If the character encoding is not set to UTF-8, then you will not be able to download files containing Unicode characters in their names. This can cause the upgrade to fail.

To start the Upgrade Assistant

1. Go to the `oracle_common/upgrade/bin` directory:
   - (UNIX) `NEW_ORACLE_HOME/oracle_common/upgrade/bin`
   - (Windows) `NEW_ORACLE_HOME\oracle_common\upgrade\bin`

2. Start the Upgrade Assistant:
   - (UNIX) `./ua`
   - (Windows) `ua.bat`

For information about other parameters that you can specify on the command line, such as logging parameters, see the following topic.

- Upgrade Assistant Parameters Specific to Oracle Traffic Director
  You can start the Upgrade Assistant, using the specific command line parameters for Oracle Traffic Director.

Upgrade Assistant Parameters Specific to Oracle Traffic Director

You can start the Upgrade Assistant, using the specific command line parameters for Oracle Traffic Director.

When you start the Upgrade Assistant from the command line, you can specify additional parameters. The Table 3-3 shows the specific Command-Line Parameters for Oracle Traffic Director upgrade in Upgrade Assistant.

Table 4-3   Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks **Note**: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the -examine parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in *silent mode* (without displaying Upgrade Assistant screens).
-examine	Optional	Performs the examine phase but does not perform an actual upgrade. Do not specify this parameter if you have specified the -readiness parameter.
-logLevel *attribute*	Optional	Sets the logging level, specifying one of the following attributes: • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR The default logging level is NOTIFICATION. Consider setting the -logLevel TRACE attribute to so that more information is logged. This is useful when troubleshooting a failed upgrade. The Upgrade Assistant's log files can become very large if -logLevel TRACE is used.

ORACLE

Table 4-3   (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
`-logDir location`	Optional	Sets the default location of upgrade log files and temporary files. You must specify an existing, writable directory where the Upgrade Assistant will create log files and temporary files.
		The default locations are:
		(UNIX)
		`NEW_ORACLE_HOME/oracle_common/upgrade/logs` `NEW_ORACLE_HOME/oracle_common/upgrade/temp`
		(Windows)
		`NEW_ORACLE_HOME\oracle_common\upgrade\logs` `NEW_ORACLE_HOME\oracle_common\upgrade\temp`
`-help`	Optional	Displays all of the command-line options.

Upgrading a Collocated Domain

Run the Upgrade Assistant to upgrade Oracle Traffic Director component configurations on the collocated domain. You can upgrade a collocated Oracle Traffic Director, from an earlier or a previous 12*c* domain to the latest 12c (12.2.1.3.0) version.

You can run the Upgrade Assistant in the following modes:

- Upgrading Collocated Oracle Traffic Director in Graphical Mode
- Upgrading Collocated Oracle Traffic Director in Silent Mode

> **Note:**
>
> The Upgrade Assistant must only be running on the domain where Oracle Traffic Director is collocated with WebLogic Administration Server within an Oracle Fusion Middleware Infrastructure Oracle home.

For more information on upgrading remote nodes managed by the administration server, see Upgrading Remote Managed Domains.

You can run the Upgrade Assistant in the following modes to upgrade a collocated domain:

- Upgrading Collocated Oracle Traffic Director in Graphical Mode
  To upgrade your collocated Oracle Traffic Director using the graphical mode, run the upgrade wizard.

- Upgrading Collocated Oracle Traffic Director in Silent Mode
  You can upgrade your collocated Oracle Traffic Director in silent mode (command line mode).

- Upgrading Remote Managed Domains
  Follow the process as in this topic to upgrade Oracle Traffic Director remotely managed domains.

Upgrading Collocated Oracle Traffic Director in Graphical Mode

To upgrade your collocated Oracle Traffic Director using the graphical mode, run the upgrade wizard.

Launch the Upgrade Assistant and follow the steps below:

1. The Welcome screen displays the pre-upgrade tasks that need to be performed.

   Ensure you perform these tasks and Click **Next** to continue.

2. In the Upgrade Type screen, select **All Configurations Used By a Domain** and provide the path of the reconfigured domain of an earlier or a previous 12*c* release in the **Domain Directory** field.

   Click **Next** to continue.

3. In the Component List screen, the list of components that will be upgraded are displayed.

   Click **Next** to continue.

4. In the Prerequisites screen, make sure you have met all the prerequisites mentioned in the screen.

   Select all the check boxes.

   Then click **Next** to continue.

5. In the Oracle Traffic Director Upgrade Path screen, select the source version for the upgrade as **12*c* source**.

   Figure 4-2   Upgrading Collocated Oracle Traffic Director 12*c* Upgrade Path in the Upgrade Assistant

6. The Examine screen shows the status of the examination process where it is checked if the components are ready to be upgraded.

Once the process is complete, Click **Next** to continue.

7. The Upgrade Summary screen is displayed.

Click the **Save Response File..** button to create a response file.

A response file is a text file the Upgrade Assistant can write out that saves all of your inputs to the various screens.

This file can be used later as an input for Command Line upgrade bypassing the GUI.

Figure 4-3   Upgrading Collocated Oracle Traffic Director 12*c* Upgrade Summary in the Upgrade Assistant
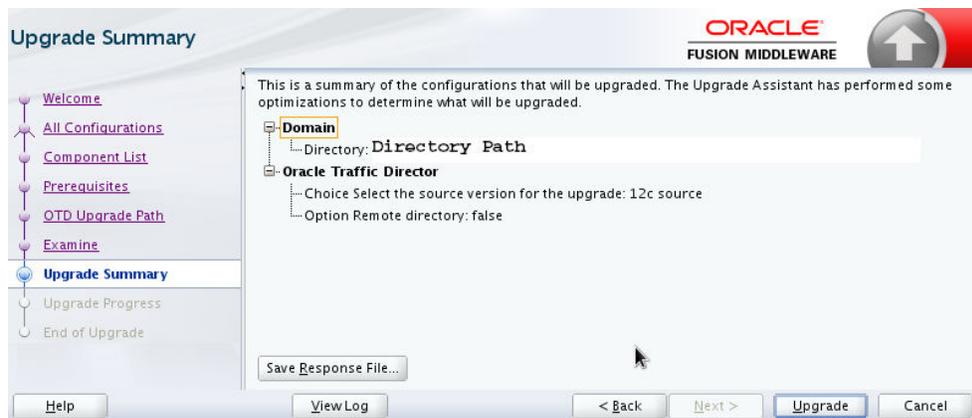
Click **Upgrade** to continue.

8. The Upgrade Progress screen displays the upgrade progress.

Once upgrade is done, Click **Next** to continue.

9. In the Upgrade Success screen, check the log file in case of any errors during the upgrade.

Click **Close** to complete the upgrade.

Upgrading Collocated Oracle Traffic Director in Silent Mode

You can upgrade your collocated Oracle Traffic Director in silent mode (command line mode).

To upgrade collocated Oracle Traffic Director using silent mode, run the upgrade assistant command with the response file generated using the upgrade wizard.

• After a successful upgrade, a success message is displayed on the console.

• Log file for the upgrade will be saved in the following path:

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/logs
```

- Command Line for silent upgrade (on UNIX):

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/bin/ua
-response <response-file>
-logLevel <Log-verbosity>
```

Syntax

After a successful upgrade, a success message is displayed on the console. Log file is available under the following path:

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/logs
```

Command Line for Silent Upgrade (on UNIX)

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/bin/ua -response <response-file> -logLevel <Log-verbosity>
```

Sample Response File

The following is a sample response file as an example for your requirement.

```
# This is a response file for the Fusion Middleware Upgrade Assistant.
# Individual component upgrades are performed in the order they are
described here.
# Each upgrade is introduced by a section header containing the name of the
# component and name of the upgrade plugin. The form of the section header
is
# [ComponentName.PluginName]

# These names can be found in the Upgrade Descriptor files for the
components.
# Individual input lines consist of a name, an equal sign, and a value.
# The name is in two parts separated by a period. The first part is the
"name" attribute from the Descriptor File XML tag by which the plugin
refers to the value.
# The second part of the name identifies a field within that value. Some
input types have only one field, while other types can have half a dozen.
# Do not intermix input lines that apply to different XML tags.

[GENERAL]
# This is the file format version number. Do not change the next line.
fileFormatVersion = 3

# The next section contains information for accessing a WebLogic Server
domain.
[UAWLSINTERNAL.UAWLS]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 1

# Specifies the WebLogic Server domain directory:
UASVR.path = /export/orahome/domains/otd_domain
```

```
# The next section contains the information for performing a mid-tier
upgrade on Oracle JRF, as described in the Upgrade Descriptor file located
at
# /export/orahome/oracle_common/plugins/upgrade/jrfua.xml
# Do not change the next line.
[JRF.JRF_CONFIG_PLUGIN]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 8

# The next section contains the information for performing a mid-tier
upgrade on System Components Infrastructure, as described in the Upgrade
Descriptor file located at
# /export/orahome/oracle_common/plugins/upgrade/syscomp.xml
# Do not change the next line.
[CAM.SYSCOMP]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 4

# The next section contains the information for performing a mid-tier
upgrade on Oracle Traffic Director, as described in the Upgrade Descriptor
file located at
# /export/orahome/otd/plugins/upgrade/otd-upgrade.xml
# Do not change the next line.
[OTD.CONFIG_UPGRADE]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 12

# Specifies a choice from a collection of values,
# "Select the source version for the upgrade"
UPGRADE_CHOICE.choose = 12-12

# Specifies the choice for a yes/no option:
# "Remote directory"
REMOTE_INSTANCE_HOME.option = no
```

Upgrading Remote Managed Domains

Follow the process as in this topic to upgrade Oracle Traffic Director remotely managed domains.

If the Administration server in the upgraded domain manages multiple remote domains, the following procedure must be followed to upgrade each of these.

> **✎ Note:**
>
> Note that domains managed by a remote Administration Server are not directly upgradable. Instead, the collocated domain on which the Administration Server is running must be packed and unpacked on the remote node.

Learn more about processes and steps on how you can upgrade remotely managed domains as in the following modes:

- Installing Product Binaries
  You must install the product binaries to begin your Oracle Traffic Director upgrade in remote managed domains.

- Packing the Upgraded Collocated Domain
  Follow the steps to pack your upgraded collocated domain in Oracle Traffic Director upgrade.

- Unpacking the Upgraded Collocated Domain on the Remote Nodes
  Follow the steps to unpack your upgraded collocated domain in Oracle Traffic Director upgrade on the remote nodes.

Installing Product Binaries

You must install the product binaries to begin your Oracle Traffic Director upgrade in remote managed domains.

Install Oracle Traffic Director in standalone mode on each node that hosts remote managed domain.

> **💡 Tip:**
>
> For more information on installing Oracle Traffic Director in a standalone mode, see Installation Procedure in *Installing Oracle Traffic Director*.

Packing the Upgraded Collocated Domain

Follow the steps to pack your upgraded collocated domain in Oracle Traffic Director upgrade.

Pack the upgraded domain in the node that hosts the Administration Server using the pack command.

- This command creates a template jar file that contains a subset of the domain that can be used to create an Oracle Traffic Director managed domain on the remote machine.

- Copy the template jar created by pack command to the node that needs to host remote managed domain or keep the jar in a file system location which can be accessed from that node.

Syntax

```
<12.2.1.3.0 Oracle Home>/oracle_common/common/bin/pack.sh
-domain=<full path to the domain that needs to be packed>
-template=<full path to a template jar file to be created>
-template_name=<description>
-managed=true
```

Sample Response File

The following is a sample response file as an example for your requirement.

```
<12.2.1.3.0 Oracle Home>/oracle_common/common/bin/pack.sh
-domain=<domain home>
-template=/share/files/upgraded_domain.jar
-template_name=test_after_upgrade
-managed=true
```

Unpacking the Upgraded Collocated Domain on the Remote Nodes

Follow the steps to unpack your upgraded collocated domain in Oracle Traffic Director upgrade on the remote nodes.

To unpack your upgraded collocated domain, run the unpack command on the standalone node that needs to host remote managed domain.

Syntax

```
<12.2.1.3.0 Oracle Home>/oracle_common/common/bin/unpack.sh
-domain=<full path to the domain that needs to be created>
-template=<full path to the template jar file created using pack>
```

Sample Response File

The following is a sample response file as an example for your requirement.

```
<12.2.1.3.0 Oracle Home>/oracle_common/common/bin/unpack.sh
-domain=<domain home>
-template=/share/files/upgraded_domain.jar
```

Upgrading a Standalone Domain

Run the Upgrade Assistant to upgrade Oracle Traffic Director component configurations on the standalone domain. You can upgrade a standalone Oracle Traffic Director, from an earlier or a previous 12*c* domain to the latest 12*c* (12.2.1.3.0) version.

You can run the Upgrade Assistant in the following modes:

- Upgrading Standalone Oracle Traffic Director in Graphical Mode
  To upgrade your standalone Oracle Traffic Director using the graphical mode, run the upgrade wizard.

- Upgrading Standalone Oracle Traffic Director in Silent Mode
  You can upgrade your standalone Oracle Traffic Director in silent mode (command line mode).

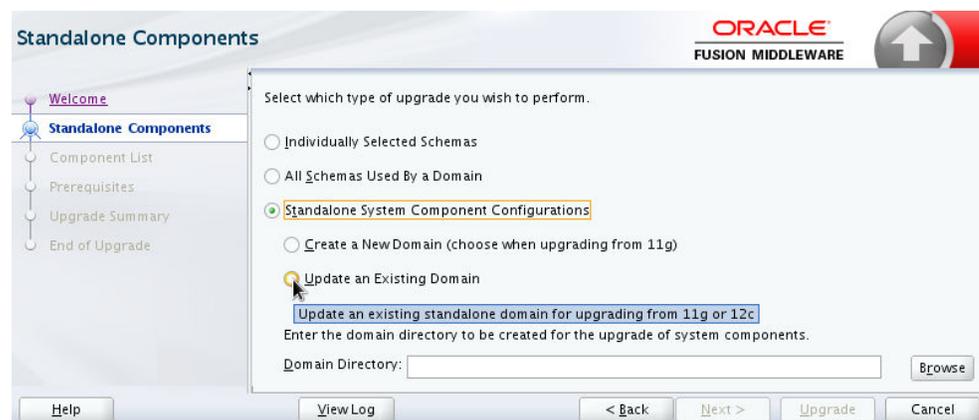# Upgrading Standalone Oracle Traffic Director in Graphical Mode

To upgrade your standalone Oracle Traffic Director using the graphical mode, run the upgrade wizard.

Launch the Upgrade Assistant and follow the steps below:

1. The Welcome screen displays the pre-upgrade tasks that need to be performed.

   Ensure you perform these tasks and Click **Next** to continue.

2. In the Upgrade Type screen, Select **Standalone System Component Configurations**.

   In the Standalone Components screen, Select **Update an Existing Domain** and provide the path of the reconfigured standalone domain of previous 12*c* release in the **Domain Directory** field.

   Figure 4-4   Upgrading Standalone Oracle Traffic Director Standalone Components in the Upgrade Assistant

   Click **Next** to continue.

   > 📝 **Note:**
   >
   > The **Create a new Domain** option is not supported in Oracle Traffic Director Standalone Domain.

3. In the Component List screen, the list of components that will be upgraded are displayed.

   Click **Next** to continue.

4. In the Prerequisites screen, ensure you have met all the prerequisites mentioned in the screen.

   Select all the check boxes, then Click **Next** to continue.

5. In Oracle Traffic Director Upgrade Path screen, Select the source version for the upgrade as **12c source**.

Figure 4-5   Upgrading Standalone Oracle Traffic Director Instance Directories in the Upgrade Assistant
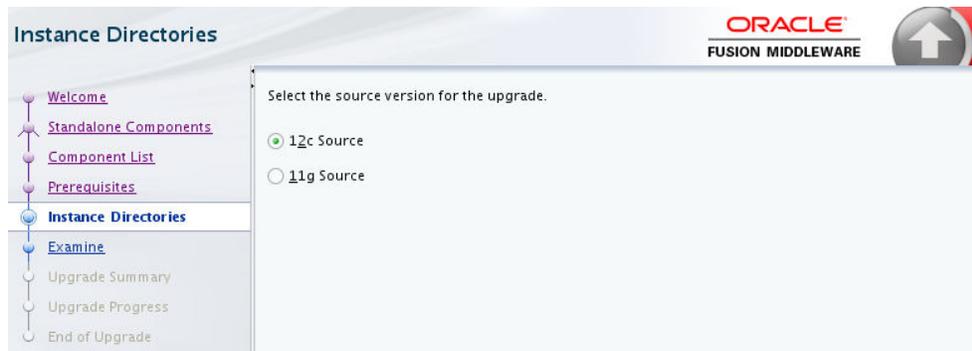
6. The Examine screen shows the status of the examination process where it is checked if the components are ready to be upgraded.

   Once the process is complete, Click **Next** to continue.

7. The Upgrade Summary screen is displayed.

   Click the **Save Response File...** button to create a response file.

   This file can be used as an input for Command Line upgrade.

Figure 4-6   Upgrading Standalone Oracle Traffic Director Upgrade Summary in the Upgrade Assistant
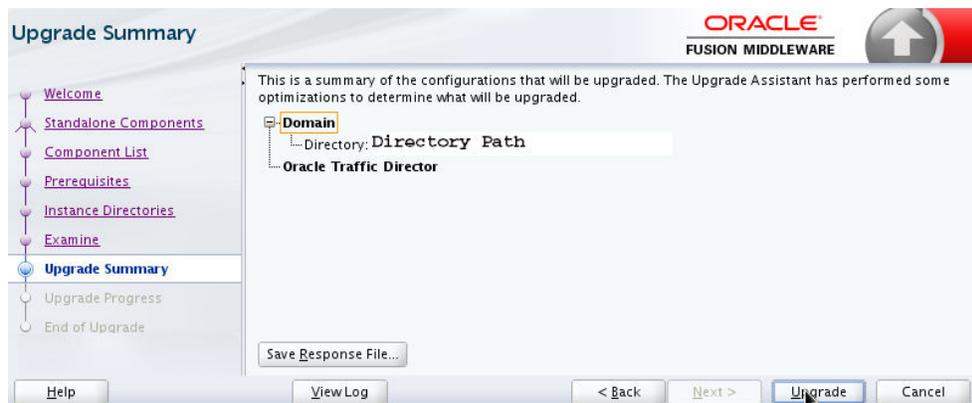
   Click **Upgrade** to continue.

8. The Upgrade Progress screen displays the upgrade progress.

   Once the upgrade is completed, Click **Next** to continue.

9. In the Upgrade Success screen, check the log file in case of any errors during the upgrade.

   Click **Close** to complete this upgrade.

Upgrading Standalone Oracle Traffic Director in Silent Mode

You can upgrade your standalone Oracle Traffic Director in silent mode (command line mode).

To upgrade standalone Oracle Traffic Director using silent mode, run the Upgrade Assistant command with the response file generated using the upgrade wizard.

Syntax

After a successful upgrade, a success message is displayed on the console. Log file is available under the following path:

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/logs
```

Command Line for Silent Upgrade (on UNIX)

```
<12.2.1.3.0 oracle home>/oracle_common/upgrade/bin/ua
-response <response-file>
-logLevel <Log-verbosity>
```

Sample Response File

The following is a sample response file as an example for your requirement.

```
# This is a response file for the Fusion Middleware Upgrade Assistant.
# Individual component upgrades are performed in the order they are
described here.
# Each upgrade is introduced by a section header containing the name of
the component and name of the upgrade plugin. The form of the section
header is
# [ComponentName.PluginName]

# These names can be found in the Upgrade Descriptor files for the
components.
# Individual input lines consist of a name, an equal sign, and a value.
# The name is in two parts separated by a period.  The first part is the
"name" attribute from the Descriptor File XML tag by which the plugin
refers to the value.
# The second part of the name identifies a field within that value. Some
input types have only one field, while other types can have half a dozen.
# Do not intermix input lines that apply to different XML tags.

[GENERAL]

# This is the file format version number.  Do not change the next line.
fileFormatVersion = 3

# The next section contains information for accessing a WebLogic Server
domain.
[UAWLSINTERNAL.UAWLS]

# The following number uniquely identifies this instance of an upgrade
```

```
plugin. Do not change it.
pluginInstance = 1

# Specifies the WebLogic Server domain directory:
UASVR.path = /export/12212/orahome/otd_domain

# The next section contains the information for performing a mid-tier
upgrade on Oracle Traffic Director, as described in the Upgrade Descriptor
file located at
#   /export/12213/orahome/otd/plugins/upgrade/otd-upgrade.xml
# Do not change the next line.
[OTD.CONFIG_UPGRADE]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 5

# The next section contains the information for performing a mid-tier
upgrade on System Components Infrastructure, as described in the Upgrade
# Descriptor file located at
#   /export/12213/orahome/oracle_common/plugins/upgrade/syscomp.xml
# Do not change the next line.
[CAM.SYSCOMP]

# The following number uniquely identifies this instance of an upgrade
plugin. Do not change it.
pluginInstance = 2

# The next few lines describe an Oracle Instance:
#  "Enter the location of one or more 11g Oracle instance directories to
be upgraded."
# Specifies whether source of the upgrade is 12c or not
INSTANCES.sourceIs12 = yes
```

Verifying the Component Configurations for a Successful Upgrade

After completing all the component configurations upgrade steps, verify whether it is successful by checking your upgraded configuration for Oracle Traffic Director domain.

This section describes the steps to verify the component configurations upgrade for Oracle Traffic Director domain.

For Oracle Traffic Director 12*c* Configuration:

*   The version in `server.xml` is modified to 12*c* (12.2.1.3.0).

*   The value of `ORACLE_HOME` in the scripts and in the `obj.conf` file are updated as the new `ORACLE_HOME` for local Oracle Traffic Director instances.

Post-Upgrade Tasks

Follow the process to complete post-upgrade tasks for Oracle Traffic Director from an earlier/previous 12*c* to the latest 12*c* (12.2.1.3.0) version.

Review the following list of post-upgrade tasks to be performed after using the Upgrade Assistant to upgrade to Oracle Traffic Director 12*c* (12.2.1.3.0):

- Oracle Traffic Director instances must be created post-upgrade, by targeting Oracle Traffic Director configurations to the machines using Fusion Middleware Control or Oracle WebLogic Scripting Tool (WLST).

> **Tip:**
>
> See Managing Instances in *Administering Oracle Traffic Director*.

- Setting up failover is a deployment task.

  These steps are best handled outside the upgrade as post-upgrade steps.

> **Tip:**
>
> For more information on deployment topology and configuring failover groups, see Configuring Oracle Traffic Director for High Availability in *Administering Oracle Traffic Director*.

- Any references in Oracle Traffic Director configuration files to the paths outside of `INSTANCE_HOME` and `ORACLE_HOME` may not be accessible post upgrade.

  This must be configured manually.

Starting Servers and Processes

After a successful upgrade from an earlier/previous 12*c* to the latest 12*c* (12.2.1.3.0) version, start all the processes and servers, including the Administration Server and any Managed Servers and system components.

The components may be dependent on each other and hence, they must be started in the correct order.

> **Tip:**
>
> To start Oracle Traffic Director instances in 12*c* environment, see Managing Instances.

For more information on starting and stopping Administration and Managed Servers and Node Manager, see the following topic with complete details on the procedure and how to run all these processes and servers.

- **Starting Servers and Processes**
  After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.

Starting Servers and Processes

After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.

The components may be dependent on each other so they must be started in the correct order.

> **✎ Note:**
>
> The procedures in this section describe how to start servers and process using the WLST command line or a script. You can also use the Oracle Fusion Middleware Control and the Oracle WebLogic Server Administration Console. See Starting and Stopping Administration and Managed Servers and Node Manager in *Administering Oracle Fusion Middleware.*

To start your Fusion Middleware environment, follow the steps below:

Step 1: Start the Administration Server

When you start the Administration Server, you also start the processes running in the Administration Server, including the WebLogic Server Administration Console and Fusion Middleware Control.

To start the Administration Server, use the `startWebLogic` script:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startWebLogic.sh
- (Windows) *NEW_DOMAIN_HOME*\bin\startWebLogic.cmd

When prompted, enter your user name, password, and the URL of the Administration Server.

Step 2: Start Node Manager

To start Node Manager, use the `startNodeManager` script:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startNodeManager.sh
- (Windows) *NEW_DOMAIN_HOME*\bin\startNodeManager.cmd

Step 3: Start Oracle Identity Management Components

Start any Oracle Identity Management components, such as Oracle Internet Directory, that form part of your environment:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startComponent.sh *component_name*
- (Windows) *NEW_DOMAIN_HOME*\bin\startComponent.cmd *component_name*

Step 4: Start the Managed Servers

To start a WebLogic Server Managed Server, use the `startManagedWebLogic` script:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startManagedWebLogic.sh *managed_server_name admin_url*

- (Windows) *NEW_DOMAIN_HOME*\bin\startManagedWebLogic.cmd *managed_server_name admin_url*

When prompted, enter your user name and password.

> **Note:**
>
> The startup of a Managed Server will typically start the applications that are deployed to it. Therefore, it should not be necessary to manually start applications after the Managed Server startup.

Step 5: Start System Components

To start system components, such as Oracle HTTP Server, use the `startComponent` script:

- (UNIX) *NEW_DOMAIN_HOME*/bin/startComponent.sh *component_name*

- (Windows) *NEW_DOMAIN_HOME*\bin\startComponent.cmd *component_name*

You can start system components in any order.

Part IV

Troubleshooting and Advanced Configurations

This part of Upgrading Oracle Traffic Director provides information about troubleshooting upgrade issues and options for advanced upgrade configurations.

- Troubleshooting the Upgrade
  If the upgrade process fails, you must close the Upgrade Assistant, correct the issue, and then restart the Upgrade Assistant.

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Troubleshooting the Upgrade

If the upgrade process fails, you must close the Upgrade Assistant, correct the issue, and then restart the Upgrade Assistant.

If the upgrade process fails *after* the upgrade process has started, you must drop the cloned repository and start from a freshly cloned repository in addition to correcting the underlying issue. There is no way to restart the failed upgrade process.

> 💡 **Tip:**
>
> For more information, see Troubleshooting Your Upgrade in *Upgrading with the Upgrade Assistant*.

For more options in troubleshooting, see:

- Troubleshooting Upgrade Performance Errors
  Learn more about upgrade related performance errors and how to troubleshoot them.

Troubleshooting Upgrade Performance Errors

Learn more about upgrade related performance errors and how to troubleshoot them.

The number of sessions present in a repository affects upgrade performance. Oracle recommends that you archive and purge your session logs to improve upgrade performance.

> 💡 **Tip:**
>
> For more information, see the following:
>
> - Purging the Log in *Administering Oracle Data Integrator*.
> - Managing Logs in *Administering Oracle Traffic Director*.

A

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

This appendix describes some common procedures for upgrading the JDK after installing and configuring an Oracle Fusion Middleware product.

- 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
```