

## **Oracle® Fusion Middleware**

Upgrading Oracle Business Intelligence

12c (12.2.1.2)

**E77928-02**

November 2016

Oracle Fusion Middleware Upgrading Oracle Business Intelligence, 12c (12.2.1.2)

E77928-02

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# Preface

This preface contains the following sections:

[Audience](#)

[Documentation Accessibility](#)

[Related Documents](#)

Upgrade documentation is organized by tasks in the 12c documentation library. The task-specific pages provide direct links to common upgrade procedures and related documentation.

[Conventions](#)

## Audience

This manual is intended for Oracle Fusion Middleware system administrators who are responsible for upgrading Oracle Fusion Middleware. It is assumed that the readers of this manual have knowledge of the following:

- Oracle Fusion Middleware 11g or Oracle Fusion Middleware 12c system administration and configuration information for the existing deployment
- The configuration and expected behavior of the system or systems being upgraded

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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## Related Documents

Upgrade documentation is organized by tasks in the 12c documentation library. The task-specific pages provide direct links to common upgrade procedures and related documentation.

You can refer the Oracle Fusion Middleware Library for additional information.

- For installation information, see Fusion Middleware Installation Documentation.
- For upgrade information, see Fusion Middleware 12c Upgrade Documentation.
- For administration-related information, see Fusion Middleware 12c Administration Documentation.
- For release-related information, see Fusion Middleware 12c Release Notes.

## Conventions

The following text conventions are used in this document:

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

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# Introduction to Upgrading Oracle Business Intelligence to 12c

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When you are considering a new release of Oracle Business Intelligence, the tools and documentation required vary, depending on whether you are performing an upgrade or applying a patchset, a bundle patch, or a one-off patch. Upgrading an Oracle Business Intelligence system to 12c requires careful preparation, planning, and testing. Oracle provides tools and technology to automate much of the upgrade process.

Upgrading Oracle Business Intelligence from a previous 12c release to 12.2.1.2 is an in-place upgrade performed by Upgrade Assistant. You install the 12.2.1.2 product distribution in a new Oracle home and then use the Upgrade Assistant to upgrade the existing 12c schemas and domain configuration. You also use the Reconfiguration Wizard to reconfigure the existing 12c domain.

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**Note:** For general information about Fusion Middleware upgrade planning and other upgrade concepts and resources, see the following sections in *Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*:

- [Planning an Upgrade to Oracle Fusion Middleware](#)
  - [Understanding In-Place versus Out-of-Place Upgrades](#)
  - [Understanding the Basic 12c Upgrade Tasks](#)
- 

The following topics describe the concepts related to upgrading Oracle Business Intelligence:

#### [About the Starting Points for Oracle Business Intelligence Upgrade](#)

The supported starting point for upgrading to Oracle Business Intelligence Release 12.2.1.2 is Oracle Business Intelligence Release 12.2.1.0 or higher.

#### [About the Oracle Business Intelligence Standard Topology](#)

The steps to upgrade Oracle Business Intelligence to 12c (12.2.1.2) depend on your existing production topology.

#### [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.

## 1.1 About the Starting Points for Oracle Business Intelligence Upgrade

The supported starting point for upgrading to Oracle Business Intelligence Release 12.2.1.2 is Oracle Business Intelligence Release 12.2.1.0 or higher.

If you are a 11g user (Release 11.1.1.7.0 and above), follow the procedure described in *Migrating from Oracle BI 11g to 12c* in *Oracle Fusion Middleware Oracle Business Intelligence Migration Guide* to migrate your 11g metadata and configuration to the 12.2.1.2 system.

## 1.2 About the Oracle Business Intelligence Standard Topology

The steps to upgrade Oracle Business Intelligence to 12c (12.2.1.2) depend on your existing production topology.

As a result, it is difficult to provide exact upgrade instructions for every possible Oracle Business Intelligence installation. This upgrade documentation provides detailed instructions for upgrading BI and is referred to as standard upgrade topology.

Your actual topology may vary, but the topology described in this guide provide an example that can be used as a guide to upgrade BI.

[Figure 1-1](#) shows the standard upgrade topology for Oracle Business Intelligence.

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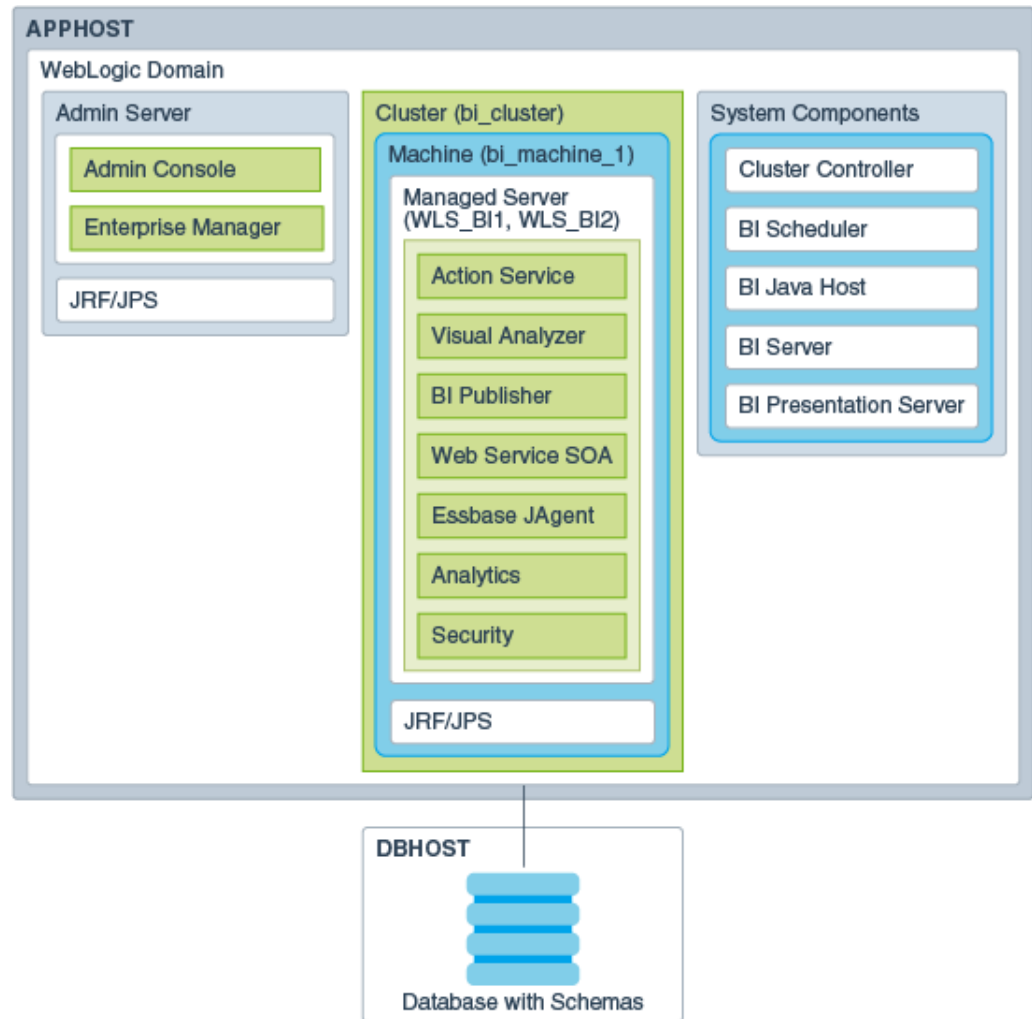
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**Note:** Because you are upgrading from a previous 12c release, the standard topology remains unchanged.

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**Figure 1-1 Oracle Business Intelligence Standard Upgrade Topology**

## 1.3 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 12c (12.2.1.0) components are generally interoperable with other 12c (12.2.1.2) 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 12.2.1.2, see *Products and Features Available in Oracle Fusion Middleware* in *Oracle Fusion Middleware 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](#)

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## Pre-Upgrade Requirements

Before you begin the upgrade to Oracle Business Intelligence 12c (12.2.1.2), you must perform pre-upgrade tasks such as backing up, cloning your current environment, and verifying that your system meets certified requirements.

Upgrade is performed while the servers are down. The pre-upgrade tasks are often time-consuming. Oracle recommends that you plan and prepare your environment for upgrade by completing these pre-upgrade tasks, so that you have a successful upgrade and a limited downtime.

### [Oracle Business Intelligence Pre-Upgrade Checklist](#)

The Oracle Business Intelligence Pre-Upgrade Checklist identifies tasks that can be performed before you begin any upgrade to ensure you have a successful upgrade and limited downtime.

### [Creating a Complete Backup](#)

Back up all system-critical files including all of the databases that host your Oracle Fusion Middleware schemas before you start the upgrade.

### [Cloning Your Production Environment for Testing](#)

Create a copy of your actual production environment, upgrade the cloned environment, verify that the upgraded components work as expected, and then (and only then) upgrade your production environment.

### [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 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.

#### Disabling Internal SSL

You must disable SSL on the internal communication links before you start the upgrade process.

#### Creating a Baseline Report with the Oracle BI Baseline Validation Tool

The Oracle BI Baseline Validation Tool lets you compare two system installations. Run this tool on your pre-upgrade environment to extract result sets from your existing BI deployment and generate comparison files in order to determine whether any changes are needed before making a modified system available to your user community.

## 2.1 Oracle Business Intelligence Pre-Upgrade Checklist

The Oracle Business Intelligence Pre-Upgrade Checklist identifies tasks that can be performed before you begin any upgrade to ensure you have a successful upgrade and limited downtime.

Upgrades are performed while the servers are down. This checklist is meant to identify 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.

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**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.

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**Table 2-1** Tasks to Perform Before You Upgrade to Oracle Business Intelligence 12c (12.2.1.2)

Task	Description
<p><b>Required</b></p> <p>Create a complete backup of your existing environment.</p>	<p>Back up all system-critical files and database(s) that contain any schemas that are to be upgraded. If the upgrade fails, you must restore your pre-upgrade environment and begin the upgrade again.</p> <p>See <a href="#">Creating a Complete Backup</a>.</p> <ul style="list-style-type: none"> <li>Make sure that your backup includes the schema version registry table. See <a href="#">Backing Up the Schema Version Registry Table</a>.</li> <li>If you modified any of the startup scripts in your existing domain, you will need to copy them to temporary directory location (outside of the existing domain) during the upgrade and redeploy them after the upgrade. See <a href="#">Maintaining Custom Domain Environment Settings</a>.</li> </ul>
<p><b>Optional</b></p> <p>Clone your production environment to use as an upgrade testing platform.</p>	<p>In addition to creating a complete backup of your system files, Oracle strongly recommends that you clone your production environment. This environment can be used to test the upgrade.</p> <p>See <a href="#">Cloning Your Production Environment for Testing</a>.</p>

**Table 2-1 (Cont.) Tasks to Perform Before You Upgrade to Oracle Business Intelligence 12c (12.2.1.2)**

Task	Description
<p><b>Required</b></p> <p>Verify that you are installing and upgrading your product on a supported hardware and software configuration.</p> <p><b>CAUTION:</b> 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.</p>	<p>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 12c product distributions.</p> <p>Oracle recommends that you verify this information right before you start the upgrade as the certification requirements are frequently updated.</p> <p><b>Make sure that you have applied the latest patches to your components before you upgrade.</b></p> <p>See <a href="#">Verifying Certification and System Requirements</a>.</p>
<p><b>Required for 32-bit Operating Systems Only</b></p> <p>Migrate to a 64-bit operating system before you can upgrade.</p>	<p>This is required only if you are currently running an unsupported 32-bit operating system.</p> <p>See <a href="#">Migrating from a 32-Bit to a 64-Bit Operating System</a>.</p>
<p><b>Optional</b></p> <p>Update security policy files if you are using enhanced encryption (AES 256).</p>	<p>Some of the security algorithms used in Fusion Middleware 12c require additional policy files for the JDK.</p> <p>If you plan to use enhanced encryption, such as AES 256, Oracle recommends that you apply the latest required policy files to the JDK before you upgrade.</p> <p>See <a href="#">Updating Policy Files when Using Enhanced Encryption (AES 256)</a>.</p>
<p><b>Optional</b></p> <p>Purge any outdated or unused data before you upgrade.</p>	<p>To optimize performance, consider purging data and objects that will not be used in the upgraded environment.</p> <p>Use the purge scripts before you start the instance upgrade to purge the closed BI instances that you do not need in the latest 12c environment.</p> <p>See <a href="#">Purging Unused Data</a>.</p>
<p><b>Optional</b></p> <p>Create a Non-SYSDBA user to run the Upgrade Assistant.</p>	<p>Oracle recommends that you create the FMW user to run Upgrade Assistant. User FMW can run the Upgrade Assistant without system administration privileges.</p> <p>See <a href="#">Creating a Non-SYSDBA User to Run the Upgrade Assistant</a></p>
<p><b>Optional</b></p> <p>Identify which schemas are currently in your domain before you begin.</p>	<p>It is important that you know which schemas are in your pre-upgrade domain before you start the upgrade. You should know the schema owner names and passwords, as well as the versions of each schema.</p> <p>See <a href="#">Identifying Existing Schemas Available for Upgrade</a>.</p>
<p><b>Required</b></p> <p>Disable internal SSL.</p>	<p>It is important that you disable SSL on the internal communication links before you start the upgrade process.</p> <p>See <a href="#">Disabling Internal SSL</a>.</p>

**Table 2-1 (Cont.) Tasks to Perform Before You Upgrade to Oracle Business Intelligence 12c (12.2.1.2)**

Task	Description
<b>Required</b> Create a baseline report with the Oracle BI Baseline Validation tool.	The Oracle BI Baseline Validation Tool allows you to compare two system installations. You must run this tool on your pre-upgrade environment to extract result sets from your existing BI deployment and generate comparison files in order to determine whether any changes are needed before making a modified system available to your user community.  <a href="#">See Creating a Baseline Report with the Oracle BI Baseline Validation Tool.</a>

## 2.2 Creating a Complete Backup

Back up all system-critical files including all of the databases that host your Oracle Fusion Middleware schemas before you start the upgrade.

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.

For more information about creating a backup, see:

- [Backing Up Your Environment in Oracle Fusion Middleware Administering Oracle Fusion Middleware](#)
- [Upgrading and Preparing Your Oracle Databases for 12c in Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware](#)

In addition to creating a complete backup of your system, you must also create a backup of your schema version registry and any custom settings you want to use in your upgraded environment. See the following resources:

### [Backing Up the Schema Version Registry Table](#)

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

### [Maintaining Custom Domain Environment Settings](#)

If you modified any domain generated or server startup scripts in your pre-upgrade environment, it is important to note that these changes are overwritten during the installation, domain upgrade, and reconfiguration operations.

### 2.2.1 Backing Up the Schema Version Registry Table

Your system backup must include the `SYSTEM.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. Make sure you back up your existing database schemas and the schema version registry before you run the Upgrade Assistant.

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**Note:** Performing these backups prior to performing a schema upgrade is a prerequisite for running the Upgrade Assistant. During the upgrade you will be required to acknowledge that backups have been performed.

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## 2.2.2 Maintaining Custom Domain Environment Settings

If you modified any domain generated or server startup scripts in your pre-upgrade environment, it is important to note that these changes are overwritten during the installation, domain upgrade, and reconfiguration operations.

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. Any custom settings you add to this file are preserved during the domain upgrade operation and are carried over to the remote servers when using the `pack` and `unpack` commands.

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 `domain_home/bin` directory.

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**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 Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

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## 2.3 Cloning Your Production Environment for Testing

Create a copy of your actual production environment, upgrade the cloned environment, verify that the upgraded components work as expected, and then (and only then) upgrade your production environment.

Cloning your production environment for testing is recommended, but not required.

Upgrades cannot be reversed. In most cases, if an error occurs, you must stop the upgrade and restore the entire environment from backup and begin the upgrade process from the beginning. Identifying potential upgrade issues in a development environment can eliminate unnecessary downtime.

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**Note:** It is beyond the scope of this document to describe the cloning procedures for all components and operating systems. Cloning procedures are component and operating system-specific. At a high level, you install the pre-upgrade version of your component domain on a test machine, create the required schemas using the Repository Creation Utility (RCU), and perform the upgrade.

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Additional benefits of running an upgrade in a cloned production environment include the following:

- Uncover and correct any upgrade issues.
- Practice completing an end-to-end upgrade.
- Understand the upgrade performance and how purge scripts can help.
- Understand the time required to complete the upgrade.
- Understand the database resource usage (such as temporary tablespace; PGA, and so on).

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**Note:** You can run the pre-upgrade Readiness Check on the cloned production environment to help identify potential upgrade issues with your data, but you must perform a complete test upgrade on a cloned environment to ensure a successful upgrade.

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## 2.4 Verifying Certification and System Requirements

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

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**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.

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**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.

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### [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 12c.

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

Before you can install any Oracle Fusion Middleware product distributions, you must download and install a supported JDK on your system.

## 2.4.1 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. For more information, see the Certification Matrix for 12c (12.2.1.2).

## 2.4.2 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 12c (12.2.1.2) 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).

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**Note:** When you install the Oracle Fusion Middleware Release 12c 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 12c files and directories.

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

### Migrating from a 32-Bit to a 64-Bit Operating System

If you have a 32-bit operating system, then you must migrate your 32-bit environment to a 64-bit software environment before you upgrade.

### 2.4.2.1 Migrating from a 32-Bit to a 64-Bit Operating System

If you have a 32-bit operating system, then you must migrate your 32-bit environment to a 64-bit software environment before you upgrade.

Make sure to validate the migration to ensure all your Oracle Fusion Middleware 11g software is working properly on the 64-bit machine, and only then perform the upgrade to Oracle Fusion Middleware 12c.

In these tasks, *host* refers to the 32-bit source machine and *target* refers to the new 64-bit target machine.

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**Note:** These steps assume that your database is located on a separate host and will not be moved.

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Upgrading an operating system typically involves the following:

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**Caution:** These steps are provided as an example of the operating system upgrade process and may or may not include all of the procedures you must perform to update your specific operating system. Consult your operating system's upgrade documentation for more information.

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#### [Procure the Hardware That Supports the Upgrade's 64-bit Software Requirement](#)

Make sure that you have supported target hardware in place before you begin the upgrade process.

#### [Stop All Processes](#)

Before upgrading, you must stop all processes, including Managed Servers, the Administration Server, and Node Manager, if they are started on the host.

#### [Back Up All Files from the 32-bit Host Machine](#)

Make sure that you have created a complete backup of your entire 11g deployment before you begin the upgrade process. These files can be used if there is an issue during the migration and you have to restart the process.

#### [Set Up the Target 64-bit Machine with the 11g Host Name and IP Address](#)

The host name and IP address of the target machine must be made identical to the host. This requires you to change the IP address and name of the source machine or decommission the source machine to avoid conflicts in the network.

#### [Restore the 11g Backup from 32-bit Host to 64-bit Host](#)

Restore the files you backed from the 32-bit host using the same directory structure that was used in 11g. The directory structure on the target machine must be identical to the structure of the host machine.

#### [Install the 12c Product Distributions on the Target Machine](#)

Oracle recommends an Out-of-Place approach for upgrade. Therefore, you must install the 12c product distributions in a new Oracle home on the target machine.

### Upgrade the Target 64-bit Environment Using the Standard Upgrade Procedure

After installing the product on the target machine, you must upgrade each product component individually using an upgrade utility specified in the component-specific upgrade guide and complete any post-upgrade tasks.

#### 2.4.2.1.1 Procure the Hardware That Supports the Upgrade's 64-bit Software Requirement

Make sure that you have supported target hardware in place before you begin the upgrade process.

#### 2.4.2.1.2 Stop All Processes

Before upgrading, you must stop all processes, including Managed Servers, the Administration Server, and Node Manager, if they are started on the host.

##### Stop the Managed Servers

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

- (UNIX) `DOMAIN_HOME/bin/stopManagedWebLogic.sh`  
`managed_server_name admin_url`
- (Windows) `DOMAIN_HOME\bin\stopManagedWebLogic.cmd`  
`managed_server_name admin_url`

When prompted, enter your user name and password.

##### 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) `DOMAIN_HOME/bin/stopWebLogic.sh`
- (Windows) `DOMAIN_HOME\bin\stopWebLogic.cmd`

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

##### Stop Node Manager

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

Alternatively, after having set the `nodemanager.properties` attribute `QuitEnabled` to `true` (the default is `false`), you can use WLST to connect to Node Manager and shut it down. For more information, see `stopNodeManager` in *Oracle Fusion Middleware WLST Command Reference for WebLogic Server*.

#### 2.4.2.1.3 Back Up All Files from the 32-bit Host Machine

Make sure that you have created a complete backup of your entire 11g deployment before you begin the upgrade process. These files can be used if there is an issue during the migration and you have to restart the process.

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---

**Note:** If the upgrade from 32-bit to 64-bit takes place on the same machine, there is a risk of corrupting the source environment if the upgrade fails.

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For more information on backing up your 11g files, see [Backing Up Your Environment](#) in *Oracle Fusion Middleware Administrator's Guide*.

During the upgrade you must have access to the contents of the following:

- 11g Domain Home
- 11g /nodemanager directory located in `$ORACLE_HOME/wlserver/common/`

Some of the backup and recovery procedures described in [Backing Up Your Environment](#) in *Oracle Fusion Middleware Administrator's Guide* are product-specific. Do not proceed with the upgrade until you have a complete backup.

#### **2.4.2.1.4 Set Up the Target 64-bit Machine with the 11g Host Name and IP Address**

The host name and IP address of the target machine must be made identical to the host. This requires you to change the IP address and name of the source machine or decommission the source machine to avoid conflicts in the network.

The process of changing an IP address and host name varies by operating system. Consult your operating system's administration documentation for more information.

#### **2.4.2.1.5 Restore the 11g Backup from 32-bit Host to 64-bit Host**

Restore the files you backed from the 32-bit host using the same directory structure that was used in 11g. The directory structure on the target machine must be identical to the structure of the host machine.

For detailed information about restoring your 11g files to the 64-bit target machine, see [Recovering Your Environment](#) in *Oracle Fusion Middleware Administrator's Guide*.

#### **2.4.2.1.6 Install the 12c Product Distributions on the Target Machine**

Oracle recommends an Out-of-Place approach for upgrade. Therefore, you must install the 12c product distributions in a new Oracle home on the target machine.

Refer to the component-specific installation guides for the component(s) you are installing.

#### **2.4.2.1.7 Upgrade the Target 64-bit Environment Using the Standard Upgrade Procedure**

After installing the product on the target machine, you must upgrade each product component individually using an upgrade utility specified in the component-specific upgrade guide and complete any post-upgrade tasks.

For a complete upgrade procedure, see the component-specific upgrade guide for the component(s) you are upgrading.

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**Note:** The Node Manager upgrade procedure requires access to the original Node Manager files. Use the 11g Node Manager files that you backed up from the 32-bit source machine as part of [Back Up All Files from the 32-bit Host Machine](#).

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## **2.4.3 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 12c.

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. For more information, see the Certification Matrix for 12c (12.2.1.2).

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**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 Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*

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

Before you can install any Oracle Fusion Middleware product distributions, you must download and install a supported JDK on your system.

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.

At the time this document was published, the certified JDK for 12c (12.2.1.2) was 1.8.0\_101.

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*.

## 2.5 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 12c require additional policy files for the JDK. For more information, see [Java Cryptography Architecture Oracle Providers Documentation](#).

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**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.

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## 2.6 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.

## 2.7 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 in this section must be granted to user `FMW` before starting the Upgrade Assistant.

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**Notes:** If you created the non-SYSDBA user `FMW` in a previous release, you must drop and recreate this user before starting the upgrade. Running the Upgrade Assistant with an older `FMW` user may lead to a failed upgrade as new privileges may have been added. Oracle recommends that you drop and recreate the user instead of modifying the existing `FMW` user.

By default, the `v$xsatrans$` 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 `v$xsatrans$` table is required only for Oracle Identity Manager. If you do not require Oracle Identity Manager for configuration, or if you do not have the `v$xsatrans$` table, then remove the following line from the script:

```
grant select on v$xsatrans$ to FMW with grant option;
```

---

---

In the example below, `welcome1` is the password. Make sure that you specify your actual password when granting privileges.

```
create user FMW identified by welcome1;
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_DATA_FILES to FMW with grant option;
grant select on SYS.V_$ASM_DISKGROUP to FMW with grant option;
grant select on v$xsatrans$ 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;

```

**Note:**

**Oracle Database 11.2.0.3 Database Users ONLY:** You must apply **Oracle Patch 13036331** before you begin the upgrade. Go to My Oracle Support to download the patch.

If you do not apply this patch, then you will have to grant additional privileges for some schemas.

## 2.8 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 account 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 the value in the `VERSION` column is at 11.1.1.7.0 or higher, and the `STATUS` column value is `VALID`, then the schema is supported for upgrade.

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 creating new 12c schemas.

---

---

**Notes:**

- If your existing schemas are not at a supported version, then you must upgrade them to a supported version before using the 12c (12.2.1.2) 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 11g, make sure that you create a new OPSS schema before you perform the upgrade. After the upgrade, the OPSS schema will remain an LDAP-based store.
  - You can only upgrade schemas for products that are available for upgrade in the Oracle Fusion Middleware release 12c (12.2.1.2). **Do not attempt to upgrade a domain that includes components that are not yet available for upgrade to 12c (12.2.1.2).**
- 
- 

## 2.9 Disabling Internal SSL

You must disable SSL on the internal communication links before you start the upgrade process.

To disable internal SSL:

1. Stop the system by entering the following command:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/stop.sh
```

On Windows operating system:



```
DOMAIN_HOME\bitools\bin\stop.cmd
```

2. Enter the following command to disable SSL on WebLogic internal channels and internal components:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/ssl.sh internalssl false
```

On Windows operating system:

```
DOMAIN_HOME\bitools\bin\ssl.cmd internalssl false
```

3. Restart the system by entering the following command:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/start.sh
```

On Windows operating system:

```
DOMAIN_HOME\bitools\bin\start.cmd
```

## 2.10 Creating a Baseline Report with the Oracle BI Baseline Validation Tool

The Oracle BI Baseline Validation Tool lets you compare two system installations. Run this tool on your pre-upgrade environment to extract result sets from your existing BI deployment and generate comparison files in order to determine whether any changes are needed before making a modified system available to your user community.

---

**Note:** You can download the Oracle BI Validation Tool along with the other Oracle Business Intelligence download on the Oracle Technology Network. See the Readme document that is included in the Oracle BI Validation Tool download for more information. For specific information on the distributions you want to download for each product, see Oracle Fusion Middleware Download, Installation, and Configuration Readme Files page.

---

To know more about using the Oracle BI Baseline Validation Tool, see *Comparing Oracle Business Intelligence Deployments Using the Oracle Business Intelligence Baseline Validation Tool*. This documentation is available with the Oracle BI Baseline Validation Tool.



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# Upgrading Oracle Business Intelligence from a Previous 12c Release

This chapter contains the procedure to upgrade Oracle Business Intelligence from Release 12.2.1.x to Release 12.2.1.2. The upgrade is performed in-place, that is, the upgrade operations are performed on the existing 12.2.1.x domain.

If you are upgrading from a 11g release, such as 11.1.1.7.x, follow the procedure described in Migrating from Oracle BI 11g to 12c in *Oracle Fusion Middleware Oracle Business Intelligence Migration Guide*.

---

**Note:** You can use a current OBIS (Oracle Business Intelligence Server) metadata file with past versions of Oracle Business Intelligence. As a result, you can open a repository (RPD), XUDML (Oracle BI Server XML API), or BAR (BI archive) file from an Oracle BI EE version such as 12.2.1.3, and modify the file with the 12.2.1.1 Administration Tool, biserverxmlexec, or other tools and utilities. You can also use older OBIS metadata files with the current version of Oracle BI EE.

---

## About the Oracle Business Intelligence Upgrade Process

Review the flowchart and roadmap for an overview of the upgrade process for Oracle Business Intelligence upgrade from a previous 12c release.

## Installing the Product Distributions

Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence 12c (12.2.1.2) distributions on the target system and install them using Oracle Universal Installer.

## Running a Pre-Upgrade Readiness Check

To identify potential issues with the upgrade, Oracle recommends that you run a readiness check before you start the upgrade process. Be aware that the readiness check may not be able to discover all potential issues with your upgrade. An upgrade may still fail, even if the readiness check reports success.

## Stopping Servers and Processes

Before running the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all processes and servers, including the Administration server and any managed servers.

## Upgrading Product Schemas

After stopping servers and processes, use the Upgrade Assistant to upgrade supported product schemas to the current release of Oracle Fusion Middleware.

#### Backing up the mapViewerConfig.xml File

The mapViewerConfig.xml file is overwritten by the reconfiguration templates when you run the Reconfiguration Wizard. Therefore, you must back up the mapViewerConfig.xml file before reconfiguring your 12.2.1.0 domain.

#### Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.2).

#### Restoring the mapViewerConfig.xml File

The mapViewerConfig.xml file is overwritten when you run the Reconfiguration Wizard on your domain. You can know that the mapViewerConfig.xml file is overwritten by checking its file size. You must restore the original file that you backed up before upgrading your domain with the Upgrade Assistant.

#### Upgrading Domain Component Configurations

After reconfiguring the domain, use the Upgrade Assistant to upgrade the domain *component* configurations inside the domain to match the updated domain configuration.

#### Verifying the Domain-specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, log in to the Administration console and the Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.2.

#### Starting Servers and Processes

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

## 3.1 About the Oracle Business Intelligence Upgrade Process

Review the flowchart and roadmap for an overview of the upgrade process for Oracle Business Intelligence upgrade from a previous 12c release.

**Figure 3-1 Upgrade Process Flowchart for Oracle Business Intelligence from a Previous 12c Release**

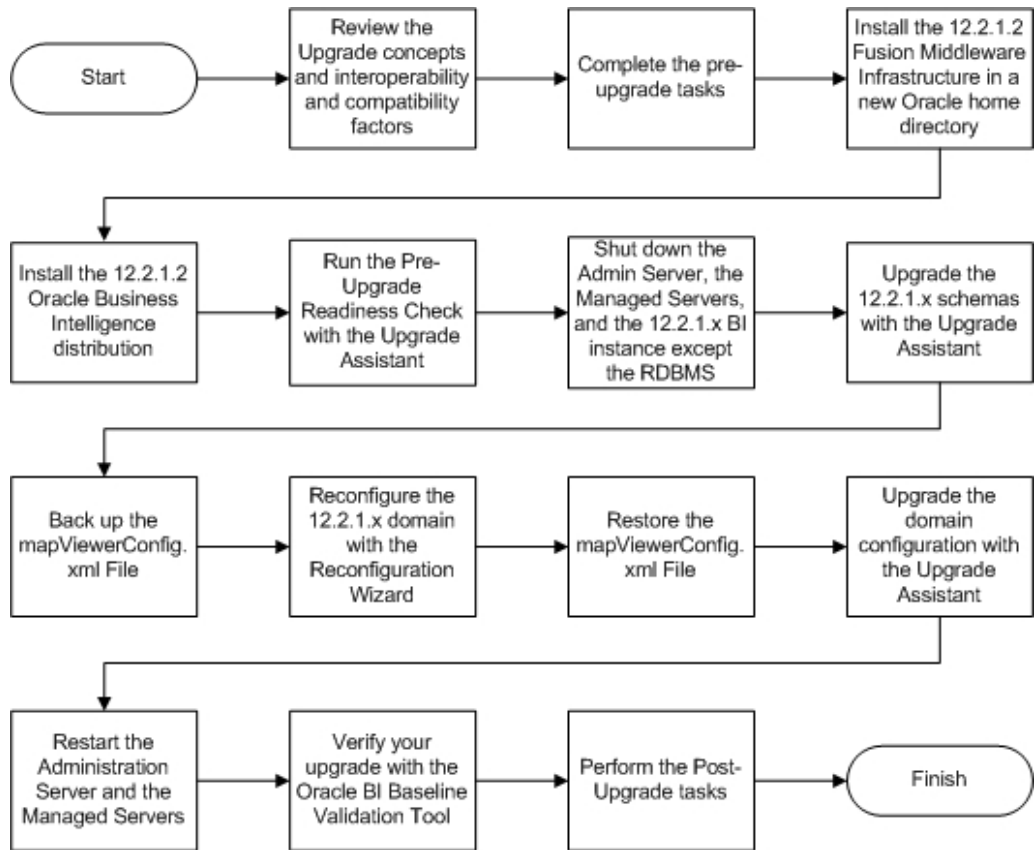


Table 3-1 lists the high-level steps that you need to perform to upgrade to Oracle BI Release 12.2.1.2:

**Table 3-1 Tasks for Upgrading Oracle Business Intelligence from a Previous 12c Release**

Task	Description
<p><b>Optional</b></p> <p>Learn about the interoperability and compatibility factors that could affect how you upgrade to BI 12.2.1.2.</p>	<p>It is important to understand how two or more Oracle Fusion Middleware products of the same version or different versions work together (interoperate) in a supported Oracle Fusion Middleware configuration. You can learn more about interoperability and compatibility in Oracle® Fusion Middleware Understanding Interoperability and Compatibility.</p>
<p><b>Required</b></p> <p>If you have not done so already, review the introductory topics in this guide and complete the required pre-upgrade tasks.</p>	<p>The pre-upgrade tasks include cloning your production environment, verifying system requirements and certifications, purging unused data, and creating non-SYSDBA user.</p> <p>For a complete list of pre-upgrade tasks, see <a href="#">Pre-Upgrade Requirements</a></p>

**Table 3-1 (Cont.) Tasks for Upgrading Oracle Business Intelligence from a Previous 12c Release**

Task	Description
<p><b>Required</b> Download and install the 12.2.1.2 Fusion Middleware Infrastructure and Oracle Business Intelligence distributions.</p>	<p>The Infrastructure distribution combines the WebLogic Server and the Java Required Files (JRF) that are required to set up the foundation to install other Fusion Middleware products.</p> <p>As per the upgrade topology defined in this guide, you must install the Infrastructure in a new Oracle home.</p> <p>The Oracle Business Intelligence distribution packs BI EE, Publisher, and Essbase.</p> <p>You must install BI in the Oracle home that is created when you installed the 12.2.1.2 Infrastructure. To install the product distributions, follow the procedure described in <a href="#">Installing the Product Distributions</a>.</p>
<p><b>Optional</b> Run the Readiness Check.</p>	<p>See <a href="#">Running a Pre-Upgrade Readiness Check</a>.</p>
<p><b>Required</b> Shut down the servers and BI instance.</p>	<p>Before starting the upgrade process, shut down the Administration Server, the Managed Servers, and your 12.2.1.x BI instance.</p> <p>However, keep the database (RDBMS) running.</p> <p>See <a href="#">Stopping Servers and Processes</a>.</p>
<p><b>Required</b> Upgrade the 12.2.1.x schemas with the Upgrade Assistant.</p>	<p>The schemas you created during the 12.2.1.x installation are supported in 12.2.1.2. Therefore, you don't need to create the schemas again.</p> <p>You must upgrade all the schemas within your domain using the Upgrade Assistant. For the complete procedure, see <a href="#">Upgrading Product Schemas Using the Upgrade Assistant</a>.</p>
<p><b>Required</b> Backup the mapViewerConfig.xml File.</p>	<p>The mapViewerConfig.xml file is overwritten by the reconfiguration templates when you run the Reconfiguration Wizard. Therefore, you must back up the mapViewerConfig.xml file before reconfiguring your 12.2.1.0 domain. See <a href="#">Backing up the mapViewerConfig.xml File</a>.</p>
<p><b>Required</b> Reconfigure the 12.2.1.x domain with the Reconfiguration Wizard.</p>	<p>When you run the Reconfiguration Wizard on your existing domain, it prepares your domain for upgrade by selecting and applying the reconfiguration templates. It also tests the JDBC data sources and component schemas that are present within your domain.</p> <p>To reconfigure you domain, follow the procedure described in <a href="#">Reconfiguring the BI Domain with the Reconfiguration Wizard</a>.</p>
<p><b>Required</b> Restore the mapViewerConfig.xml File.</p>	<p>You must restore the original file that you backed up before upgrading your domain with the Upgrade Assistant.</p> <p>See <a href="#">Restoring the mapViewerConfig.xml File</a>.</p>

**Table 3-1 (Cont.) Tasks for Upgrading Oracle Business Intelligence from a Previous 12c Release**

Task	Description
<p><b>Required</b> Upgrade the 12.2.1.x domain configurations with the Upgrade Assistant.</p>	<p>After you have reconfigured your 12.2.1.x domain, you must run the Upgrade Assistant to upgrade all configurations used by your 12.2.1.x domain.</p> <p>You can see all the components within your domain that will be upgraded on the Component List screen when you run the Upgrade Assistant. For the complete procedure, see <a href="#">Upgrading Domain Components Using the Upgrade Assistant</a>.</p>
<p><b>Required</b> Restart the servers and 12.2.1.2 BI instance.</p>	<p>The upgrade process is complete. You can now restart the Administration Server, the Managed Servers, and your 12.2.1.2 BI instance.</p> <p>See <a href="#">Starting Servers and Processes</a>.</p>
<p><b>Required</b> Verify your upgrade.</p>	<p>It is important to compare your 12.2.1.x and 12.2.1.2 environments and verify that the data and configuration settings are consistent in the newly upgraded environment.</p> <p>Oracle provides the BI Baseline Validation Tool that you can use to compare and verify the upgrade.</p>
<p><b>Required</b> Perform the post-upgrade tasks.</p>	<p>For a list of post-upgrade tasks, see <a href="#">Post-Upgrade Tasks</a>.</p>

## 3.2 Installing the Product Distributions

Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Business Intelligence 12c (12.2.1.2) distributions on the target system and install them using Oracle Universal Installer.

---

**Note:** You must install the Oracle Fusion Middleware Infrastructure distribution first before installing other Fusion Middleware products, when Infrastructure is required for the upgrade.

---

To install the 12c (12.2.1.2) distributions:

1. Sign in to the target system where you want to install the 12c (12.2.1.2) product distribution.
2. Download the following 12c (12.2.1.2) product distributions from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
  - Oracle Fusion Middleware Infrastructure (fmw\_12.2.1.2.0\_infrastructure\_generic.jar)
  - Oracle Business Intelligence (UNIX: fmw\_12.2.1.2.0\_bi\_platform\_linux64.bin), (Windows: setup\_fmw\_12.2.1.2.0\_bi\_platform\_win64.exe)
3. Change to the directory where you downloaded the 12c (12.2.1.2) product distribution.

4. Start the installation program for Oracle Fusion Middleware Infrastructure:
  - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.2.0_infrastructure_generic.jar`
  - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.2.0_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 **Skip Auto Updates**. Options are:
  - **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:
  - For Infrastructure, select **Fusion Middleware Infrastructure**
  - For Oracle Business Intelligence, select **BI Platform Distribution with Samples**

Click **Next**.

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 gets 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 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) `./fmw_12.2.1.2.0_bi_platform_linux64.bin`

(Windows) `setup_fmw_12.2.1.2.0_bi_platform_win64.exe`

### 3.3 Running a Pre-Upgrade Readiness Check

To identify potential issues with the upgrade, Oracle recommends that you run a readiness check before you start the upgrade process. Be aware that the readiness check may not be able to discover all potential issues with your upgrade. An upgrade may still fail, even if the readiness check reports success.

#### About Running a Pre-Upgrade Readiness Check

You can run the Upgrade Assistant in `-readiness` mode to detect issues before you perform the actual upgrade. You can run the readiness check in GUI mode using the Upgrade Assistant or in silent mode using a response file.

#### Starting the Upgrade Assistant in Readiness Mode

Use the `-readiness` parameter to start the Upgrade Assistant in readiness mode.

#### Performing a Readiness Check with the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to complete the pre-upgrade readiness check.

#### Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine if you need to take any action for a successful upgrade.

#### 3.3.1 About Running a Pre-Upgrade Readiness Check

You can run the Upgrade Assistant in `-readiness` mode to detect issues before you perform the actual upgrade. You can run the readiness check in GUI mode using the Upgrade Assistant or in silent mode using a response file.

The Upgrade Assistant readiness check performs a read-only, pre-upgrade review of your Fusion Middleware schemas and WebLogic domain configurations that are at a supported starting point. The review is a read-only operation.

The readiness check generates a formatted, time-stamped readiness report so you can address potential issues before you attempt the actual upgrade. If no issues are detected, you can begin the upgrade process. Oracle recommends that you read this report thoroughly before performing an upgrade.

You can run the readiness check while your existing Oracle Fusion Middleware domain is online (while other users are actively using it) or offline.

You can run the readiness check any number of times before performing any actual upgrade. However, do not run the readiness check after an upgrade has been performed, as the report results may differ from the result of pre-upgrade readiness checks.

---

---

**Note:**

To prevent performance from being affected, Oracle recommends that you run the readiness checks during off-peak hours.

---

---

### 3.3.2 Starting the Upgrade Assistant in Readiness Mode

Use the `-readiness` parameter to start the Upgrade Assistant in readiness mode.

To perform a readiness check on your pre-upgrade environment with the Upgrade Assistant:

1. Go to the `oracle_common/upgrade/bin` directory:
  - (UNIX) `ORACLE_HOME/oracle_common/upgrade/bin`
  - (Windows) `ORACLE_HOME\oracle_common\upgrade\bin`
2. Start the Upgrade Assistant.
  - (UNIX) `./ua -readiness`
  - (Windows) `ua.bat -readiness`

---

---

**Note:** If the `DISPLAY` environment variable is not set up properly to allow for GUI mode, you may encounter the following error:

```
Xlib: connection to ":1.0" refused by server
Xlib: No protocol specified
```

To resolve this issue, set the `DISPLAY` environment variable to the system name or IP address of your local workstation, and rerun Upgrade Assistant.

If you continue to receive these errors after setting `DISPLAY`, try launching another GUI tool, such as `vncconfig`. If you see the same errors, your `DISPLAY` environment variable may still not be set correctly.

---

---

For information about other parameters that you can specify on the command line, see:

## Upgrade Assistant Command-Line Parameters

### 3.3.2.1 Upgrade Assistant Command-Line Parameters

When you start the Upgrade Assistant from the command-line, you can specify additional parameters.

**Table 3-2 Upgrade Assistant Command Line Parameters**

Parameter	Required or Optional	Description
-readiness	Required for readiness checks <b>NOTE:</b> 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 the Upgrade Assistant in <i>silent mode</i> (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.

**Table 3-2 (Cont.) Upgrade Assistant Command Line Parameters**

Parameter	Required or Optional	Description
<code>-logLevel attribute</code>	Optional	<p>Sets the logging level, specifying one of the following attributes:</p> <ul style="list-style-type: none"> <li>• TRACE</li> <li>• NOTIFICATION</li> <li>• WARNING</li> <li>• ERROR</li> <li>• INCIDENT_ERROR</li> </ul> <p>The default logging level is NOTIFICATION.</p> <p>Consider setting the <code>-logLevel TRACE</code> 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 <code>-logLevel TRACE</code> is used.</p>
<code>-logDir location</code>	Optional	<p>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.</p> <p>The default locations are:</p> <p>(UNIX) <code>ORACLE_HOME/oracle_common/upgrade/logs</code>  <code>ORACLE_HOME/oracle_common/upgrade/temp</code></p> <p>(Windows) <code>ORACLE_HOME\oracle_common\upgrade\logs</code>  <code>ORACLE_HOME\oracle_common\upgrade\temp</code></p>
<code>-help</code>	Optional	Displays all of the command-line options.

### 3.3.3 Performing a Readiness Check with the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to complete the pre-upgrade readiness check.

Readiness checks are performed only on schemas or component configurations that are at a supported upgrade starting point.

To complete the readiness check:

1. On the Welcome screen, review information about the readiness check. Click **Next**.
2. On the Readiness Check Type screen, select the readiness check that you want to perform:

- **Individually Selected Schemas** allows you to select individual schemas for review before upgrade. The readiness check reports whether a schema is supported for an upgrade or where an upgrade is needed.

When you select this option, the screen name changes to Selected Schemas.

- **Domain Based** allows the Upgrade Assistant to discover and select all upgrade-eligible schemas or component configurations in the domain specified in the **Domain Directory** field.

When you select this option, the screen name changes to Schemas and Configuration.

Leave the default selection if you want the Upgrade Assistant to check all schemas and component configurations at the same time, or select a specific option:

- **Include checks for all schemas** to discover and review all components that have a schema available to upgrade.
- **Include checks for all configurations** to review component configurations for a managed WebLogic Server domain.

Click **Next**.

3. If you selected **Individually Selected Schemas**: On the Available Components screen, select the components that have a schema available to upgrade for which you want to perform a readiness check.

If you select a component that has dependent components, those components are automatically selected. For example, if you select Oracle Platform Security Services, Oracle Audit Services is automatically selected.

Depending on the components you select, additional screens may display. For example, you may need to:

- Specify the domain directory.
- Specify schema credentials to connect to the selected schema: **Database Type**, **DBA User Name**, and **DBA Password**. Then click **Connect**.

---

**CAUTION:** Oracle database is the default database type. Make sure that you select the correct database type before you continue. If you discover that you selected the wrong database type, do not go back to this screen to change it to the correct type. Instead, close the Upgrade Assistant and restart the readiness check with the correct database type selected to ensure that the correct database type is applied to all schemas.

---

- Select the **Schema User Name** and specify the **Schema Password**.

Click **Next** to start the readiness check.

4. On the Readiness Summary screen, review the summary of the readiness checks performed based on your selections.

If you want to save your selections to a response file to run the Upgrade Assistant again later in response (or silent) mode, click **Save Response File** and provide the location and name of the response file. A silent upgrade performs exactly the same function that the Upgrade Assistant performs, but you do not have to manually enter the data again.

For a detailed report, click **View Log**.

Click **Next**.

5. On the Readiness Check screen, review the status of the readiness check. The process can take several minutes.

If you are checking multiple components, the progress of each component displays in its own progress bar in parallel.

When the readiness check is complete, click **Continue**.

6. On the End of Readiness screen, review the results of the readiness check (**Readiness Success** or **Readiness Failure**):
  - If the readiness check is successful, click **View Readiness Report** to review the complete report. Oracle recommends that you review the Readiness Report before you perform the actual upgrade even when the readiness check is successful. Use the **Find** option to search for a particular word or phrase within the report. The report also indicates where the completed Readiness Check Report file is located.
  - If the readiness check encounters an issue or error, click **View Log** to review the log file, identify and correct the issues, and then restart the readiness check. The log file is managed by the command line options you set.

### 3.3.4 Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine if you need to take any action for a successful upgrade.

The format of the readiness report file is:

```
readiness_timestamp.txt
```

where *timestamp* indicates the date and time of when the readiness check was run.

A readiness report contains the following information:

**Table 3-3 Readiness Report Elements**

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the Upgrade readiness check passed or completed with one or more errors.	If the report completed with one or more errors, search for FAIL and correct the failing issues before attempting to upgrade. You can re-run the readiness check as many times as necessary before an upgrade.
Timestamp	The date and time that the report was generated.	No action required.

**Table 3-3 (Cont.) Readiness Report Elements**

Report Information	Description	Required Action
Log file location <i>ORACLE_HOME</i> / oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Readiness report location <i>ORACLE_HOME</i> / oracle_common/upgrade/ logs	The directory location of the generated readiness report.	No action required.
Names of components that were checked	The names and versions of the components included in the check and status.	If your domain includes components that cannot be upgraded to this release, such as SOA Core Extension, then do not attempt an upgrade.
Names of schemas that were checked	The names and current versions of the schemas included in the check and status.	Review the version numbers of your schemas. If your domain includes schemas that cannot be upgraded to this release, then do not attempt an upgrade.
Individual Object Test Status: FAIL	The readiness check test detected an issue with a specific object.	Do not upgrade until all failed issues have been resolved.
Individual Object Test Status: PASS	The readiness check test detected no issues for the specific object.	If your readiness check report shows only the PASS status, then you can upgrade your environment. Note, however, that the Readiness Check cannot detect issues with externals such as hardware or connectivity during an upgrade. You should always monitor the progress of your upgrade.
Completed Readiness Check of <Object> Status: FAILURE	The readiness check detected one or more errors that must be resolved for a particular object such as a schema, an index or datatype.	Do not upgrade until all FAILED issues have been resolved.
Completed Readiness Check of <Object> Status: SUCCESS	The readiness check test detected no issues.	No action required.

Here is a sample Readiness Report file. Your report may or may not include all of these checks.

```
Upgrade readiness check completed with one or more errors.
```

```
This readiness check report was created on Tue May 30 11:15:52 EDT 2016
Log file is located at: ORACLE_HOME/oracle_common/upgrade/logs/
ua2016-05-30-11-14-06AM.log
Readiness Check Report File: ORACLE_HOME/oracle_common/upgrade/logs/
readiness2016-05-30-11-15-52AM.txt
```

```
Starting readiness check of components.
```

```

Oracle Metadata Services
  Starting readiness check of Oracle Metadata Services.
    Schema User Name: DEV11_MDS
    Database Type: Oracle Database
    Database Connect String: machinename@yourcompany.com
    VERSION Schema DEV11_MDS is currently at version 12.1.1.1.0. Readiness checks
will now be performed.
  Starting schema test: TEST_REQUIRED_TABLES Test that the schema contains all
the required tables
  Completed schema test: TEST_REQUIRED_TABLES --> Test that the schema contains all
the required tables +++ PASS
  Starting schema test: TEST_REQUIRED_PROCEDURES Test that the schema contains
all the required stored procedures
    EXCEPTION Schema is missing a required procedure: GETREPOSITORYFEATURES
  Completed schema test: TEST_REQUIRED_PROCEDURES --> Test that the schema contains
all the required stored procedures +++ FAIL
  Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains all the
required database views
  Completed schema test: TEST_REQUIRED_VIEWS --> Test that the schema contains all
the required database views +++ PASS
  Starting index test for table MDS_ATTRIBUTES: TEST_REQUIRED_INDEXES --> Test
that the table contains all the required indexes
  Completed index test for table MDS_ATTRIBUTES: TEST_REQUIRED_INDEXES --> Test
that the table contains all the required indexes +++ PASS
  Starting index test for table MDS_COMPONENTS: TEST_REQUIRED_INDEXES --> Test
that the table contains all the required indexes
  Completed index test for table MDS_TXN_LOCKS: TEST_REQUIRED_INDEXES --> Test that
the table contains all the required indexes +++ PASS
  Starting schema test: TEST_REQUIRED_TRIGGERS Test that the schema has all the
required triggers
  Completed schema test: TEST_REQUIRED_TRIGGERS --> Test that the schema has all
the required triggers +++ PASS
  Starting schema test: TEST_MISSING_COLUMNS Test that tables and views are not
missing any required columns
  Completed schema test: TEST_MISSING_COLUMNS --> Test that tables and views are
not missing any required columns +++ PASS
  Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does not
contain any unexpected tables
  Completed schema test: TEST_UNEXPECTED_TABLES --> Test that the schema does not
contain any unexpected tables +++ PASS
  Starting schema test: TEST_UNEXPECTED_PROCEDURES Test that the schema does not
contain any unexpected stored procedures
  Completed schema test: TEST_UNEXPECTED_PROCEDURES --> Test that the schema does
not contain any unexpected stored procedures +++ PASS
  Starting schema test: TEST_UNEXPECTED_VIEWS Test that the schema does not
contain any unexpected views
  Completed schema test: TEST_UNEXPECTED_VIEWS --> Test that the schema does not
contain any unexpected views +++ PASS
  Starting index test for table MDS_ATTRIBUTES: TEST_UNEXPECTED_INDEXES --> Test
that the table does not contain any unexpected indexes
  Completed index test for table MDS_ATTRIBUTES: TEST_UNEXPECTED_INDEXES --> Test
that the table does not contain any unexpected indexes +++ PASS
  Completed index test for table MDS_LABELS: TEST_UNEXPECTED_INDEXES --> Test that
the table does not contain any unexpected indexes +++ PASS
  Starting index test for table MDS_LARGE_ATTRIBUTES: TEST_UNEXPECTED_INDEXES -->
Test that the table does not contain any unexpected indexes
  Starting schema test: TEST_UNEXPECTED_TRIGGERS Test that the schema does not
contain any unexpected triggers
  Completed schema test: TEST_UNEXPECTED_TRIGGERS --> Test that the schema does not
contain any unexpected triggers +++ PASS
  Starting schema test: TEST_UNEXPECTED_COLUMNS Test that tables and views do not

```



```

contain any unexpected columns
  Completed schema test: TEST_UNEXPECTED_COLUMNS --> Test that tables and views do
not contain any unexpected columns +++ PASS
  Starting datatype test for table MDS_ATTRIBUTES: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
  Completed datatype test for table MDS_ATTRIBUTES: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
  Starting datatype test for table MDS_COMPONENTS: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
  Starting permissions test: TEST_DBA_TABLE_GRANTS Test that DBA user has
privilege to view all user tables
  Completed permissions test: TEST_DBA_TABLE_GRANTS --> Test that DBA user has
privilege to view all user tables +++ PASS
  Starting schema test: TEST_ENOUGH_TABLESPACE Test that the schema tablespaces
automatically extend if full
  Completed schema test: TEST_ENOUGH_TABLESPACE --> Test that the schema
tablespaces automatically extend if full +++ PASS
  Starting schema test: TEST_USER_TABLESPACE_QUOTA Test that tablespace quota for
this user is sufficient to perform the upgrade
  Completed schema test: TEST_USER_TABLESPACE_QUOTA --> Test that tablespace quota
for this user is sufficient to perform the upgrade +++ PASS
  Starting schema test: TEST_ONLINE_TABLESPACE Test that schema tablespaces are
online
  Completed schema test: TEST_ONLINE_TABLESPACE --> Test that schema tablespaces
are online +++ PASS
  Starting schema test: TEST_DATABASE_VERSION Test that the database server
version number is supported for upgrade
  INFO Database product version: Oracle Database 11g Enterprise Edition Release
11.2.0.3.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
  Completed schema test: TEST_DATABASE_VERSION --> Test that the database server
version number is supported for upgrade +++ PASS
  Finished readiness check of Oracle Metadata Services with status: FAILURE.

```

If you are running the 12.1.3.0 version of Oracle Fusion Middleware IAU Schemas, and those schemas were upgraded from an 11g release (11.1.1.7 and later) or 12c (12.1.2.0), your readiness check may fail with the following error:

```

Starting index test for table IAU_COMMON: TEST_REQUIRED_INDEXES --> Test
that the table contains all the required indexes
  INFO Audit schema index DYN_EVENT_CATEGORY_INDEX in table IAU_COMMON is
missing the required columns or index itself is missing. This maybe caused by
a known issue, anyway, this missing index will be added in 12.2.2 upgrade.
  INFO Audit schema index DYN_EVENT_TYPE_INDEX in table IAU_COMMON is
missing the required columns or index itself is missing. This maybe caused by
a known issue, anyway, this missing index will be added in 12.2.2 upgrade.
  INFO Audit schema index DYN_TENANT_INDEX in table IAU_COMMON is missing
the required columns or index itself is missing. This maybe caused by a known
issue, anyway, this missing index will be added in 12.2.2 upgrade.
  INFO Audit schema index DYN_USER_INDEX in table IAU_COMMON is missing
the required columns or index itself is missing. This maybe caused by a known
issue, anyway, this missing index will be added in 12.2.2 upgrade.
  INFO Audit schema index DYN_COMPONENT_TYPE_INDEX in table IAU_COMMON is
missing the required columns or index itself is missing. This maybe caused by
a known issue, anyway, this missing index will be added in 12.2.2 upgrade.
  INFO Audit schema index DYN_USER_TENANT_INDEX in table IAU_COMMON is
missing the required columns or index itself is missing. This maybe caused by
a known issue, anyway, this missing index will be added in 12.2.2 upgrade.
  Completed index test for table IAU_COMMON: TEST_REQUIRED_INDEXES --> Test
that the table contains all the required indexes +++ FAIL

```

---

**Note:** You can ignore the missing index error in the readiness report. This is a known issue. The corresponding missing index is added during the schema upgrade operation. This error does not occur if the schema to be upgraded was created in 12c using the RCU.

---

## 3.4 Stopping Servers and Processes

Before running the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all 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 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 in *Administering Oracle Fusion Middleware*.

---

To stop your Fusion Middleware environment, follow the steps below.

### Step 1: Stop System Components

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

- (UNIX) `DOMAIN_HOME/bin/stopComponent.sh component_name`
- (Windows) `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) `DOMAIN_HOME/bin/stopManagedWebLogic.sh managed_server_name admin_url`
- (Windows) `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, that form part of your environment:

- (UNIX) `DOMAIN_HOME/bin/stopComponent.sh component_name`
- (Windows) `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) `DOMAIN_HOME/bin/stopWebLogic.sh`
- (Windows) `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 having set the `nodemanager.properties` attribute `QuitEnabled` to `true` (the default is `false`), you can use WLST to connect to Node Manager and shut it down. For more information, see `stopNodeManager` in *Oracle Fusion Middleware WLST Command Reference for WebLogic Server*.

## 3.5 Upgrading Product Schemas

After stopping servers and processes, use the Upgrade Assistant to upgrade supported product schemas to the current release of Oracle Fusion Middleware.

The Upgrade Assistant allows you to upgrade individually selected schemas or all schemas associated with a domain. The option you select determines which Upgrade Assistant screens you will use.

### Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.2). Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade for one domain at a time.

### Upgrading Product Schemas Using the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to upgrade the product schemas.

### Verifying the Schema Upgrade

After completing all the upgrade steps, verify that the upgrade was successful by checking that the schema version in `schema_version_registry` has been properly updated.

### 3.5.1 Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.2). Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade for one domain at a time.

To start the Upgrade Assistant:

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

- (Windows) `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:

### [Upgrade Assistant Command-Line Parameters](#)

#### 3.5.1.1 Upgrade Assistant Command-Line Parameters

When you start the Upgrade Assistant from the command-line, you can specify additional parameters.

**Table 3-4 Upgrade Assistant Command Line Parameters**

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks <b>NOTE:</b> 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 <code>-examine</code> parameter.
<code>-threads</code>	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.
<code>-response</code>	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 the Upgrade Assistant in <i>silent mode</i> (without displaying Upgrade Assistant screens).
<code>-examine</code>	Optional	Performs the examine phase but does not perform an actual upgrade. Do not specify this parameter if you have specified the <code>-readiness</code> parameter.

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

Parameter	Required or Optional	Description
<code>-logLevel</code> <i>attribute</i>	Optional	<p>Sets the logging level, specifying one of the following attributes:</p> <ul style="list-style-type: none"> <li>• TRACE</li> <li>• NOTIFICATION</li> <li>• WARNING</li> <li>• ERROR</li> <li>• INCIDENT_ERROR</li> </ul> <p>The default logging level is NOTIFICATION.</p> <p>Consider setting the <code>-logLevel</code> 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 <code>-logLevel</code> TRACE is used.</p>
<code>-logDir</code> <i>location</i>	Optional	<p>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.</p> <p>The default locations are:</p> <p>(UNIX) <code>ORACLE_HOME/oracle_common/upgrade/logs</code>  <code>ORACLE_HOME/oracle_common/upgrade/temp</code></p> <p>(Windows) <code>ORACLE_HOME\oracle_common\upgrade\logs</code>  <code>ORACLE_HOME\oracle_common\upgrade\temp</code></p>
<code>-help</code>	Optional	Displays all of the command-line options.

### 3.5.2 Upgrading Product Schemas Using the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to upgrade the product schemas.

If you are using DB2 in your 12.2.1.0 BI instance, then perform the following before starting the upgrade process:

1. Sign in to the WebLogic Console.

2. Go to **Datasources** under **Services** and select **wlsservices\_datasource**.
3. Change the user for data source 'wlsservices\_datasource' from <PREFIX>\_WLS\_RUNTIME to <PREFIX>\_WLS.

For example: Change the user from L1\_WLS\_RUNTIME to L1\_WLS.

You can now proceed with the upgrade process.

To upgrade product schemas with the Upgrade Assistant:

1. On the Welcome screen, review an introduction to the Upgrade Assistant and information about important pre-upgrade tasks. Click **Next**.

---



---

**Note:** For more information about any Upgrade Assistant screen, click **Help** on the screen.

---



---

2. On the Selected Schemas screen, select **All Schemas Used by a Domain**.
  - **All Schemas Used by a Domain** to allow the Upgrade Assistant to discover and select all components that have a schema available to upgrade in the domain specified in the **Domain Directory** field. This is also known as a *domain assisted schema upgrade*. Additionally, the Upgrade Assistant pre-populates connection information on the schema input screens.

Click **Next**.

3. On the Component List screen, verify that all the components whose schemas you want to upgrade within the domain are listed and click **Next**.

If you do not see the components you want to upgrade, click **Back** to go to the previous screen and specify a different domain.

If you want to exclude some components or schemas from the list, navigate back to the All Schemas screen and select **Individually Selected Schemas**. This option allows you to select only those schemas you want included in the upgrade.

4. On the Prerequisites screen, acknowledge that the prerequisites have been met by selecting all the check boxes. Click **Next**.

---



---

**Note:** The Upgrade Assistant does not verify whether the prerequisites have been met.

---



---

5. On the BIPLATFORM Schema [BIEE\_PLATFORM] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_PLATFORM schema and click **Connect**.

When you see the message "Connection to database successfully completed", click **Next**.

6. On the IAU Schema [BIEE\_IAU] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_IAU schema and click **Connect**.

When you see the message “Connection to database successfully completed”, click **Next**.

7. On the OPSS Schema [BIEE\_OPSS] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_OPSS schema and click **Connect**.

When you see the message “Connection to database successfully completed”, click **Next**.

8. On the MDS Schema [BIEE\_MDS] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_MDS schema and click **Connect**.

When you see the message “Connection to database successfully completed”, click **Next**.

9. On the STB Schema [BIEE\_STB] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_STB schema and click **Connect**.

When you see the message “Connection to database successfully completed”, click **Next**.

10. On the WLS Schema [BIEE\_WLS\_RUNTIME] screen, the system automatically populates data in the other fields from the 12.2.1.0 schema.

Enter the database administrator account: DBA username and password for the database containing the BIEE\_WLS\_RUNTIME schema and click **Connect**.

When you see the message “Connection to database successfully completed”, click **Next**.

11. On the Examine screen, review the status of the Upgrade Assistant as it examines each schema, verifying that the schema is ready for upgrade. If the status is **Examine finished**, click **Next**.

If the examine phase fails, Oracle recommends that you cancel the upgrade by clicking **No** in the Examination Failure dialog. Click **View Log** to see what caused the error and refer to Troubleshooting Your Upgrade in *Oracle Fusion Middleware Upgrading with the Upgrade Assistant Upgrade Guide* for information on resolving common upgrade errors.

---

---

**Note:**

- If you resolve any issues detected during the examine phase without proceeding with the upgrade, you can start the Upgrade Assistant again without restoring from backup. However, if you proceed by clicking **Yes** in the Examination Failure dialog box, you need to restore your pre-upgrade environment from backup before starting the Upgrade Assistant again.
  - Canceling the examination process has no effect on the schemas or configuration data; the only consequence is that the information the Upgrade Assistant has collected must be collected again in a future upgrade session.
- 
- 

12. On the Upgrade Summary screen, review the summary of the options you have selected for schema upgrade.

Verify that the correct Source and Target Versions are listed for each schema you intend to upgrade.

If you want to save these options to a response file to run the Upgrade Assistant again later in response (or silent) mode, click **Save Response File** and provide the location and name of the response file. A silent upgrade performs exactly the same function that the Upgrade Assistant performs, but you do not have to manually enter the data again.

Click **Upgrade** to start the upgrade process.

13. On the Upgrade Progress screen, monitor the status of the upgrade.

---

---

**Caution:** Allow the Upgrade Assistant enough time to perform the upgrade. Do not cancel the upgrade operation unless absolutely necessary. Doing so may result in an unstable environment.

---

---

If any schemas are not upgraded successfully, refer to the Upgrade Assistant log files for more information.

---

---

**Note:** The progress bar on this screen displays the progress of the current upgrade procedure. It does not indicate the time remaining for the upgrade.

---

---

Click **Next**.

14. If the upgrade is successful: On the Upgrade Success screen, click **Close** to complete the upgrade and close the wizard.

If the upgrade fails: On the Upgrade Failure screen, click **View Log** to view and troubleshoot the errors. The logs are available at `ORACLE_HOME/oracle_common/upgrade/logs`.

---

---

**Note:** If the upgrade fails, you must restore your pre-upgrade environment from backup, fix the issues, then restart the Upgrade Assistant.

---

---



### 3.5.3 Verifying the Schema Upgrade

After completing all the upgrade steps, verify that the upgrade was successful by checking that the schema version in `schema_version_registry` has been properly updated.

If you are using an Oracle database, connect to the database as a user having Oracle DBA privileges, and run the following from SQL\*Plus to get the current version numbers:

```
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 ;
```

In the query result:

- Check that the number in the `VERSION` column matches the latest version number for that schema. For example, verify that the schema version number is `12.2.1.2.0`. Note, however, that not all schema versions will be updated. Some schemas do not require an upgrade to this release and will retain their pre-upgrade version number.
- The `STATUS` field will be either `UPGRADING` or `UPGRADED` during the schema patching operation, and will become `VALID` when the operation is completed.
- If the status appears as `INVALID`, the schema update failed. You should examine the logs files to determine the reason for the failure.
- Synonym objects owned by `IAU_APPEND` and `IAU_VIEWER` will appear as `INVALID`, but that does not indicate a failure.

They become invalid because the target object changes after the creation of the synonym. The synonyms objects will become valid when they are accessed. You can safely ignore these `INVALID` objects.

## 3.6 Backing up the mapViewerConfig.xml File

The `mapViewerConfig.xml` file is overwritten by the reconfiguration templates when you run the Reconfiguration Wizard. Therefore, you must back up the `mapViewerConfig.xml` file before reconfiguring your 12.2.1.0 domain.

### Backing up the mapViewerConfig.xml File on UNIX Operating System

To back up the `mapViewerConfig.xml` file:

1. The `mapViewerConfig.xml` file is present in the following location on your system. Use the list command: `ls -ltr` to check its file size.

```
DOMAIN_HOME/config/fmwconfig/mapviewer/conf/
mapViewerConfig.xml
```

```
-rw-r----- 1 mwport svrtech 2xxx7 May 5 18:45 DOMAIN_HOME/config/fmwconfig/
mapviewer/conf/mapViewerConfig.xml
```

2. Copy the `mapViewerConfig.xml` file as shown in the following example:

```
cp DOMAIN_HOME/config/fmwconfig/mapviewer/conf/  
mapViewerConfig.xml DOMAIN_HOME/config/fmwconfig/mapviewer/  
conf/mapViewerConfig_orig.xml
```

A copy of the `mapViewerConfig.xml` file is created with the filename `'mapViewerConfig_orig.xml'`.

## Backing up the `mapViewerConfig.xml` File on Windows Operating System

To back up the `mapViewerConfig.xml` file:

1. Open a command prompt window and change to the following directory:

```
DOMAIN_HOME\config\fmwconfig\mapviewer\conf  
\mapViewerConfig.xml
```

2. Enter the following command to check the file size of the `mapViewerConfig.xml` file:

```
dir
```

3. Copy the `mapViewerConfig.xml` file as shown in the following example:

```
copy "mapViewerConfig.xml" "mapViewerConfig_original.xml"
```

A copy of the `mapViewerConfig.xml` file is created with the filename `'mapViewerConfig_original.xml'`.

## 3.7 Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.2).

When you reconfigure a WebLogic Server domain, the following items are automatically updated, depending on the applications in the domain:

- WebLogic Server core infrastructure
- Domain version

---

---

**Note:**

Before you begin the domain reconfiguration, note the following limitations:

- The Reconfiguration Wizard does not update any of your own applications that are included in the domain.
- Transforming a non-dynamic cluster domain to a dynamic cluster domain during the upgrade process is not supported.

The dynamic cluster feature is available when running the Reconfiguration Wizard, but Oracle only supports upgrading a non-dynamic cluster upgrade and then adding dynamic clusters. You cannot add dynamic cluster during the upgrade process.

---

---

Specifically, when you reconfigure a domain, the following occurs:

- The domain version number in the `config.xml` file for the domain is updated to the Administration Server's installed WebLogic Server version.
- Reconfiguration templates for all installed Oracle products are automatically selected and applied to the domain. These templates define any reconfiguration tasks that are required to make the WebLogic domain compatible with the current WebLogic Server version.
- Start scripts are updated.

If you want to preserve your modified start scripts, be sure to back them up before starting the Reconfiguration Wizard.

---

---

**Note:** Once the domain reconfiguration process starts, it is irreversible. Before running the Reconfiguration Wizard, ensure that you have backed up the domain as covered in the pre-upgrade checklist. If an error or other interruption occurs while running the Reconfiguration Wizard, you must restore the domain by copying the files and directories from the backup location to the original domain directory. This is the only way to ensure that the domain has been returned to its original state before reconfiguration.

---

---

Follow these instructions to reconfigure the existing domain using the Reconfiguration Wizard. For general information about how the domain is reconfigured, see Reconfiguring WebLogic Domains in *Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

[Backing Up the Domain](#)

[Starting the Reconfiguration Wizard](#)

[Reconfiguring the BI Domain with the Reconfiguration Wizard](#)

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

### 3.7.1 Backing Up the Domain

Before running the Reconfiguration Wizard, create a backup copy of the domain directory.

To create a backup of the domain directory:

1. Copy the source domain to a separate location to preserve the contents.

For example, copy `C:\domains\mydomain` to `C:\domains\mydomain_backup`.

2. Before updating the domain on each remote Managed Server, create a backup copy of the domain directory on each remote machine.
3. Verify that the backed up versions of the domain are complete.

If domain reconfiguration fails for any reason, you must copy all files and directories from the backup directory into the original domain directory to ensure that the domain is returned entirely to its original state before reconfiguration.

### 3.7.2 Starting the Reconfiguration Wizard

To start the Reconfiguration Wizard in graphical mode:

1. Sign in to the system on which the domain resides.
2. Open the command shell (on UNIX operating systems) or open a command prompt window (on Windows operating systems).
3. **Edition Based Database Users Only:** If your schemas are configured with EBR database, a default edition name must be manually supplied before you run the Reconfiguration Wizard.

Run the following SQL command to set the default edition:

```
ALTER DATABASE DEFAULT EDITION = edition_name;
```

where *edition\_name* is the child edition name.

4. Go to the `oracle_common/common/bin` directory:
  - (UNIX) `ORACLE_HOME/oracle_common/common/bin`
  - (Windows) `ORACLE_HOME\oracle_common\commom\bin`
5. Start the Reconfiguration Wizard with the following logging options:
  - (UNIX) `./reconfig.sh -log=log_file -log_priority=ALL`
  - (Windows) `reconfig.cmd -log=log_file -log_priority=ALL`

where *log\_file* is the absolute path of the log file you'd like to create for the domain reconfiguration session. This can be helpful if you need to troubleshoot the reconfiguration process.

The parameter `-log_priority=ALL` ensures that logs are logged in fine mode.

---

---

**Note:**

When you run this command, the following error message might appear to indicate that the default cache directory is not valid:

```
*sys-package-mgr*: can't create package cache dir
```

You can change the cache directory by setting the environment variable `CONFIG_JVM_ARGS`. For example:

```
CONFIG_JVM_ARGS=-Dpython.cachedir=valid_directory
```

---

---

### 3.7.3 Reconfiguring the BI Domain with the Reconfiguration Wizard

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

To reconfigure the domain:

1. On the Select Domain screen, specify the location of the domain you want to upgrade or click **Browse** to navigate and select the domain directory. Click **Next**.

2. On the Reconfiguration Setup Progress screen, view the progress of the setup process. When complete, click **Next**.

During this process:

- The reconfiguration templates for your installed products, including Fusion Middleware products, are automatically applied. This updates various domain configuration files such as `config.xml`, `config-groups.xml`, and `security.xml` (among others).
  - Schemas, scripts, and other such files that support your Fusion Middleware products are updated.
  - The domain upgrade is validated.
3. On the Domain Mode and JDK screen, select the JDK to use in the domain or click **Browse** to navigate to the JDK you want to use. The supported JDK version for 12c (12.2.1.2) is 1.8.0\_101 and later. Click **Next**.

---

---

**Note:** You cannot change the **Domain Mode** at this stage.

---

---

For a list of JDKs that are supported for a specific platform, see Oracle Fusion Middleware Supported System Configurations.

4. On the JDBC Data Sources screen, configure the JDBC data sources defined in your domain source.

The JDBC data sources associated with the products for which you are creating the domain are listed in the lower half of the screen. A JDBC data source contains a pool of database connections that are created when the data source instance is created, deployed or targeted, or at server startup. Applications look up a data source on the JNDI tree, and then request a connection. When the applications no longer need the connections, they return the connections to the connection pool in the data source.

From the **Data Source Name** drop-down list, select the data source(s) for which you want to specify the settings. The values that you specify are displayed in the appropriate columns in the data source list, for the selected data source.

For Oracle RAC Configuration for data sources, you can select one of the three options:

- Convert to GridLink
- Convert to RAC multi data source
- Don't convert

For more information about each option, click **Help**.

After specifying the details, click **Next**.

If you do not select any data sources on the JDBC Data Sources screen, the following warning displays:

Missing Driver

Click **Ok** to proceed without verification, click **Cancel** to return to the JDBC Data Sources page.

In this case, if you click **Ok**, the data sources are not verified.

5. On the JDBC Data Sources Test screen, select the check box for the data source connection you configured on the JDBC Data Sources screen and click **Test Selected Connections** to test the data source connection.

---

---

**Note:** In order to test the database connections, the database to which you are connecting must be running. If you do not want to test the connections at this time, do not select any data sources. Click **Next** to continue.

---

---

6. On the Database Configuration Type screen, select **RCU Data** to connect to the Server Table (\_STB) schema.

Enter the database connection details using the RCU service table (\_STB) schema credentials and click **Get RCU Configuration**.

The Reconfiguration Wizard uses this connection to automatically configure the data sources required for components in your domain.

**NOTE:** For any existing 11g datasource, the reconfiguration will preserve the existing values. For new datasources where the schema was created for 12c by the RCU, the default connection data will be retrieved from the \_STB schema. If no connection data for a given schema is found in the \_STB schema, then the default connection data is used.

If the check is successful, click **Next**. If the check fails, reenter the connection details correctly and try again.

7. On the JDBC Component Schema Test screen, select all the component schemas and click **Test Selected Connections** to test the connection for each schema. The result of the test is indicated in the **Status** column.

When the check is complete, click **Next**.

8. On the Advanced Configuration screen, you can select all categories for which you want to perform advanced configuration. For each category you select, the appropriate configuration screen is displayed to allow you to perform advanced configuration.

---

---

**Note:** The categories that are listed on the Advanced Configuration screen depend on the resources defined in the templates you selected for the domain.

---

---

For this upgrade, select none of the options and click **Next**.

9. On the Configuration Summary screen, review the detailed configuration settings of the domain before continuing.

You can limit the items that are displayed in the right-most panel by selecting a filter option from the **View** drop-down list.

To change the configuration, click **Back** to return to the appropriate screen. To reconfigure the domain, click **Reconfig**.

---



---

**Note:** The location of the domain does not change when you reconfigure it.

---



---

10. The Reconfiguration Progress screen displays the progress of the reconfiguration process.

During this process:

- Domain information is extracted, saved, and updated.
- Schemas, scripts, and other such files that support your Fusion Middleware products are updated.

When the progress bar shows 100%, click **Next**.

11. The End of Configuration screen indicates whether the reconfiguration process completed successfully or failed. It also displays the location of the domain that was reconfigured as well as the Administration Server URL (including the listen port). If the reconfiguration is successful, it displays **Oracle WebLogic Server Reconfiguration Succeeded**.

If the reconfiguration process did not complete successfully, an error message is displayed indicates the reason. Take appropriate action to resolve the issue. If you cannot resolve the issue, contact My Oracle Support.

Note the Domain Location and the Admin Server URL for further operations.

### 3.8 Restoring the mapViewerConfig.xml File

The mapViewerConfig.xml file is overwritten when you run the Reconfiguration Wizard on your domain. You can know that the mapViewerConfig.xml file is overwritten by checking its file size. You must restore the original file that you backed up before upgrading your domain with the Upgrade Assistant.

#### Restoring the mapViewerConfig.xml File on UNIX Operating System

To restore the original mapViewerConfig.xml file:

1. Change to the following directory:

```
DOMAIN_HOME/config/fmwconfig/mapviewer/conf
```

2. Enter the following command to list the files within this directory and check the file size of the mapViewerConfig.xml file:

```
ls -ltr
```

Following is a sample output:

```
-rw-r----- 1 mwpport svrtech 2xxx2 May 5 19:07 DOMAIN_HOME/config/fmwconfig/
mapviewer/conf/mapViewerConfig.xml
```

---



---

**Note:** The change in the file size implies that the mapViewerConfig.xml file is overwritten by the reconfiguration template.

---



---

3. Restore the original file by renaming the mapViewerConfig\_original.xml to mapViewerConfig.xml.

4. Enter the following command to list the files again and check the file size of the `mapViewerConfig.xml` file:

```
ls -ltr
```

The file size of the `mapViewerConfig.xml` file should now match with the file size you obtained while backing up the `mapViewerConfig.xml` file.

In this example, `2xxx7`.

## Restoring the `mapViewerConfig.xml` File on Windows Operating System

To restore the original `mapViewerConfig.xml` file:

1. Change to the following directory:

```
DOMAIN_HOME\config\fmwconfig\mapviewer\conf
```

2. Enter the following command to list the files within this directory and check the file size of the `mapViewerConfig.xml` file:

```
dir
```

---

---

**Note:** The change in the file size implies that the `mapViewerConfig.xml` file is overwritten by the reconfiguration template.

---

---

3. Restore the original file by renaming the `mapViewerConfig_original.xml` to `mapViewerConfig.xml`.
4. Enter the following command to list the files again and check the file size of the `mapViewerConfig.xml` file:

```
dir
```

The file size of the `mapViewerConfig.xml` file should now match with the file size you obtained while backing up the `mapViewerConfig.xml` file.

## 3.9 Upgrading Domain Component Configurations

After reconfiguring the domain, use the Upgrade Assistant to upgrade the domain *component* configurations inside the domain to match the updated domain configuration.

### Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.2). Oracle recommends that you run the Upgrade Assistant as a non-SYSDBA user, completing the upgrade for one domain at a time.

### Upgrading Domain Components Using the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.

### 3.9.1 Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.2). Oracle recommends



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

To start the Upgrade Assistant:

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

### [Upgrade Assistant Command-Line Parameters](#)

#### 3.9.1.1 Upgrade Assistant Command-Line Parameters

When you start the Upgrade Assistant from the command-line, you can specify additional parameters.

**Table 3-5 Upgrade Assistant Command Line Parameters**

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks <b>NOTE:</b> 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 <code>-examine</code> parameter.
<code>-threads</code>	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.
<code>-response</code>	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 the Upgrade Assistant in <i>silent mode</i> (without displaying Upgrade Assistant screens).

**Table 3-5 (Cont.) Upgrade Assistant Command Line Parameters**

Parameter	Required or Optional	Description
-examine	Optional	<p>Performs the examine phase but does not perform an actual upgrade.</p> <p>Do not specify this parameter if you have specified the -readiness parameter.</p>
-logLevel <i>attribute</i>	Optional	<p>Sets the logging level, specifying one of the following attributes:</p> <ul style="list-style-type: none"> <li>• TRACE</li> <li>• NOTIFICATION</li> <li>• WARNING</li> <li>• ERROR</li> <li>• INCIDENT_ERROR</li> </ul> <p>The default logging level is NOTIFICATION.</p> <p>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.</p>
-logDir <i>location</i>	Optional	<p>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.</p> <p>The default locations are:</p> <p>(UNIX) <i>ORACLE_HOME</i>/  oracle_common/upgrade/  logs  <i>ORACLE_HOME</i>/  oracle_common/upgrade/  temp</p> <p>(Windows) <i>ORACLE_HOME</i>  \oracle_common\upgrade  \logs  <i>ORACLE_HOME</i>  \oracle_common\upgrade  \temp</p>
-help	Optional	Displays all of the command-line options.

### 3.9.2 Upgrading Domain Components Using the Upgrade Assistant

Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.

After running the Reconfiguration Wizard to reconfigure the WebLogic domain to 12c (12.2.1.2), you must run the Upgrade Assistant to upgrade the domain *component* configurations to match the updated domain configuration.

To upgrade the 12.2.1.2 domain:

1. On the Welcome screen, review an introduction to the Upgrade Assistant and information about important pre-upgrade tasks. Click **Next**.

---

---

**Note:** For more information about any Upgrade Assistant screen, click **Help** on the screen.

---

---

2. On the next screen:

- Select **All Configurations Used By a Domain**. The screen name changes to WebLogic Components.
- In the **Domain Directory** field, enter the WebLogic domain directory path.

Click **Next**.

3. On the Component List screen, verify that the list includes all the components for which you want to upgrade configurations and click **Next**.

If you do not see the components you want to upgrade, click **Back** to go to the previous screen and specify a different domain.

4. On the Prerequisites screen, acknowledge that the prerequisites have been met by selecting all the check boxes. Click **Next**.

---

---

**Note:** The Upgrade Assistant does not verify whether the prerequisites have been met.

---

---

5. On the MapViewer Configuration screen, select **12c** and click **Next**.

6. On the Examine screen, review the status of the Upgrade Assistant as it examines each component, verifying that the component configuration is ready for upgrade. If the status is **Examine finished**, click **Next**.

If the examine phase fails, Oracle recommends that you cancel the upgrade by clicking **No** in the Examination Failure dialog. Click **View Log** to see what caused the error and refer to Troubleshooting Your Upgrade in *Oracle Fusion Middleware Upgrading with the Upgrade Assistant Upgrade Guide* for information on resolving common upgrade errors.

---

---

**Note:**

- If you resolve any issues detected during the examine phase without proceeding with the upgrade, you can start the Upgrade Assistant again without restoring from backup. However, if you proceed by clicking **Yes** in the Examination Failure dialog box, you need to restore your pre-upgrade environment from backup before starting the Upgrade Assistant again.
  - Canceling the examination process has no effect on the configuration data; the only consequence is that the information the Upgrade Assistant has collected must be collected again in a future upgrade session.
- 
- 

7. On the Upgrade Summary screen, review the summary of the options you have selected for component configuration upgrade.

The response file collects and stores all the information that you have entered, and enables you to perform a silent upgrade at a later time. The silent upgrade performs exactly the same function that the Upgrade Assistant performs, but you do not have to manually enter the data again. If you want to save these options to a response file, click **Save Response File** and provide the location and name of the response file.

Click **Upgrade** to start the upgrade process.

8. On the Upgrade Progress screen, monitor the status of the upgrade.

---

---

**Caution:** Allow the Upgrade Assistant enough time to perform the upgrade. Do not cancel the upgrade operation unless absolutely necessary. Doing so may result in an unstable environment.

---

---

If any components are not upgraded successfully, refer to the Upgrade Assistant log files for more information.

---

---

**Note:** The progress bar on this screen displays the progress of the current upgrade procedure. It does not indicate the time remaining for the upgrade.

---

---

Click **Next**.

9. If the upgrade is successful: On the Upgrade Success screen, click **Close** to complete the upgrade and close the wizard. The Post-Upgrade Actions window describes the manual tasks you must perform to make components functional in the new installation. This window appears only if a component has post-upgrade steps.

If the upgrade fails: On the Upgrade Failure screen, click **View Log** to view and troubleshoot the errors. The logs are available at `ORACLE_HOME/oracle_common/upgrade/logs`.

---

---

**Note:** If the upgrade fails you must restore your pre-upgrade environment from backup, fix the issues, then restart the Upgrade Assistant.

---

---

## 3.10 Verifying the Domain-specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, log in to the Administration console and the Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.2.

To log into the Administration Console, go to: `http://  
administration_server_host:administration_server_port/console`

To log into the Fusion Middleware Control, go to: `http://  
administration_server_host:administration_server_port/em`

---

---

**Note:**

After upgrade, make sure you run the administration tools from the new 12c Oracle home and not from the previous Oracle home.

During the upgrade process, some OWSM documents, including policy sets and predefined documents such as policies and assertion templates, may need to be upgraded. If a policy set or a predefined document is upgraded, its version number is incremented by **1**.

---

---

## 3.11 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) `DOMAIN_HOME/bin/startWebLogic.sh`
- (Windows) `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) `DOMAIN_HOME/bin/startNodeManager.sh`
- (Windows) `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) `DOMAIN_HOME/bin/startComponent.sh component_name`
- (Windows) `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) `DOMAIN_HOME/bin/startManagedWebLogic.sh managed_server_name admin_url`
- (Windows) `DOMAIN_HOME\bin\startManagedWebLogic.cmd managed_server_name admin_url`

When prompted, enter your user name and password.

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**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.

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### Step 5: Start System Components

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

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

You can start system components in any order.

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## Post-Upgrade Tasks

After completing the upgrade process, perform the tasks listed in this chapter to start the BI instance and validate the upgrade.

This chapter contains the following topics:

### Enabling Internal SSL

Enable SSL on internal communication links after you complete the upgrade process.

### Migrating Catalog Groups

Catalog groups are a feature of Oracle BI EE that allows administrators to organize users and application roles for security administration purposes.

## 4.1 Enabling Internal SSL

Enable SSL on internal communication links after you complete the upgrade process.

To enable internal SSL:

1. Stop the system by entering the following command:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/stop.sh
```

On Windows operating system:

```
DOMAIN_HOME\bitools\bin\stop.cmd
```

2. Enter the following command to enable SSL on WebLogic internal channels and internal components:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/ssl.sh internalssl true
```

On Windows operating system:

```
DOMAIN_HOME\bitools\bin\ssl.cmd internalssl true
```

3. Restart the system by entering the following command:

On UNIX operating system:

```
DOMAIN_HOME/bitools/bin/start.sh
```

On Windows operating system:

```
DOMAIN_HOME\bitools\bin\start.cmd
```

## 4.2 Migrating Catalog Groups

Catalog groups are a feature of Oracle BI EE that allows administrators to organize users and application roles for security administration purposes.

In Oracle BI Release 12c (12.2.1.1 and higher), catalog groups are deprecated. The catalog groups are migrated by the upgrade process to Application roles.



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# Starting the Upgrade Assistant

You can run the Upgrade Assistant either in the Graphical User Interface (GUI) mode or in the response file mode.

You can use the optional command-line interface arguments, documented in this topic, to upgrade your Oracle Fusion Middleware components to the latest version. In addition, a response file can be generated to automate some of the upgrade tasks.

This topic contains the following sections:

## [View Display Error while Generating Oracle R-based Advanced Analytic Reports](#)

If you get the following error while generating Oracle R-based Advanced Analytic reports after you have upgraded to Oracle BI 12.2.1.1, see the procedure in this topic to fix the issue. View Display Error: Odbc driver returned an error (SQLExecDirectW). Error codes: OPR4ONWY, U9IM8TAC, U9IM8TAC, U9IM8TAC, OI2DL65P.

## A.1 View Display Error while Generating Oracle R-based Advanced Analytic Reports

If you get the following error while generating Oracle R-based Advanced Analytic reports after you have upgraded to Oracle BI 12.2.1.1, see the procedure in this topic to fix the issue. View Display Error: Odbc driver returned an error (SQLExecDirectW). Error codes: OPR4ONWY, U9IM8TAC, U9IM8TAC, U9IM8TAC, OI2DL65P.

To resolve the view display error:

1. Verify that you are able to successfully generate R-based Advanced Analytic reports in 12.2.1.x environment.
2. Back up the 12.2.1.x R script that you have customized.
3. After you have upgraded to 12.2.1.2, rerun the R installation packages (r-installer.zip). The R installation packages are bundled with the BI distribution and are available at the following location:

On UNIX operating system:

```
ORACLE_HOME/bi/bifoundation/advanced_analytics/
```

On Windows operating system:

```
ORACLE_HOME\bi\bifoundation\advanced_analytics\
```

For detailed information about installing Oracle Enterprise R, see *Installing R and Oracle R Enterprise for External Logical SQL Functions in Oracle Fusion Middleware Installing and Configuring Oracle Business Intelligence Installation Guide*.

4. After installing the 12.2.1.2 R script, copy the custom settings from the 12.2.1.x R script to the 12.2.1.2 R script.