

Oracle® Fusion Middleware

Upgrading Oracle WebCenter



12c (12.2.1.4.0)

E95188-07

September 2023

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

ORACLE®

Oracle Fusion Middleware Upgrading Oracle WebCenter, 12c (12.2.1.4.0)

E95188-07

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Contents

Preface

Audience	xi
Documentation Accessibility	xi
Diversity and Inclusion	xi
Related Documents	xii
Conventions	xii

1 Introduction to the Oracle WebCenter Upgrade

Understanding the Oracle WebCenter Upgrade	1-1
Understanding the Starting Points for an Oracle WebCenter Upgrade	1-2
Understanding the Interoperability and Compatibility Restrictions	1-2

2 Pre-Upgrade Tasks for Oracle WebCenter Components

Pre-Upgrade Checklist	2-2
Creating a Complete Backup	2-4
Backing Up the Schema Version Registry Table	2-4
Maintaining Customized Domain and Environment Settings	2-4
Cloning Your Production Environment for Testing	2-5
Verifying Certification and System Requirements	2-6
Verify Your Environment Meets Certification Requirements	2-7
Verify System Requirements and Specifications	2-7
Verify That the Database Hosting Oracle Fusion Middleware is Supported	2-11
Verify That the JDK Is Certified for This Release of Oracle Fusion Middleware	2-11
Updating Policy Files when Using Enhanced Encryption (AES 256)	2-12
Purging Unused Data	2-12
Creating an Edition on the Server for Edition-Based Redefinition	2-12
Creating a Non-SYSDBA User to Run the Upgrade Assistant	2-13
Identifying Existing Schemas Available for Upgrade	2-15
Performing the Oracle WebCenter Pre-Upgrade Tasks	2-16
Disabling Obsolete Components Before Upgrade	2-17
Determining Which Schemas Can be Upgraded for WebCenter	2-18

Upgrading the Metadata Schema (_MDS) Before Upgrading WebCenter Content Web UI 11g Domain	2-19
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3 Upgrading an Oracle WebCenter Domain

About the Oracle WebCenter Upgrade Process	3-2
Installing a Product Distribution	3-5
Creating the Required 12c Schemas with the RCU	3-7
Running a Pre-Upgrade Readiness Check	3-11
About Running a Pre-Upgrade Readiness Check	3-11
Starting the Upgrade Assistant in Readiness Mode	3-12
Upgrade Assistant Parameters	3-13
Performing a Readiness Check with the Upgrade Assistant	3-14
Understanding the Readiness Report	3-16
Stopping Servers and Processes	3-22
Upgrading Product Schemas	3-23
Identifying Existing Schemas Available for Upgrade	3-23
Starting the Upgrade Assistant	3-24
Upgrade Assistant Parameters	3-25
Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant	3-26
Verifying the Schema Upgrade	3-29
About Reconfiguring the Domain	3-30
Backing Up the Domain	3-32
Starting the Reconfiguration Wizard	3-33
Reconfiguring the Domain with the Reconfiguration Wizard	3-34
Upgrading Domain Component Configurations	3-36
Starting the Upgrade Assistant	3-36
Upgrade Assistant Parameters	3-37
Upgrading Domain Component Configurations Using the Upgrade Assistant	3-39
Verifying the Domain-Specific-Component Configurations Upgrade	3-41
Performing Post-Upgrade Configuration Tasks	3-42
Starting Servers and Processes	3-42
Synchronizing Keystores	3-44
Verifying the New Applications Work as Expected	3-44

4 Upgrading WebCenter in a Clustered Topology

Troubleshooting a WebCenter Cluster Upgrade	4-1
Accessing WebCenter Content URLs Post Upgrade	4-2

Part I Upgrading Oracle WebCenter from 11g to 12c

5 Upgrading WebCenter Sites from 11g to 12c

About the WebCenter Sites Upgrade Process from 11g to 12c	5-2
Installing the Product Distribution	5-5
Creating the Required 12c Schemas with the RCU	5-7
Configuring the WebCenter Sites Domain	5-11
Configuring WebCenter Sites Instance	5-17
Prerequisites for Configuring WebCenter Sites Instance	5-17
Configuring WebCenter Sites with the Configurator	5-18
Post-Configuration Tasks	5-20
Switching to Authentication Against an LDAP Directory	5-21
Switching to Authentication Against Oracle Access Manager	5-22
Integrating SiteCapture with OAM	5-31
Integrating OAM with Oracle WebCenter Sites: Satellite Server	5-35
Integrating OAM with Visitor Services	5-36
Before Running the Upgrade Assistant	5-36
Creating a Non-SYSDBA User to Run the Upgrade Assistant	5-38
Copying 11.1.1.8 Schema from a DB2 Source to a New Target Database	5-40
Upgrading Product Schemas	5-42
Starting the Upgrade Assistant	5-42
Upgrade Assistant Parameters	5-43
Upgrading Product Schemas Using the Upgrade Assistant	5-44
Verifying the Schema Upgrade	5-47
Upgrading Domain Component Configurations	5-48
Starting the Upgrade Assistant	5-48
Upgrade Assistant Parameters	5-49
Upgrading Sites Configuration Using the Upgrade Assistant	5-50
Verifying the Domain-Specific-Component Configurations Upgrade	5-54
Post-Upgrade Validation Tasks	5-54
Post-Upgrade Tasks	5-55
Starting Servers and Processes	5-58
If the Existing Instance is a Delivery Instance...	5-59
Migrating Custom Java Libraries or Static Web Resources	5-60

6 Upgrading Oracle WebCenter Portal from 11g to 12c

Performing Pre-Upgrade Tasks for Oracle WebCenter Portal	6-2
Reassociating to a Database-Based Policy Store	6-2
Exporting Metadata for Portlet Producer Applications	6-2

Saving OmniPortlet and Web Clipping Configuration	6-2
Preparing to Migrate Custom Task Flows	6-3
Migrating Portal Framework Applications	6-3
Migrating from Folders_g to FrameworkFolders	6-4
Upgrading Oracle WebCenter Portal 11g Installations	6-4
Running the upgradeWebCenterPortal WLST Command	6-6
Output Generated by the upgradeWebCenterPortal WLST Command	6-6
Running the Upgrade Audit Tool	6-8
Accessing Upgrade Metrics	6-12
Performing Post-Upgrade Tasks for Oracle WebCenter Portal	6-13
Upgrading 11g Portlet Producers	6-13
Migrating a Portlet Producer Application	6-13
Redeploying a Portlet Producer Application	6-14
Migrating Customizations	6-14
Restoring OmniPortlet and Web Clipping Configuration	6-14
Verify the Content Server Connection is Upgraded	6-15
Upgrading WebCenter Portal 11g Assets to 12c	6-15
Updating Custom Coherence Configuration	6-15
Migrating Custom Task Flows	6-16
Replacing Document Viewer Component	6-17
Understanding the Impact of Upgrade on Deprecated Features	6-17
Portal-Level Device Settings	6-17
Hierarchical Portals	6-17
Deprecated Portlets	6-18
Troubleshooting Oracle WebCenter Portal Upgrade Issues	6-18
Extra Entries Appear for the ACTIVITIES Schema	6-18
Floating Toolbar Not Available for Custom Page Templates	6-18
Running the Predeployment Tool does not Update 11g Portlet Producers	6-18
Handling Errors While Upgrading Oracle WebCenter Portal	6-19
Errors on Accessing Documents/Blogs/Wiki Pages in an Upgraded Portal	6-20
Portal Upgrade Fails	6-20

7 Upgrading WebCenter Content: Imaging from 11g to 12c

About the I/PM Upgrade Process from 11g to 12c	7-2
Installing the Product Distribution	7-3
Running a Pre-Upgrade Readiness Check	7-5
About Running a Pre-Upgrade Readiness Check	7-5
Starting the Upgrade Assistant in Readiness Mode	7-6
Upgrade Assistant Parameters	7-7
Performing a Readiness Check with the Upgrade Assistant	7-8

Understanding the Readiness Report	7-10
Stopping Servers and Processes	7-16
Upgrading Product Schemas	7-17
Starting the Upgrade Assistant	7-17
Upgrade Assistant Parameters	7-18
Upgrading Product Schemas Using the Upgrade Assistant	7-19
Verifying the Schema Upgrade	7-22
Creating the Required 12c Schemas with the RCU	7-23
About Reconfiguring the Domain	7-27
Backing Up the Domain	7-29
Starting the Reconfiguration Wizard	7-30
Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard	7-31
Upgrading Domain Component Configurations	7-33
Starting the Upgrade Assistant	7-34
Upgrade Assistant Parameters	7-34
Upgrading Domain Components Using the Upgrade Assistant	7-36
Verifying the Domain-Specific-Component Configurations Upgrade	7-38
Starting Servers and Processes	7-39
Post Upgrade Task	7-40
Importing BPEL Configuration	7-40
Importing Document Permissions	7-41

8 Upgrading Oracle Universal Records Management from 11g to 12c

About the URM and/or UCM Upgrade Process from 11g to 12c	8-2
Installing the Product Distribution	8-4
Running a Pre-Upgrade Readiness Check	8-6
About Running a Pre-Upgrade Readiness Check	8-6
Starting the Upgrade Assistant in Readiness Mode	8-7
Upgrade Assistant Parameters	8-7
Performing a Readiness Check with the Upgrade Assistant	8-9
Understanding the Readiness Report	8-11
Stopping Servers and Processes	8-16
Upgrading Product Schemas	8-18
Starting the Upgrade Assistant	8-18
Upgrade Assistant Parameters	8-19
Upgrading Product Schemas Using the Upgrade Assistant	8-20
Verifying the Schema Upgrade	8-23
About Reconfiguring the Domain	8-24
Backing Up the Domain	8-26
Starting the Reconfiguration Wizard	8-27

Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard	8-28
Starting Servers and Processes	8-31
Verifying the Upgrade	8-32

Part II Upgrading Oracle WebCenter from a Previous 12c Release

9 Upgrading WebCenter Sites from a Previous 12c Release

About the WebCenter Sites Upgrade Process from a Previous 12c Release	9-3
Installing the Product Distribution	9-5
If you have installed Sites with Insights...	9-7
Running a Pre-Upgrade Readiness Check	9-8
About Running a Pre-Upgrade Readiness Check	9-9
Starting the Upgrade Assistant in Readiness Mode	9-9
Upgrade Assistant Parameters	9-10
Performing a Readiness Check with the Upgrade Assistant	9-12
Understanding the Readiness Report	9-13
Stopping Servers and Processes	9-19
Before Running the Upgrade Assistant	9-20
Checklist Before Performing Schema Upgrade	9-20
Upgrading Product Schemas	9-21
Starting the Upgrade Assistant	9-21
Upgrade Assistant Parameters	9-22
Upgrading Product Schemas Using the Upgrade Assistant	9-23
Verifying the Schema Upgrade	9-26
About Reconfiguring the Domain	9-27
Backing Up the Domain	9-29
Starting the Reconfiguration Wizard	9-30
Reconfiguring the WebCenter Sites Domain with the Reconfiguration Wizard	9-31
Upgrading Domain Component Configurations	9-33
Starting the Upgrade Assistant	9-34
Upgrade Assistant Parameters	9-34
Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant	9-36
Verifying the Domain-Specific-Component Configurations Upgrade	9-40
Starting Servers and Processes	9-40
Post-Upgrade Validation Tasks	9-42
Post-Upgrade Tasks	9-42
Migrating Custom Java Libraries or Static Web Resources	9-45

10 Upgrading Oracle WebCenter Content

Understanding an Upgrade to Oracle WebCenter Content 12c	10-1
Performing Pre-Upgrade Tasks for WebCenter Content	10-1
Performing Pre-Upgrade Tasks for Oracle WebCenter Enterprise Capture	10-2
Verify the Batch Processing has Completed and Capture JMS Queues are Empty	10-2
Performing an Upgrade of Oracle WebCenter Content	10-3
Performing Post Upgrade Tasks for WebCenter Content	10-3
Configuring the Oracle WebCenter Content Server Domain to Include WebCenter Content - Web UI	10-4
Configuring E-Business Suite AXF Schema After an Upgrade	10-4
Updating the WccAdf.ear File (Optional)	10-5
Migrating Custom Skins for WebCenter Content Web UI	10-5
Upgrading Oracle Application Adapters for Oracle WebCenter Content	10-5
Configuring the Report Library for Records Management in Content Server	10-6
Using Fusion Middleware Control to Monitor IBR	10-6
Starting Oracle WebCenter Content Server with SOA or BAM	10-6

11 Upgrading WebCenter Portal from a Previous 12c Release

Creating a Complete Backup	11-1
Installing the Product Distribution	11-2
Running a Pre-Upgrade Readiness Check	11-4
About Running a Pre-Upgrade Readiness Check	11-4
Starting the Upgrade Assistant in Readiness Mode	11-5
Upgrade Assistant Parameters	11-5
Performing a Readiness Check with the Upgrade Assistant	11-7
Understanding the Readiness Report	11-9
Stopping Servers and Processes	11-14
Upgrading Product Schemas	11-16
Identifying Existing Schemas Available for Upgrade	11-16
Starting the Upgrade Assistant	11-17
Upgrade Assistant Parameters	11-18
Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant	11-19
Verifying the Schema Upgrade	11-22
About Reconfiguring the Domain	11-23
Backing Up the Domain	11-25
Starting the Reconfiguration Wizard	11-26
Reconfiguring the Domain with the Reconfiguration Wizard	11-27
Upgrading Domain Component Configurations	11-29
Starting the Upgrade Assistant	11-29
Upgrade Assistant Parameters	11-30

Upgrading Domain Component Configurations Using the Upgrade Assistant	11-32
Verifying the Domain-Specific-Component Configurations Upgrade	11-34
Starting Servers and Processes	11-35

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

Updating the JDK Location in an Existing Oracle Home	A-2
Updating the JDK Location in an Existing Domain Home	A-2

B About the Reduced Downtime Upgrade Process

Performing a Reduced Downtime Upgrade	B-4
Performing the Upgrade on Host 1	B-5
Stopping Components, Servers and Processes on Host 1	B-6
Uninstalling the Software	B-7
Installing the 12c (12.2.1.4.0) Product Distributions for Oracle WebCenter	B-8
Running a Pre-Upgrade Readiness Check	B-10
Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant	B-20
Upgrading WebCenter Portal Domain Components	B-23
Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant	B-23
Packing the Domain and Updating the Domain Properties	B-27
Restarting Node Manager, Administration Server, Managed Servers and Components on Host 1	B-28
Performing the Upgrade on Host 2	B-29
Stopping the Components, Servers and Processes on Host 2	B-30
Uninstalling the Software	B-31
Installing the Software into the Existing Middleware Home	B-31
Unpacking the Domain on Each Additional Host	B-31
Restarting the Managed Servers and Processes	B-31
Validating the Upgrade	B-32

Preface

This document describes how to upgrade an existing Oracle WebCenter environment to 12c (12.2.1.4.0).

- [Audience](#)
Identify the target audience for your book and learn more about this document intended for.
- [Documentation Accessibility](#)
- [Diversity and Inclusion](#)
- [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

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

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

- Oracle Fusion Middleware system administration and configuration.
- Configuration parameters and expected behavior of the system being upgraded.

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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:

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

1

Introduction to the Oracle WebCenter Upgrade

Upgrading Oracle WebCenter to 12c (12.2.1.4.0) is a multi-step process. The procedures you perform to upgrade and reconfigure your current deployment depends on the configuration of your domain and the components you will be upgrading. Having a complete understanding of this process before you begin the upgrade can help you limit unnecessary downtime.

- [Understanding the Oracle WebCenter Upgrade](#)
Before upgrading your Oracle WebCenter environment to 12c (12.2.1.4.0), you should understand how your pre-upgrade environment will be affected by the upgrade. Also, you must understand the difference between *in place* and *out of place* upgrades.
- [Understanding the Starting Points for an Oracle WebCenter Upgrade](#)
Before you begin your upgrade, verify that your components are eligible for an upgrade to this release. If a component is not at a supported starting point, then you must upgrade it to a supported starting point before you can start an upgrade to 12c (12.2.1.4.0).
- [Understanding the Interoperability and Compatibility Restrictions](#)
Before you begin the upgrade process, you should understand how all of the components within your existing domain will be impacted by the upgrade. Verify that components in your pre-upgrade environment will not have compatibility or interoperability issues post-upgrade.

Understanding the Oracle WebCenter Upgrade

Before upgrading your Oracle WebCenter environment to 12c (12.2.1.4.0), you should understand how your pre-upgrade environment will be affected by the upgrade. Also, you must understand the difference between *in place* and *out of place* upgrades.

For example, schemas and domain directory upgrades are performed *in place*, which updates the existing files during the upgrade. The 12c (12.2.1.4.0) Oracle Home binaries are upgraded *out of place*, as the binaries are installed in a new directory.

The upgrade to 12c (12.2.1.4.0) includes the midtier and the schemas. You cannot perform a midtier-only or schema-only upgrade.

- **Oracle WebLogic Server, JRF and WebCenter Oracle Home Binaries - Upgraded Out of Place**
You install the Oracle Infrastructure 12c (12.2.1.4.0) (which includes WebLogic Server and JRF) and the Oracle WebCenter distribution binaries in a new Oracle home. The upgrade of binaries is considered *out of place* as the existing binaries are not overwritten.
- **Schemas - Upgraded In Place**
The existing schemas are upgraded *in place*, which means that the Upgrade Assistant updates and overwrites the schemas during the upgrade process. The servers must be down during this process.
Exception: The Oracle WebCenter Sites schemas are upgraded *out of place*.
- **Domain Directory Reconfiguration - Upgraded In Place**

The existing domain is upgraded *in place*. During the upgrade you identify the location of the existing 12c domain that will be reconfigured to point to the new 12c (12.2.1.4.0) home directory.

- **Domain Component Configuration - Upgraded In Place**

After the reconfiguration of the existing domain, the Upgrade Assistant is used again to upgrade any remaining domain component configurations to point to the new 12c (12.2.1.4.0) home directory.

Understanding the Starting Points for an Oracle WebCenter Upgrade

Before you begin your upgrade, verify that your components are eligible for an upgrade to this release. If a component is not at a supported starting point, then you must upgrade it to a supported starting point before you can start an upgrade to 12c (12.2.1.4.0).

The supported starting points for Oracle WebCenter vary by component. Review the table to determine which versions are supported for an upgrade to Oracle WebCenter 12c (12.2.1.4.0).

Component Name	Supported Starting Points for Upgrade
Oracle WebCenter Enterprise Capture ¹	11.1.1.9 12.2.1.2 12.2.1.3
Oracle WebCenter Content	11.1.1.9 12.2.1.2 12.2.1.3
Oracle WebCenter Portal	11.1.1.9 12.2.1.2 12.2.1.3
Oracle WebCenter Sites	11.1.1.8.0 12.2.1.2 12.2.1.3
Oracle WebCenter Content: Imaging	11.1.1.9 12.2.1.2 12.2.1.3.0

¹ If you installed WebCenter Capture 11.1.1.9.0, then the schema version will still be 11.1.1.8.0 as there were no schema changes in 11.1.1.9.0.

Understanding the Interoperability and Compatibility Restrictions

Before you begin the upgrade process, you should understand how all of the components within your existing domain will be impacted by the upgrade. Verify that components in your pre-upgrade environment will not have compatibility or interoperability issues post-upgrade.

In general, you cannot upgrade a domain that contains components that are not yet available or have been deprecated in Oracle Fusion Middleware 12c (12.2.1.4.0). There are other restrictions on the components that can be upgraded to 12c (12.2.1.4.0) and you need to be sure that you have reviewed this information carefully before you proceed with the upgrade.

WebCenter Web UI 12c is not compatible with WebCenter Content or Application Development Framework 11g.

WebCenter Web UI 12c (12.2.1.4.0) cannot be used with WebCenter Content 11g or Application Development Framework 11g. Web UI can only be used with 12c (12.2.1.4.0).

2

Pre-Upgrade Tasks for Oracle WebCenter Components

You can use the pre-upgrade checklists to determine which tasks must be completed before you start the upgrade. The tasks that you perform will vary depending on your existing deployment and the components and configurations that are being upgraded. Do not start an upgrade until you have reviewed the list and completed all required tasks.



Note:

Before you start any upgrade, make sure that you have created a complete backup of your pre-upgrade environment. If the upgrade fails, you will have to restore from backup and restart the upgrade.

- [Pre-Upgrade Checklist](#)
The Pre-Upgrade Checklist identifies tasks that can be performed before you begin your upgrade to ensure that you have a successful upgrade and limited downtime.
- [Creating a Complete Backup](#)
Before you start an upgrade, back up all system-critical files, including the databases that host your Oracle Fusion Middleware schemas.
- [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 an Edition on the Server for Edition-Based Redefinition](#)
Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12c (12.2.1.4.0).
- [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.
- [Performing the Oracle WebCenter Pre-Upgrade Tasks](#)
Before upgrading to Oracle WebCenter products 12c (12.2.1.4.0), perform pre-upgrade tasks that apply to your environment.

Pre-Upgrade Checklist

The Pre-Upgrade Checklist identifies tasks that can be performed before you begin your upgrade to ensure that 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 spend offline.



Note:

The pre-upgrade procedures you perform depends on the configuration of your existing system, the components you are upgrading, and the environment that 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.

This table describes the Pre-Upgrade Checklist. It lists all the required components and describes them in detail.

Table 2-1 Tasks to Perform Before You Upgrade Oracle Fusion Middleware

Task	Description
Required Create a complete backup of your existing environment.	Back up all system-critical files and databases 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. See Creating a Complete Backup . <ul style="list-style-type: none"> • Make sure that your backup includes the schema version registry table. See Backing Up the Schema Version Registry Table. • If you have modified or customized any of the startup scripts or any of the configuration files in your existing domain (for example, setting a value for the cookie-path property), you need to copy them to the temporary directory location (outside of the existing domain) during the upgrade, and redeploy them after the upgrade.

Table 2-1 (Cont.) Tasks to Perform Before You Upgrade Oracle Fusion Middleware

Task	Description
<p>Optional 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 Cloning Your Production Environment for Testing.</p>
<p>Required Verify that you install and upgrade your product on a supported hardware and software configuration.</p> <p>CAUTION: Do not attempt an upgrade if you are unable to use the latest supported operating system. As with all supported configurations, failure to comply with these requirements may cause your upgrade to fail.</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 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>Make sure that you have applied the latest patches to your components before you upgrade.</p> <p>See Verifying Certification and System Requirements.</p>
<p>Required for 32-bit Operating Systems Only 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>Optional Update the 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 Updating Policy Files when Using Enhanced Encryption (AES 256).</p>
<p>Optional Purge any outdated or unused data before you upgrade.</p>	<p>To optimize performance, Oracle strongly recommends that you purge the data and objects that are not used in the upgraded environment.</p> <p>See Purging Unused Data.</p>
<p>Required for Oracle Database Users Only Before you upgrade an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12c (12.2.1.4.0).</p>	<p>If you are using an Edition-Based Redefinition (EBR) database, you must create the edition before you start the upgrade.</p>
<p>Optional Create a Non-SYSDBA user to run the Upgrade Assistant.</p>	<p>Oracle recommends that you create the FMW user to run the Upgrade Assistant. The FMW user can run the Upgrade Assistant without any system administration privileges.</p> <p>See Creating a Non-SYSDBA User to Run the Upgrade Assistant.</p>
<p>Optional Identify the schemas that are currently in your domain before you begin.</p>	<p>It is important that you know the schemas that 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>

Creating a Complete Backup

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

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

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

See:

- [Backing Up Your Environment in *Oracle Fusion Middleware Administering Oracle Fusion Middleware*](#)
- [Upgrading and Preparing Your Oracle Databases for 12c \(12.2.1.4.0\) in *Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*](#)
- [Backing Up the Schema Version Registry Table](#)
Your system backup must include the `SYSTEM.SCHEMA_VERSION_REGISTRY$` table or the `FMWREGISTRY.SCHEMA_VERSION_REGISTRY$` table.
- [Maintaining Customized Domain and Environment Settings](#)
If you have modified any domain-generated, server startup scripts, or configuration files in your pre-upgrade environment, it is important to note that these changes are overwritten during the installation, domain upgrade, and reconfiguration operations. Save your customized files to a shared library location so that you can continue to use them after the upgrade.

Backing Up the Schema Version Registry Table

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

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

Note:

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

Maintaining Customized Domain and Environment Settings

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

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

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

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

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

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

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

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

 **Note:**

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

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.

 **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.

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).

 **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.

Verifying Certification and System Requirements

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

 **Note:**

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

 **WARNING:**

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

- [Verify Your Environment Meets Certification Requirements](#)
Oracle has tested and verified the performance of your product on all certified systems and environments. Make sure that you are installing your product on a supported hardware or software configuration.
- [Verify System Requirements and Specifications](#)
It is important to verify that the system requirements such as disk space, available memory, specific platform packages and patches, and other operating system-specific items are met.
- [Verify That the Database Hosting Oracle Fusion Middleware is Supported](#)
You must have a supported Oracle database configured with the required schemas before you run Oracle Fusion Middleware 12c (12.2.1.4.0).
- [Verify That the JDK Is Certified for This Release of Oracle Fusion Middleware](#)
At the time this document was published, the certified JDK for 12c (12.2.1.4.0) was 1.8.0_211.

Verify Your Environment Meets Certification Requirements

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

Whenever new certifications occur, they are added to the appropriate certification document right away. New certifications can occur at any time, and for this reason the certification documents are kept outside of the documentation libraries and are available on Oracle Technology Network. See the Certification Matrix for 12c (12.2.1.4.0).

Verify System Requirements and Specifications

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

Use the *Oracle Fusion Middleware System Requirements and Specifications* document to verify that the requirements of the certification are met. For example, if the Certification Matrix for 12c (12.2.1.4.0) indicates that your product is certified for installation on 64-Bit Oracle Linux 7, the System Requirements and Specifications document should be used to verify that your Oracle Linux 7 system has met the required minimum specifications such as disk space, available memory, specific platform packages and patches, and other operating system-specific items. This document is updated as needed and resides outside of the documentation libraries on the Oracle Technology Network (OTN).

 **Note:**

When you install the Oracle Fusion Middleware Release 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.

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.

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 12c (12.2.1.3.0) software is working properly on the 64-bit machine, and only then perform the upgrade to Oracle Fusion Middleware 12c (12.2.1.4.0).

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

 **Note:**

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

Upgrading an operating system typically involves the following:

 **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.

- [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 12c (12.2.1.3.0) 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 12c (12.2.1.3.0) 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 12c (12.2.1.3.0) 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 12c (12.2.1.3.0). The directory structure on the target machine must be identical to the structure of the host machine.
- **Install the 12c (12.2.1.4.0) Product Distributions on the Target Machine**
Oracle recommends an Out-of-Place approach for upgrade. Therefore, you must install the 12c (12.2.1.4.0) 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.

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.

Stop the Managed Servers

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

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

When prompted, enter your user name and password.

Stop the Administration Server

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

To stop the Administration Server, use the `stopWebLogic` script:

- (UNIX) `EXISTING_DOMAIN_HOME/bin/stopWebLogic.sh`
- (Windows) `EXISTING_DOMAIN_HOME\bin\stopWebLogic.cmd`

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

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. See `stopNodeManager` in *Oracle Fusion Middleware WLST Command Reference for WebLogic Server*.

Back Up All Files from the 32-bit Host Machine

Make sure that you have created a complete backup of your entire 12c (12.2.1.3.0) 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.

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.

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:

- `12c_DOMAIN_HOME`
- `12c/nodemanager` directory located in `12c_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.

Set Up the Target 64-bit Machine with the 12c (12.2.1.3.0) 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 vary by operating system. Consult your operating system's administration documentation for more information.

Restore the 12c (12.2.1.3.0) 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 12c (12.2.1.3.0). The directory structure on the target machine must be identical to the structure of the host machine.

See [Recovering Your Environment](#) in *Oracle Fusion Middleware Administrator's Guide*.

Install the 12c (12.2.1.4.0) Product Distributions on the Target Machine

Oracle recommends an Out-of-Place approach for upgrade. Therefore, you must install the 12c (12.2.1.4.0) 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.

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.

If you are upgrading additional components, see the component-specific upgrade guide.

Note:

The Node Manager upgrade procedure requires access to the original Node Manager files. Use the 12c (12.2.1.3.0) 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](#).

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 (12.2.1.4.0).

Review the Fusion Middleware database requirements before starting the upgrade to ensure that the database hosting Oracle Fusion Middleware is supported and has sufficient space to perform an upgrade. See the Certification Matrix for 12c (12.2.1.4.0).

Note:

If your database version is no longer supported, you must upgrade to a supported version before starting an upgrade. See [Upgrading and Preparing Your Oracle Databases for 12c \(12.2.1.4.0\)](#) in *Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*.

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

At the time this document was published, the certified JDK for 12c (12.2.1.4.0) was 1.8.0_211.

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

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

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

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

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

Updating Policy Files when Using Enhanced Encryption (AES 256)

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

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

Some of the security algorithms used in Fusion Middleware 12c (12.2.1.4.0) require additional policy files for the JDK. See [Java Cryptography Architecture Oracle Providers Documentation](#).

Note:

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

Purging Unused Data

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

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

Creating an Edition on the Server for Edition-Based Redefinition

Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12c (12.2.1.4.0).

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

**Note:**

This task must be completed by an Oracle Database User with DBA privileges.

Before upgrading an Edition-Based Redefinition (EBR) enabled schema, you must connect to the database server and create an edition on the database server for 12c (12.2.1.4.0). The new edition for 12c (12.2.1.3.0) must be a child of your existing 12c or 12c (12.2.1.4.0) edition.

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

```
create edition Oracle_FMW_12_2_1_4_0 as child of  
Oracle_FMW_12_2_1_3_0;
```

where `Oracle_FMW_12_2_1_3_0` is an example of the edition name you specified in RCU 12.2.1.3 when the 12.2.1.3 schemas were created. Be sure to provide the actual name used when creating the edition.

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

```
Edition created.
```

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

```
ALTER DATABASE DEFAULT EDITION = Oracle_FMW_12_2_1_4_0;
```

Creating a Non-SYSDBA User to Run the Upgrade Assistant

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

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

 **Notes:**

The non-SYSDBA user FMW is created solely for the purpose of running the Upgrade Assistant. After this step is complete, drop the FMW user. Note that privileges required for running the Upgrade Assistant may change from release to release.

By default, the `v$xatrans$` table does not exist. You must run the `XAVIEW.SQL` script to create this table before creating the user. Moreover, the `grant select` privilege on the `v$xatrans$` table is required only by Oracle Identity Governance. If you do not require Oracle Identity Governance for configuration, or if you do not have the `v$xatrans$` table, then remove the following line from the script:

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

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

```
create user FMW identified by password;
grant dba to FMW;
grant execute on DBMS_LOB to FMW with grant option;
grant execute on DBMS_OUTPUT to FMW with grant option;
grant execute on DBMS_STATS to FMW with grant option;
grant execute on sys.dbms_aqadm to FMW with grant option;
grant execute on sys.dbms_aqin to FMW with grant option;
grant execute on sys.dbms_aqjms to FMW with grant option;
grant execute on sys.dbms_aq to FMW with grant option;
grant execute on utl_file to FMW with grant option;
grant execute on dbms_lock to FMW with grant option;
grant select on sys.V_$INSTANCE to FMW with grant option;
grant select on sys.GV_$INSTANCE to FMW with grant option;
grant select on sys.V_$SESSION to FMW with grant option;
grant select on sys.GV_$SESSION to FMW with grant option;
grant select on dba_scheduler_jobs to FMW with grant option;
grant select on dba_scheduler_job_run_details to FMW with grant option;
grant select on dba_scheduler_running_jobs to FMW with grant option;
grant select on dba_aq_agents to FMW with grant option;
grant execute on sys.DBMS_SHARED_POOL to FMW with grant option;
grant select on dba_2pc_pending to FMW with grant option;
grant select on dba_pending_transactions to FMW with grant option;
grant execute on DBMS_FLASHBACK to FMW with grant option;
grant execute on dbms_crypto to FMW with grant option;
grant execute on DBMS_REPUTIL to FMW with grant option;
grant execute on dbms_job to FMW with grant option;
grant select on pending_trans$ to FMW with grant option;
grant select on dba_scheduler_job_classes to FMW with grant option;
grant select on sys.DBA_TABLESPACE_USAGE_METRICS to FMW with grant option;
grant select on SYS.DBA_DATA_FILES to FMW with grant option;
grant select on SYS.V_$ASM_DISKGROUP to FMW with grant option;
grant select on v$xatrans$ to FMW with grant option;
```

```
grant execute on sys.dbms_system to FMW with grant option;
grant execute on DBMS_SCHEDULER to FMW with grant option;
grant select on dba_data_files to FMW with grant option;
grant execute on UTL_RAW to FMW with grant option;
grant execute on DBMS_XMLDOM to FMW with grant option;
grant execute on DBMS_APPLICATION_INFO to FMW with grant option;
grant execute on DBMS_UTILITY to FMW with grant option;
grant execute on DBMS_SESSION to FMW with grant option;
grant execute on DBMS_METADATA to FMW with grant option;
grant execute on DBMS_XMLGEN to FMW with grant option;
grant execute on DBMS_DATAPUMP to FMW with grant option;
grant execute on DBMS_MVIEW to FMW with grant option;
grant select on ALL_ENCRYPTED_COLUMNS to FMW with grant option;
grant select on dba_queue_subscribers to FMW with grant option;
grant execute on SYS.DBMS_ASSERT to FMW with grant option;
grant select on dba_subscr_registrations to FMW with grant option;
grant manage scheduler to FMW;
```

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

```
grant execute on SYS.DBMS_FLASHBACK to fmw with grant option;
grant execute on sys.DBMS_SHARED_POOL to fmw with grant option;
grant execute on SYS.DBMS_XMLGEN to FMW with grant option;
grant execute on SYS.DBMS_DB_VERSION to FMW with grant option;
grant execute on SYS.DBMS_SCHEDULER to FMW with grant option;
grant execute on SYS.DBMS_SQL to FMW with grant option;
grant execute on SYS.DBMS_UTILITY to FMW with grant option;
grant ctxapp to FMW with admin option;
grant execute on SYS.DBMS_FLASHBACK TO FMW with grant option;
grant create MATERIALIZED VIEW to FMW with admin option;
grant all on SCHEMA_VERSION_REGISTRY TO FMW with grant option;
grant create SYNONYM to FMW with admin option;
grant execute on CTXSYS.CTX_ADM to FMW with grant option;
grant execute on CTXSYS.CTX_CLS TO FMW with grant option;
grant execute on CTXSYS.CTX_DDL TO FMW with grant option;
grant execute on CTXSYS.CTX_DOC TO FMW with grant option;
grant execute on CTXSYS.CTX_OUTPUT TO FMW with grant option;
grant execute on CTXSYS.CTX_QUERY TO FMW with grant option;
grant execute on CTXSYS.CTX_REPORT TO FMW with grant option;
grant execute on CTXSYS.CTX_THES TO FMW with grant option;
grant execute on CTXSYS.CTX_ULEXER TO FMW with grant option;
grant create JOB to FMW with admin option;
```

Identifying Existing Schemas Available for Upgrade

This optional task enables you to review the list of available schemas before you begin the upgrade by querying the schema version registry. The registry contains schema information

such as version number, component name and ID, date of creation and modification, and custom prefix.

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

1. If you are using an Oracle database, connect to the database by using an 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 an upgrade is not needed for a schema, the `schema_version_registry` table retains the schema at its pre-upgrade version.

3. Note the schema prefix name that was used for your existing schemas. You will use the same prefix when you create new 12c (12.2.1.4.0) schemas.

Notes:

- If your existing schemas are not from a supported version, then you must upgrade them to a supported version before using the 12c (12.2.1.4.0) upgrade procedures. Refer to your pre-upgrade version documentation for more information.
- Some components, such as Oracle Enterprise Data Quality, Oracle GoldenGate Monitor, and Oracle GoldenGate Veridata, support an upgrade from versions other than the standard Oracle Fusion Middleware supported versions.
- If you used an OID-based policy store in the earlier versions, make sure to create a new OPSS schema before you perform the upgrade. After the upgrade, the OPSS schema remains an LDAP-based store.
- You can only upgrade schemas for products that are available for upgrade in Oracle Fusion Middleware release 12c (12.2.1.4.0). Do not attempt to upgrade a domain that includes components that are not yet available for upgrade to 12c (12.2.1.4.0).

Performing the Oracle WebCenter Pre-Upgrade Tasks

Before upgrading to Oracle WebCenter products 12c (12.2.1.4.0), perform pre-upgrade tasks that apply to your environment.

The pre-upgrade tasks for Oracle WebCenter include the following:

Pre-Upgrade Task	More Information
Disable all deprecated or obsolete components before upgrade.	Disabling Obsolete Components Before Upgrade
Migrate the policy store to database-based policy store if your WebCenter Portal 11g environment uses a file-based policy store or Oracle Internet Directory (OID) as the policy store.	Using a Database-Based Security Store in <i>Oracle Fusion Middleware Securing Applications with Oracle Platform Security Services</i>
Complete the pre-upgrade tasks for Oracle WebCenter Content (if you will be upgrading Content or WebCenter Content Web UI).	Performing Pre-Upgrade Tasks for WebCenter Content
Complete the pre-upgrade tasks for Oracle WebCenter Enterprise Capture (if you will be upgrading Enterprise Capture).	Performing Pre-Upgrade Tasks for Oracle WebCenter Enterprise Capture
Complete the pre-upgrade tasks for Oracle WebCenter Portal (if you will be upgrading WebCenter Portal).	Performing Pre-Upgrade Tasks for Oracle WebCenter Portal

- [Disabling Obsolete Components Before Upgrade](#)
- [Determining Which Schemas Can be Upgraded for WebCenter](#)
- [Upgrading the Metadata Schema \(_MDS\) Before Upgrading WebCenter Content Web UI 11g Domain](#)
If you are upgrading an Oracle WebCenter Content Web UI 11g domain to 12c (12.2.1.4.0), then you must upgrade the _MDS schema before starting the domain upgrade.

Disabling Obsolete Components Before Upgrade

The following components should be disabled before the upgrade because they are obsolete or disabled.



Note:

Failure to disable these components may cause the upgrade to fail and content servers will not be able to start.

- AppAdapterUniversal
- CIS_Helper
- ContentTrackerReports
- SiteStudioExternalApplications
- FormEditor (which uses the now deprecated FCKEditor)
- proxyconnections8
- UrmAgent
- PDFExportConverter (IBR)
- Folders_g

For more information about disabling components, see Enabling or Disabling a Component Using the Component Manager in *Oracle Fusion Middleware Administering Oracle WebCenter Content*.

Determining Which Schemas Can be Upgraded for WebCenter

This table describes the WebCenter schemas that can be upgraded to 12c (12.2.1.4.0). Your environment may or may not use all of these schemas.

Table 2-2 WebCenter Schemas that can be upgraded

Component Name	Schema(s)	Schema Version Before Upgrade	Schema Version After Upgrade	Dependencies
Oracle Enterprise Capture	<i>prefix_CAPTURE</i>	11.1.1.8 12.2.1.0	12.2.1.0	Metadata Services (_MDS) Capture is an ADF application and therefore requires the MDS schema be upgraded before the WebCenter servers are started. Oracle Platform Security Services (_OPSS) Capture does not use the OPSS schema directly, but requires that the OPSS schema be upgraded as part of the upgrade process.
WebCenter Portal (previously WebCenter Spaces)	<i>prefix_WEBCENTER</i>	11.1.1.8 12.2.1.1 12.2.1.3	12.2.1.4	The <i>prefix_MDS</i> schema must be upgraded first.
Discussions (WebCenter Suite)	<i>prefix_DISCUSSIONS</i>	11.1.1.8 12.2.1.0	12.2.1.0	None.
Discussions Crawler	<i>prefix_DISCUSSIONS_CRAWLER</i>	11.1.1.9 12.2.1.0	12.2.1.0	The <i>prefix_DISCUSSIONS</i> schema must be upgraded first. Note: You need to specify the password for the <i>DISCUSSION_CRAWLER</i> schema manually. However, the password for other schemas is automatically populated.

Table 2-2 (Cont.) WebCenter Schemas that can be upgraded

Component Name	Schema(s)	Schema Version Before Upgrade	Schema Version After Upgrade	Dependencies
Activity Graph and Analytics	<i>prefix_ACTIVITIES</i>	11.1.1.8 12.2.1.0	12.2.1.0	None.
Portlets	<i>prefix_PORTLET</i>	11.1.1.2.0 12.2.1.0	12.2.1.0	None.
Oracle Content Server 11g - Complete	<i>prefix_OCS</i>	11.1.1.9 12.2.1.0	12.2.1.0	None.
Oracle WebCenter Sites	<i>prefix_WCSITES</i>	12.2.1.3	12.2.1.4	None.
Oracle WebCenter Content: Imaging	<i>prefix_IPM</i>	11.1.1.2.1 12.2.1.3	12.2.1.3	None.

Upgrading the Metadata Schema (_MDS) Before Upgrading WebCenter Content Web UI 11g Domain

If you are upgrading an Oracle WebCenter Content Web UI 11g domain to 12c (12.2.1.4.0), then you must upgrade the _MDS schema before starting the domain upgrade.

Note:

This step is required **ONLY** if you are upgrading a WebCenter Content **Web UI domain** Release 11g to Release 12c.

If you are only upgrading a WebCenter Content server domain, see [Upgrading an Oracle WebCenter Domain](#) .

The 12c (12.2.1.4.0)Web UI is not compatible with WebCenter Content 11g. You must use an Oracle WebCenter Content12c (12.2.1.4.0) and Application Developer Framework (ADF) 12c (12.2.1.4.0) container with Web UI 12c (12.2.1.4.0).

The MDS schema upgrade must be completed before upgrading WebCenter Content Web UI 11g because during the upgrade, the Upgrade Assistant will attempt to upgrade all schemas that are referenced from the domain. Because the MDS schema (which is not used by WebCenter Content proper) is only referenced in the 11g (decommissioned) domain, the upgrade process will not see it (nor upgrade it). By upgrading the MDS schema before starting the WebCenter Content domain upgrade, the Upgrade Assistant will upgrade that content as well.

 **Note:**

After the `_MDS` schema is upgraded, proceed to the standard 12c upgrade process: [Upgrading an Oracle WebCenter Domain](#) . After the upgrade you may have to update the `WccAdf.ear` file as described in [Updating the WccAdf.ear File \(Optional\)](#) and extend the domain to include the Web UI as described in [Configuring the Oracle WebCenter Content Server Domain to Include WebCenter Content - Web UI](#)

Change directory to `NEW_ORACLE_HOME/oracle_common/upgrade/bin` on UNIX operating systems or `NEW_ORACLE_HOME\oracle_common\upgrade\bin` on Windows operating systems.

Enter the following command to start the Upgrade Assistant.

- (UNIX) `./ua`
- (Windows) `ua.bat`

To upgrade the MDS schema, perform the following steps:

1. Start the Upgrade Assistant and select **Individually Selected Schemas**.
2. Provide the database credentials and the 11g schema owner name and password.
3. Choose Oracle Metadata Services from the component list.
4. During the Examine phase, make sure that the correct source version is being upgraded. If the correct source version is displayed, continue with the upgrade.

3

Upgrading an Oracle WebCenter Domain

It is important to understand the general upgrade procedures for Oracle WebCenter and WebCenter Content. Also, in order to Upgrade Oracle WebCenter Domain, some additional component-specific tasks may be required.

The procedures outlined in the following sections describe the high-level process of upgrading a basic WebCenter domain to 12c (12.2.1.4.0). Most upgrades follow these general procedures, but the actual upgrade procedures you will perform depend on which components are being upgraded. There may be additional pre- or post- upgrade procedures associated with your components. Therefore, you will need to locate the upgrade procedures for each component in your pre-upgrade environment to complete the domain upgrade.

For example, if your Oracle WebCenter domain includes Oracle WebCenter Content and WebCenter Portal, you would need to follow the procedures described in [Upgrading Oracle WebCenter Content](#) and [Upgrading Oracle WebCenter Portal 11g Installations](#).

- [About the Oracle WebCenter Upgrade Process](#)
Review the process flow for upgrading WebCenter products to get a better understanding of the upgrade procedures and when you will perform them.
- [Installing a Product Distribution](#)
Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and the WebCenter Content distributions on the target system and install them using Oracle Universal Installer.
- [Creating the Required 12c Schemas with the RCU](#)
When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.
- [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 you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.
- [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.
- [About Reconfiguring the Domain](#)
Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).

- [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.
- [Performing Post-Upgrade Configuration Tasks](#)
You may have to perform additional configuration tasks after an upgrade depending on which components are in your deployment.

About the Oracle WebCenter Upgrade Process

Review the process flow for upgrading WebCenter products to get a better understanding of the upgrade procedures and when you will perform them.

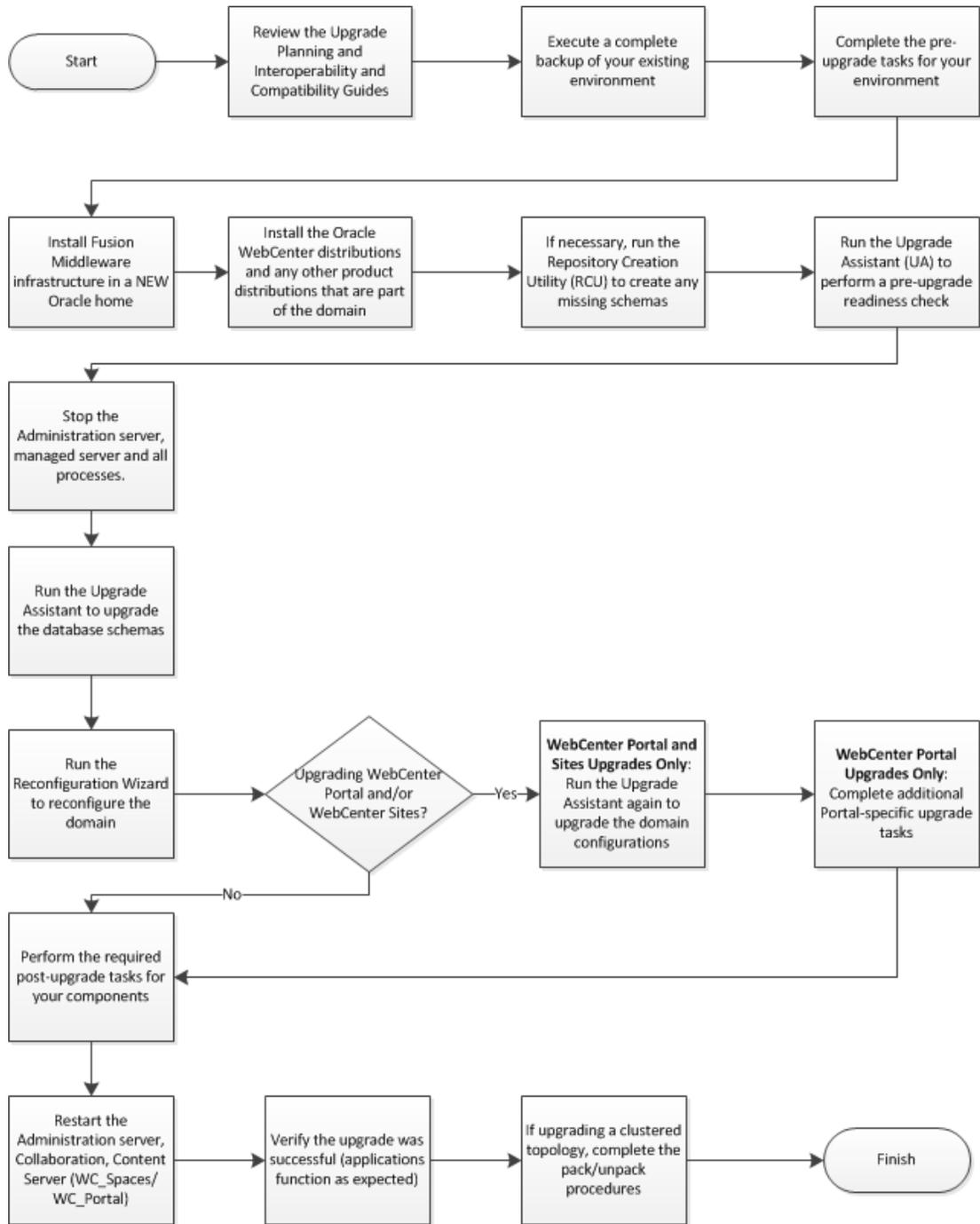


Note:

If you have a multi-node environment and want to perform this upgrade without stopping your servers, see [Performing a Reduced Downtime Upgrade](#).

This process flow shows the high-level procedures for upgrading a WebCenter domain to 12c (12.2.1.4.0). The actual procedures you will perform depends on your pre-upgrade environment and the components you will be upgrading.

Figure 3-1 Upgrading Oracle WebCenter to 12c (12.2.1.4.0)



Task	Description
Required	Pre-Upgrade Tasks for Oracle WebCenter Components
Complete all of the Oracle Fusion Middleware standard pre-upgrade tasks, as well as any additional component-specific tasks you may be required to perform.	

Task	Description
<p>Required Install the product distributions for all the products that are part of the domain.</p>	<p>Note that in 12c, the WebLogic Server and JRF are part of the Infrastructure distribution and must be installed first.</p> <p>The binaries should be installed into a new Oracle home on the same host as the existing deployment. Only install binaries for products that exist on the existing deployment. Adding new products can only be done after the upgrade is complete.</p>
<p>For 11g to 12c Upgrade Only: Run the 12c Repository Creation Utility (RCU) to create the required 12c schemas (<code>_STB</code> and <code>_OPSS</code>). The Service Table (<code>_STB</code>) schema is required in 12c. The OPSS (<code>_OPSS</code>) schema is required if an OID-based policy store was used in 11g.</p>	<p>If you are upgrading from a previous 12c release, then you will already have these schemas in your repository.</p>
<p>Optional Run a pre-upgrade readiness check with the Upgrade Assistant.</p>	<p>When run in <code>-readiness</code> mode, the Upgrade Assistant performs a read-only check to determine if there might be problems in the starting point environment that would prevent a successful upgrade.</p> <p>The checks vary by component and a complete report is generated to help troubleshoot any potential issues.</p>
<p>Required Stop the Administration Server, Managed Servers and any other running applications in your existing deployment.</p>	<p>Failure to shut down the existing environment during the upgrade can corrupt your schemas and/or component configurations.</p>
<p>Required Run the Upgrade Assistant to upgrade individually selected schemas or all schemas used by the domain.</p>	<p>Oracle recommends that you allow the Upgrade Assistant to upgrade all schemas within the selected domain whenever possible.</p>
<p>Required Run the Reconfiguration Wizard to reconfigure the domain. The Reconfiguration Wizard is a new tool in Oracle Fusion Middleware 12c.</p>	
<p>WebCenter Portal and Sites Users Only: Run the Upgrade Assistant (again) to upgrade any remaining component configurations.</p>	<p>Upgrading Domain Component Configurations</p>
<p>WebCenter Content Users Only: You will not run the Upgrade Assistant as the necessary configuration changes are performed automatically at server startup (post upgrade) without user intervention.</p>	
<p>WebCenter Portal Users Only: You must complete a set of additional procedures to upgrade Oracle WebCenter Portal to 12c.</p>	<p>Upgrading Oracle WebCenter Portal 11g Installations</p>
<p>Required Complete all of the required post-upgrade tasks described in your component-specific documentation. Some components will not work correctly if these tasks are not performed after the upgrade.</p>	<p>Performing Post-Upgrade Configuration Tasks</p>
<p>Required Restart the administration server and the managed servers.</p>	

Task	Description
Required Verify the upgrade was successful (applications function as expected, etc.)	Verifying the New Applications Work as Expected
Optional Upgrade WebCenter for a cluster topology, if applicable	Upgrading WebCenter in a Clustered Topology

Installing a Product Distribution

Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and the WebCenter Content distributions on the target system and install them using Oracle Universal Installer.

Note:

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

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (fmw_12.2.1.4.0_infrastructure_generic.jar)
 - Oracle WebCenter Content (fmw_12.2.1.4.0_wccontent_generic.jar)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`

After your Infrastructure installation is complete, you will install the remaining distributions the same way using the correct distribution names. For example, to start the installation program for Oracle WebCenter Content, use `fmw_12.2.1.4.0_wccontent_generic.jar` as the distribution name

5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

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

9. On the Installation Type screen, select the products to install.

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

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

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

Click **Install** to begin the installation.

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

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

14. After you have installed Oracle Fusion Middleware Infrastructure, repeat the steps above to install the other product distributions.

Creating the Required 12c Schemas with the RCU

When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.

 **Note:**

If you are upgrading from a previous 12c release of Oracle Fusion Middleware, you do not need to re-create these schemas if they already exist. Refer to the steps below to identify the existing schemas in your domain.

The following schemas must exist before you upgrade. If you are upgrading from 12c, and you are not sure which schemas you currently have, refer to the steps below to identify the existing schemas in your domain. You do not need to re-create these schemas if they already exist.

- **Service Table** schema (*prefix_STB*). This schema is required for domain-based upgrades. It stores basic schema configuration information (for example, schema prefixes and passwords) that can be accessed and used by other Oracle Fusion Middleware components during the domain creation. This schema is automatically created when you run the Repository Creation Utility (RCU), where you specify the existing schema owner prefix that you used for your other 12c schemas.

 **Note:**

If the Service Table schema does not exist, you may encounter the error message UPGAST-00328 : The schema version registry table does not exist on this database. If that happens it is necessary to create the service table schema in order to run Upgrade Assistant

- **Oracle Platform Security Services (OPSS)** schema (*prefix_OPSS*). This schema is required if you are using an OID-based security store in 12c. This schema is automatically created when you run the Repository Creation Utility (RCU). The only supported LDAP-based OPSS security store is Oracle Internet Directory (OID). An LDAP-based policy store is typically used in production environments. You do not need to reassociate an OID-based security store before upgrade. While the Upgrade Assistant is running, you can select the OPSS schema. The Upgrade Assistant upgrades the OID-based security store automatically.

 **Note:**

The 12c OPSS database schema is required so that you can reference the 12c schema during the reconfiguration of the domain. Your domain continues to use the OID-based security store after the upgrade is complete.

- **Audit schemas** (OPSS_AUDIT_VIEWER). If you have used an XML-based OPSS_AUDIT schema, or the Portal or Services schema in 11g, you will need to create a new 12c OPSS_AUDIT_VIEWER schema by using the RCU. Otherwise, the domain reconfiguration will fail.
- **WebLogic Server schemas** (_WLS): As of release 12.2.1.3 the WebLogic Server schema is required before starting the upgrade.

To create the schemas with the RCU:

1. (Optional) If you are upgrading from 12c, and you wish to confirm the schemas which are present in your existing domain, then connect to the database as a user with DBA privileges, and run the following code 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. Verify that a certified JDK already exists on your system by running `java -version` from the command line. For 12c (12.2.1.4.0), the certified JDK is 1.8.0_211 and later.

Ensure that the `JAVA_HOME` environment variable is set to the location of the certified JDK. For example:

- (UNIX) `setenv JAVA_HOME=/home/Oracle/Java/jdk1.8.0_211`
- (Windows) `set JAVA_HOME=C:\home\Oracle\Java\jdk1.8.0_211`

Add `$JAVA_HOME/bin` to `$PATH`.

3. Go to the `oracle_common/bin` directory.

On UNIX operating systems:

```
NEW_ORACLE_HOME/oracle_common/bin
```

On Windows operating systems:

```
NEW_ORACLE_HOME\oracle_common\bin
```

where `NEW_ORACLE_HOME` is your 12c (12.2.1.4.0) Oracle home.

4. Start the RCU:

- (UNIX) `./rcu`
- (Windows) `rcu.bat`

5. On the Welcome screen, click **Next**.

6. On the Create Repository screen, select **Create Repository** and then select **System Load and Product Load**.

If you do not have DBA privileges, select **Prepare Scripts for System Load**. This will generate a SQL script containing all the same SQL statements and blocks that would have been called if the RCU were to execute the actions for the selected components. After the script is generated, a user with the necessary SYS or SYSDBA privileges can execute the script to complete the system load phase.

Click **Next**.

7. On the Database Connection Details screen, select the **Database Type** and enter the connection information for the database that hosts the 12c schemas. See the pertinent table below.

Table 3-1 Connection Credentials for Oracle Databases and Oracle Databases with Edition-Based Redefinition

Option	Description and Example
Host Name	Specify the name of the server where your database is running in the following format: <code>examplehost.exampledomain.com</code> For Oracle RAC databases, specify the VIP name or one of the node names in this field.
Port	Specify the port number for your database. The default port number for Oracle databases is 1521.
Service Name	Specify the service name for the database. Typically, the service name is the same as the global database name. For Oracle RAC databases, specify the service name of one of the nodes in this field. For example: <code>examplehost.exampledomain.com</code>
Username	Enter the user name for your database. The default user name is <code>SYS</code> .
Password	Enter the password for your database user.
Role	Select the database user's role from the drop-down list: Normal or SYSDBA

Table 3-2 Connection Credentials for MySQL Databases

Option	Description and Example
Host Name	Specify the host name, IP address, or complete server name in <code>host\server</code> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.
Password	Enter the password for your database user.

Table 3-3 Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Unicode Support	Select Yes or No from the drop-down list.

Table 3-3 (Cont.) Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Server Name	Specify the host name, IP address, or complete server name in <i>host\server</i> format of the server where your database is running. MSSQL named instances: A named instance is identified by the network name of the computer and the instance name that you specify during installation. The client must specify both the server name and the instance name when connecting.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.
Password	Enter the password for your database user.

Table 3-4 Connection Credentials for IBM DB2 Databases

Option	Description and Example
Server Name	Specify the host name, IP address, or complete server name in <i>host\server</i> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with DB Owner privileges. The default user name for IBM DB2 databases is <i>db2inst1</i> .
Password	Enter the password for your database user.

If the prerequisite check is successful, click **OK** to continue to the next screen. If the check fails, review the details you entered and try again.

- On the Select Components screen, select **Select existing prefix** and select the prefix that was used to create the existing 11g schemas from the drop-down menu (for example, *DEV11G*). This prefix is used to logically group schemas together for use in this domain.

 **Note:**

The Common Infrastructure Services (*prefix_STB*) and Oracle Platform Security Services (*prefix_OPSS*) schemas are selected by default if they have not yet been created.

Make a note of the prefix and schema names for the components you are installing as you will need this information when you configure the installation. Click **Next**.

- In the Checking Prerequisites dialog, verify that the prerequisites check is successful, then click **OK**.

10. On the Schema Passwords screen, specify the passwords for your schema owners.
Make a note of the passwords you enter on this screen as you will need this information while configuring your product installation.
11. On the Map Tablespaces screen, configure the required tablespace mapping for the schemas you want to create.
Click **Next**, then click **OK** in the confirmation dialog. When the progress dialog shows the tablespace creation is complete, click **OK**.
You see the **Encrypt Tablespace** check box only if you have enabled Transparent Data Encryption (TDE) in the database (Oracle or Oracle EBR) when you start the RCU. Select the **Encrypt Tablespace** check box on the Map Tablespaces screen to encrypt all new tablespaces that the RCU creates.
12. Verify the information on the Summary screen and click **Create** to begin schema creation.
This screen contains information about the log files that were created from this RCU operation. Click on the name of a particular log file to view the contents of that file.
13. Review the information on the Completion Summary screen to verify that the operation is completed successfully. Click **Close** to complete the schema creation.

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 Parameters](#)

Upgrade Assistant 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 Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 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 3-5 (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"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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**.

 **Note:**

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** option and specify the **Schema Password**.

 **Note:**

The Upgrade Assistant automatically enables default credentials. If you are unable to connect, make sure that you manually enter the credentials for your schema before you continue.

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

4. On the Readiness Summary screen, review the summary of the readiness checks that will be 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 3-6 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /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, 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, 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, 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 not include all of these checks.

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

```
This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
```

Log file is located at: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/
oracle_common/upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain

Starting readiness check of components.

Oracle Platform Security Services

Starting readiness check of Oracle Platform Security Services.

Schema User Name: DEV3_OPSS

Database Type: Oracle Database

Database Connect String:

VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0.

Readiness checks will now be performed.

Starting schema test: TEST_DATABASE_VERSION Test that the
database server version number is supported for upgrade

INFO Database product version: Oracle Database 12c Enterprise
Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options

Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS

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 that the schema does not contain any
unexpected tables TEST_UNEXPECTED_TABLES

Completed schema test: Test that the schema does not contain any
unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema
does not contain any unexpected tables

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 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: SEQUENCE_TEST Test that the Oracle Platform
Security Services schema sequence and its properties are valid

Completed schema test: SEQUENCE_TEST --> Test that the Oracle
Platform Security Services schema sequence and its properties are
valid +++ PASS

Finished readiness check of Oracle Platform Security Services with status: SUCCESS.

Oracle Audit Services

Starting readiness check of Oracle Audit Services.

Schema User Name: DEV3_IAU

Database Type: Oracle Database

Database Connect String:

VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0. Readiness checks will now be performed.

Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade

INFO Database product version: Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

Completed schema test: TEST_DATABASE_VERSION --> Test that the database server version number is supported for upgrade +++ PASS

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_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_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 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_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_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 OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper datatypes

Completed datatype test for table OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper datatypes +++ PASS

Starting datatype test for table IAU_CUSTOM_01: TEST_COLUMN_DATATYPES_V2

```

--> Test that all table columns have the proper datatypes
    Completed datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
    Completed datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
    Completed datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting datatype test for table OWSM_PM_EJB:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
    Completed datatype test for table OWSM_PM_EJB:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting datatype test for table XMLPSEVER:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
    Completed datatype test for table XMLPSEVER:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting datatype test for table SOA_HCFP:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
    Completed datatype test for table SOA_HCFP:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
    Starting schema test: SEQUENCE_TEST Test that the audit schema
sequence and its properties are valid
    Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
    Starting schema test: SYNONYMS_TEST Test that the audit schema
required synonyms are present
    Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
    Finished readiness check of Oracle Audit Services with status:
FAILURE.

Common Infrastructure Services
    Starting readiness check of Common Infrastructure Services.
        Schema User Name: DEV3_STB
        Database Type: Oracle Database
        Database Connect String:
    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
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test

```

```
that the schema contains all the required tables
  Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does
not contain any unexpected tables
  Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test
that the schema does not contain any unexpected tables
  Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains
all the required database views
  Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test that
the schema contains all the required database views
  Starting schema test: TEST_MISSING_COLUMNS Test that tables and views
are not missing any required columns
  Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test that
tables and views are not missing any required columns
  Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
  Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
  INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
  Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
  Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++ Test that
the database server version number is supported for upgrade
  Finished readiness check of Common Infrastructure Services with status:
SUCCESS.
```

Oracle JRF

```
  Starting readiness check of Oracle JRF.
  Finished readiness check of Oracle JRF with status: SUCCESS.
```

System Components Infrastructure

```
  Starting readiness check of System Components Infrastructure.
  Starting config test: TEST_SOURCE_CONFIG Checking the source
configuration.
  INFO /oracle/work/middleware_1212/user_projects/domains/jrf_domain/opmn/
topology.xml was not found. No upgrade is needed.
  Completed config test: TEST_SOURCE_CONFIG --> Checking the source
configuration. +++ PASS
  Finished readiness check of System Components Infrastructure with status:
ALREADY_UPGRADED.
```

Common Infrastructure Services

```
  Starting readiness check of Common Infrastructure Services.
  Starting config test: CIEConfigPlugin.readiness.test This tests the
readiness of the domain from CIE side.
  Completed config test: CIEConfigPlugin.readiness.test --> This tests the
readiness of the domain from CIE side. +++ PASS
  Finished readiness check of Common Infrastructure Services with status:
SUCCESS.
```

```
Finished readiness check of components.
```

Stopping Servers and Processes

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

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

Note:

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

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

Step 1: Stop the Managed Servers

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

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

When prompted, enter your user name and password.

Step 2: Stop System Components

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

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

You can stop system components in any order.

Step 3: Stop the Administration Server

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

To stop the Administration Server, use the `stopWebLogic` script:

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

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

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

Step 4: Stop Node Manager

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

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

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.

- [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.
- [Starting the Upgrade Assistant](#)
Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).
- [Upgrading Oracle WebCenter 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.

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

3. Note the schema prefix name that was used for your existing schemas. You will use the same prefix when you create new 12c (12.2.1.4.0) schemas.

 **Notes:**

- If your existing schemas are not from a supported version, then you must upgrade them to a supported version before using the 12c (12.2.1.4.0) upgrade procedures. Refer to your pre-upgrade version documentation for more information.
- Some components, such as Oracle Enterprise Data Quality, Oracle GoldenGate Monitor, and Oracle GoldenGate Veridata, support an upgrade from versions other than the standard Oracle Fusion Middleware supported versions.
- If you used an OID-based policy store in the earlier versions, make sure to create a new OPSS schema before you perform the upgrade. After the upgrade, the OPSS schema remains an LDAP-based store.
- You can only upgrade schemas for products that are available for upgrade in Oracle Fusion Middleware release 12c (12.2.1.4.0). Do not attempt to upgrade a domain that includes components that are not yet available for upgrade to 12c (12.2.1.4.0).

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

 **Note:**

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 3-7 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 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 3-7 (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"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant

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

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 the schema upgrade operation that you want to perform:
 - **Individually Selected Schemas** if you want to select individual schemas for upgrade and you do not want to upgrade all of the schemas used by the domain.

 **Caution:**

Upgrade only those schemas that are used to support your 12c (12.2.1.4.0) components. Do not upgrade schemas that are currently being used to support components that are not included in Oracle Fusion Middleware 12c (12.2.1.4.0).

- **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.

 **Note:**

Oracle recommends that you select **All Schemas Used by a Domain** for most upgrades to ensure all of the required schemas are included in the upgrade.

Click **Next**.

3. If you selected **Individually Selected Schemas**: On the Available Components screen, select the components for which you want to upgrade schemas. When you select a component, the schemas and any dependencies are automatically selected.
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 Schema Credentials screen(s), specify the database connection details for each schema you are upgrading (the screen name changes based on the schema selected):
 - Select the database type from the **Database Type** drop-down menu.
 - Enter the database connection details, and click **Connect**.

- Select the schema you want to upgrade from the **Schema User Name** drop-down menu, and then enter the password for the schema. Be sure to use the correct schema prefix for the schemas you are upgrading.

 **Note:**

The component ID or schema name is changed for UCSUMS schema as of release 12.1.2, which means the Upgrade Assistant does not automatically recognize the possible schemas and display them in a drop-down list. You must manually enter the name in a text field. The name can be either *prefix_ORASDPM* or *prefix_UMS*, depending on the starting point for the upgrade.

6. 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* 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.

7. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

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 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**.

9. 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 `NEW_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.

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 12.2.1.4.0.

 **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.

About Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).

 **Note:**

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

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.

- If the installation that you're upgrading does not use Oracle Access Management (OAM), then you must edit two files to prevent the Reconfiguration Wizard from attempting to update the nonexistent OAM Infrastructure schema, which causes the upgrade to fail.

Comment out the lines in your `$DOMAIN/init-info/domain-info.xml` that are similar to this example:

```
<!--extention-template-ref name="Oracle Identity Navigator"
  version="11.1.1.3.0"
  location="/u01/app/oracle/product/fmw/iam111130/common/
templates/applications/yourcomany.oinav_11.1.1.3.0_template.jar"
  symbol=""/-->

<!--install-comp-ref name="oracle.idm.oinav" version="11.1.1.3.0"
  symbol="yourcompany.idm.oinav_11.1.1.3.0_iam111130_ORACLE_HOME"
  product_home="/u01/app/oracle/product/fmw/iam111130"/-->
```

and similarly comment out the lines in `$DOMAIN/config/config.xml` that are similar to this example:

```
<!--app-deployment>
  <name>oinav#11.1.1.3.0</name>
  <target>AdminServer</target>
  <module-type>ear</module-type>

  <source-path>/u01/app/oracle/product/fmw/iam111130/oinav/
modules/oinav.ear_11.1.1.3.0/oinav.ear</source-path>
  <deployment-order>500</deployment-order>
  <security-dd-model>DDOnly</security-dd-model>
  <staging-mode>nostage</staging-mode>
</app-deployment-->
```

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:**

When the domain reconfiguration process starts, you can't undo the changes that it makes. 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. See *Reconfiguring WebLogic Domains in Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

- [Backing Up the Domain](#)
- [Starting the Reconfiguration Wizard](#)
- [Reconfiguring the Domain with the Reconfiguration Wizard](#)
Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

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.
(Windows) `copy C:\domains\mydomain to C:\domains\mydomain_backup.`
(UNIX) `cp mydomain /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.

Starting the Reconfiguration Wizard

 **Note:**

Shut down the administration server and all collocated managed servers before starting the reconfiguration process. See [Stopping Servers and Processes](#) .

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) `NEW_ORACLE_HOME/oracle_common/common/bin`
 - (Windows) `NEW_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
```

Reconfiguring the Domain with the Reconfiguration Wizard

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

 **Note:**

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only. Use the pack/unpack utility to apply the changes to other cluster members in the domain.

To reconfigure the domain with the Reconfiguration Wizard:

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 (12.2.1.4.0) is 1.8.0_211 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 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:**

By default **Oracle's Driver (Thin) for Service connections; Versions: Any** is the selected driver. If you specified an instance name in your connection details — instead of the service name — you must select **Oracle's Driver (Thin) for pooled instance connections; Versions: Any**. If you do not change the driver type, then the connection will fail.

 **Note:**

For any existing 12c (12.2.1.3.0) datasource, the reconfiguration will preserve the existing values. For new datasources where the schema was created for 12c (12.2.1.4.0) 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.

5. On the JDBC Component Schema screen, verify that the DBMS/Service and the Host name is correct for each component schema and click **Next**.
6. 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**.

7. 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**.

8. 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.

9. 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**.

10. 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.

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 (12.2.1.4.0).
- [Upgrading Domain Component Configurations Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.
- [Verifying the Domain-Specific-Component Configurations Upgrade](#)
To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:



Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 3-8 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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.

Table 3-8 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none">• TRACE• NOTIFICATION• WARNING• ERROR• INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 3-8 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Domain Component Configurations 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 (12.2.1.4.0), you must run the Upgrade Assistant to upgrade the domain *component* configurations to match the updated domain configuration.

To upgrade domain component configurations 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 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 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* 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.

6. 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.

7. 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**.

8. 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.

Verifying the Domain-Specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

To sign in to the Administration Console, go to: `http://
administration_server_host:administration_server_port/console`

To sign in to Oracle Enterprise Manager Fusion Middleware Control Console, go to: `http://
administration_server_host:administration_server_port/em`

 **Note:**

After upgrade, make sure you run the administration tools from the new 12c (12.2.1.4.0) Oracle home directory and not from the previous Oracle home directory.

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.

If you created the FMW user to run the Upgrade Assistant, ensure that you delete the account after verifying your upgrade was successful.

Performing Post-Upgrade Configuration Tasks

You may have to perform additional configuration tasks after an upgrade depending on which components are in your deployment.

 **Note:**

You may have additional post-upgrade tasks if your deployment contains the following:

[Performing Post Upgrade Tasks for WebCenter Content](#)

[Performing Post-Upgrade Tasks for Oracle WebCenter Portal](#)

- [Starting Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.
- [Synchronizing Keystores](#)
If SSL was configured in your pre-upgrade environment, you must synchronize the keystores from the OPSS security store to your local repository.
- [Verifying the New Applications Work as Expected](#)

Starting Servers and Processes

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

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

 **Note:**

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

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

Step 1: Start the Administration Server

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

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

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

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

Step 2: Start Node Manager

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

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

Step 3: Start the Managed Servers

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

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

When prompted, enter your user name and password.

 **Note:**

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

Step 4: Start System Components

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

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

You can start system components in any order.

Synchronizing Keystores

If SSL was configured in your pre-upgrade environment, you must synchronize the keystores from the OPSS security store to your local repository.

To synchronize your keystores, first open a WLST session in offline mode:

```
cd /ORACLE_HOME/oracle_common/common/bin/  
./wlst.sh
```

Next, from the WLST command prompt (`wls:/offline>`), execute the following commands to sync your keystore:

```
connect('username', 'password', 't3://host:port')  
svc = getOpssService(name='KeyStoreService')  
svc.listKeyStoreAliases(appStripe="system", name="keystoreName", password  
=' ', type="*")  
syncKeyStores(appStripe='system', keystoreFormat='KSS')
```

Substitute *username*, *password*, *host*, and *port* with the appropriate values for your system (the default values are localhost and 7001). Enter your keystore's name for *keystoreName*.

After you have run the above commands, restart the managed servers.

Verifying the New Applications Work as Expected

Once all of the servers have been successfully started, open your component applications and make sure that everything is working as expected. Use your component-specific Administration and Developers guides to help you navigate the new features of your upgraded environment.

4

Upgrading WebCenter in a Clustered Topology

Use this process to upgrade a clustered, multi-node WebCenter topology.

To upgrade a WebCenter cluster topology, where your domain has servers running on more than one machine, you will perform the entire upgrade process on the first node (Node 1) and then pack and unpack the domain on the other node(s) as described below. The same products on Node 1 must be installed on each additional machine (except in the case where the products are installed on shared storage used by all machines in cluster).

To upgrade a clustered topology:

1. Perform a complete upgrade on Node 1. [Upgrading an Oracle WebCenter Domain](#)
 - a. Perform all post-upgrade configuration tasks. [Performing Post-Upgrade Configuration Tasks](#)
 - b. Verify that the upgrade was successful. [Verifying the New Applications Work as Expected](#)

2. Pack the domain on the node where the Administration Server resides.

```
cd NEW_ORACLE_HOME/common/bin
./pack.sh -managed=true -domain=DOMAIN_HOME -template=wcdomaintemplate.jar -
template_name=wc_domain_template
```

3. Copy `wcdomaintemplate.jar` to the `NEW_ORACLE_HOME/common/bin` on the other machines.
4. Remove or move the old domain directories (`DOMAIN_HOME` and `APPLICATION_HOME`) on the other machines.
5. Unpack the domain on each of the other machines:

```
cd NEW_ORACLE_HOME/common/bin
./unpack.sh -domain=DOMAIN_HOME -template=wcdomaintemplate.jar -
overwrite_domain=true
```

6. Start the servers.
 - [Troubleshooting a WebCenter Cluster Upgrade](#)
If you encounter errors while upgrading your WebCenter clustered topology, review these post-upgrade tasks.

Troubleshooting a WebCenter Cluster Upgrade

If you encounter errors while upgrading your WebCenter clustered topology, review these post-upgrade tasks.

- [Accessing WebCenter Content URLs Post Upgrade](#)
This step is only necessary when you cannot access WebCenter Content URLs after a clustered topology upgrade.

Accessing WebCenter Content URLs Post Upgrade

This step is only necessary when you cannot access WebCenter Content URLs after a clustered topology upgrade.

After performing pack and unpack on secondary nodes, you may not be able to access WebCenter Content URLs on secondary nodes. This happens when the pack and unpack process does not completely propagate the WebCenter Content Server on the secondary node.

1. Modify the variables in the Intradoc.cfg file.
 - a) Navigate to <Domain_Home>/ucm/cs/bin
 - b) Locate the Intradoc.cfg file and update the server directory: IdcHomeDir with the new 12c install location.

NOTE: You will need to do this for each WebCenter Content managed server.

2. Modify the idcs_components.hda file.
 - a) Navigate to <Domain_Home>/ucm/cs/data
 - b) Locate the idcs_components.hda file and remove all deprecated components.

TIP: To quickly update the file, create a copy of the existing idcs_components.hda file on Node1 and paste it on Node2 in the same location (<Domain_Home>/ucm/cs/data). This will overwrite the file on Node2.

Part I

Upgrading Oracle WebCenter from 11g to 12c

Part I contains the following chapters:

- [Upgrading WebCenter Sites from 11g to 12c](#)
Upgrading from 11g to 12c is an out-of-place migration. This includes using the Upgrade Assistant to migrate data tables and platform configuration.
- [Upgrading Oracle WebCenter Portal from 11g to 12c](#)
- [Upgrading WebCenter Content: Imaging from 11g to 12c](#)
As of release 12c (12.2.1.3), you can upgrade the WebCenter Content: Imaging (I/PM) component of the Oracle WebCenter Content. The valid starting points for upgrading I/PM are release 11.1.1.9.0 and 12.2.1.3.0. These instructions cover upgrading from 11.1.1.9.0.
- [Upgrading Oracle Universal Records Management from 11g to 12c](#)
From 12c (12.2.1.3.0) onwards, you can upgrade Oracle Universal Records Management (URM) and Oracle Universal Content Management (UCM) from 11g to UCM Release 12c (12.2.1.4.0).

5

Upgrading WebCenter Sites from 11g to 12c

Upgrading from 11g to 12c is an out-of-place migration. This includes using the Upgrade Assistant to migrate data tables and platform configuration.

The valid 11g starting point for upgrading WebCenter Sites to 12.2.1.4.0 is WebCenter Sites 11.1.1.8. This is an *out-of-place* migration.

Note:

There are two approaches that you can consider while upgrading depending on your requirement:

1. You can upgrade the delivery environment and clone it after the upgrade to create development and management environments.

If you consider this approach, synchronization is required. You must publish the contents from your development and management environments in to the delivery environment before the upgrade. You can then clone your upgraded delivery environment to create development and management environments.

2. Alternatively, you can upgrade each environment individually.

If you consider this approach, synchronization is not required.

To upgrade WebCenter Sites from 11g to 12c, complete the following tasks:

- [About the WebCenter Sites Upgrade Process from 11g to 12c](#)
Review the flowchart and the roadmap for an overview of the upgrade process for Oracle WebCenter Sites.
- [Installing the Product Distribution](#)
Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions on the target system and install them using Oracle Universal Installer.
- [Creating the Required 12c Schemas with the RCU](#)
When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.
- [Configuring the WebCenter Sites Domain](#)
If you are upgrading from WebCenter Sites 11g to 12c, then you must configure the WebCenter Sites domain using the Configuration Wizard.
- [Configuring WebCenter Sites Instance](#)
After you configure the Oracle WebCenter Sites domain, you can configure a WebCenter Sites instance by completing the browser-based WebCenter SitesConfigurator. WebCenter Sites runtime consists of WebCenter Sites and CAS web

applications (WAR files) and the following components shared across cluster members: a config directory, a data directory, and a database instance.

- [Post-Configuration Tasks](#)
After configuring the WebCenter Sites 12c, complete the tasks listed in this topic.
- [Before Running the Upgrade Assistant](#)
Before running the Upgrade Assistant to upgrade from 11.1.1.8, complete the tasks listed in this topic.
- [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.
- [Upgrading Domain Component Configurations](#)
After you upgrade the product schemas, use the Upgrade Assistant to upgrade the domain *component* configurations inside the domain to match the updated domain configuration.
- [Post-Upgrade Validation Tasks](#)
Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes.
- [Post-Upgrade Tasks](#)
The post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in this topic.
- [Migrating Custom Java Libraries or Static Web Resources](#)
Perform this optional step only if custom Java libraries or static web resources were added to the web application in your pre-upgrade environment and you want to continue to use them in the upgraded environment.

About the WebCenter Sites Upgrade Process from 11g to 12c

Review the flowchart and the roadmap for an overview of the upgrade process for Oracle WebCenter Sites.

Figure 5-1 Upgrade Process Flowchart for WebCenter Sites from 11g to 12c Release

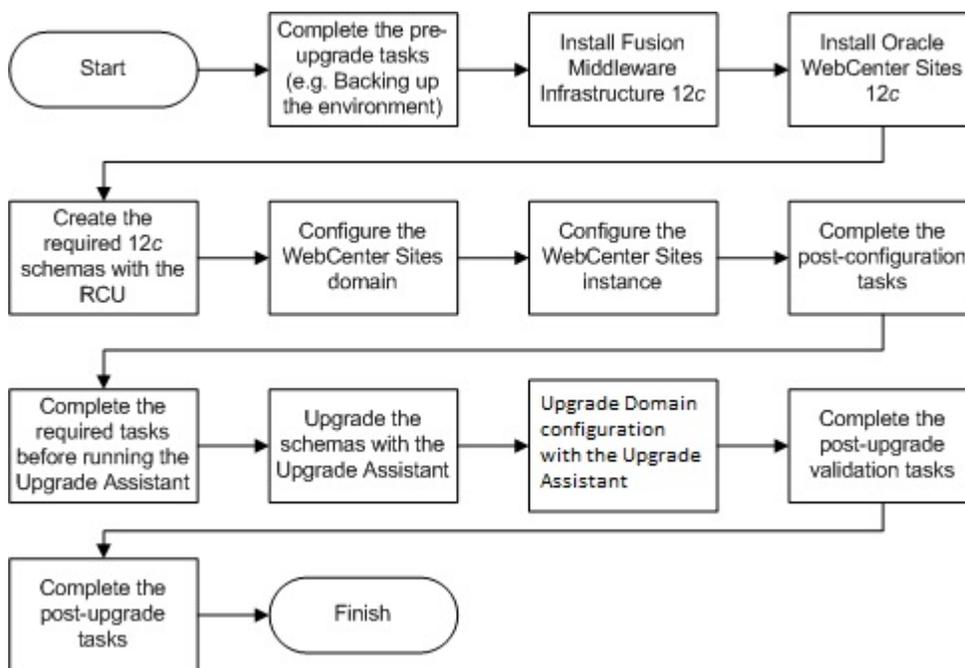


Table 5-1 provides a roadmap for tasks that you must perform to upgrade WebCenter Sites from 11g to 12c.

Table 5-1 Tasks for Upgrading WebCenter Sites from 11g to 12c Release

Task	Description
<p>Required 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 Pre-Upgrade Tasks for Oracle WebCenter Components.</p>
<p>Required Download and install the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions.</p>	<p>The Infrastructure distribution packs 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>You must install the Oracle WebCenter Sites distribution in the Oracle home that is created when you install the 12.2.1.4.0 Infrastructure. To install the product distributions, follow the procedure described in Installing the Product Distribution.</p>

Table 5-1 (Cont.) Tasks for Upgrading WebCenter Sites from 11g to 12c Release

Task	Description
Required Create the required schemas.	If you are upgrading from WebCenter Sites 11g, you must create the required 12c schemas before you begin the upgrade. The schemas required for WebCenter Sites are: Oracle Platform Security Services (OPSS), Audit Services (IAU), Service Table (STB), WebLogic Server (WLS) and WebCenter Sites. Create the schemas with the Repository Creation Utility (RCU) as described in Creating the Required 12c Schemas with the RCU .
Required Configure the WebCenter Sites domain.	Upgrade from 11g to 12c is an out-of-place upgrade. Therefore, configure the WebCenter Sites 12c (12.2.1.4.0) domain by following the procedure described in Configuring the WebCenter Sites Domain
Required Configure the WebCenter Sites instance.	Configure a WebCenter Sites instance by completing the browser-based WebCenter Sites Configurator by following the procedure described in Configuring WebCenter Sites Instance .
Required Complete the post-configuration tasks.	The post-configuration tasks include configuring the 12c (12.2.1.4.0) domain with LDAP-based or OAM-based authentication, verifying the directory structure, signing in and accessing the Sites UI, and restarting the managed servers. These tasks are listed in Post-Configuration Tasks .
Required Complete the required tasks before running the Upgrade Assistant.	The pre-upgrade tasks are a set of tasks that you must complete before starting the upgrade process with the Upgrade Assistant. These tasks are listed in Before Running the Upgrade Assistant .
Required Upgrade the schemas.	Upgrade the schemas components that are available for upgrade with the Upgrade Assistant by following the procedure described in Upgrading Product Schemas .
Required Upgrade the Sites configuration.	Upgrade the Sites configurations contained in your 11g (11.1.1.8) domain with the Upgrade Assistant by following the procedure described in Upgrading Sites Configuration Using the Upgrade Assistant .
Required Complete the post-upgrade validation tasks.	Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes. To use the validation script, see Post-Upgrade Validation Tasks .
Required Complete the other post-upgrade tasks.	Other post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in Post-Upgrade Tasks .

Installing the Product Distribution

Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions on the target system and install them using Oracle Universal Installer.

 **Note:**

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

Make sure that you download and install all the Oracle products that are part of your domain, for example Oracle HTTP Server. You must install the 12.2.1.4.0 binaries into a new Oracle home. It should be on the same host as the existing Oracle home.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (fmw_12.2.1.4.0_infrastructure_generic.jar)
 - Oracle WebCenter Sites (fmw_12.2.1.4.0_wcsites_generic.jar)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`
5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.

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

Click **Next**.

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

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

9. On the Installation Type screen, select the following:
 - For Infrastructure, select **Fusion Middleware Infrastructure**
 - For Oracle WebCenter Sites, select **WebCenter Sites**

 **Note:**

Ensure that you select **WebCenter Sites** and not **WebCenter Sites with Examples**.

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

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

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

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

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

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

```
(UNIX) JDK_HOME/bin/java -jar fmw_12.2.1.4.0_wcsites_generic.jar
```

```
(Windows) JDK_HOME\bin\java -jar fmw_12.2.1.4.0_wcsites_generic.jar
```

Creating the Required 12c Schemas with the RCU

When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.

 **Note:**

If you are upgrading from a previous 12c release of Oracle Fusion Middleware, you do not need to re-create these schemas if they already exist. Refer to the steps below to identify the existing schemas in your domain.

The following schemas must exist before you upgrade. If you are upgrading from 12c, and you are not sure which schemas you currently have, refer to the steps below to identify the existing schemas in your domain. You do not need to re-create these schemas if they already exist.

- **Service Table** schema (*prefix_STB*). This schema is required for domain-based upgrades. It stores basic schema configuration information (for example, schema prefixes and passwords) that can be accessed and used by other Oracle Fusion Middleware components during the domain creation. This schema is automatically created when you run the Repository Creation Utility (RCU), where you specify the existing schema owner prefix that you used for your other 12c schemas.

 **Note:**

If the Service Table schema does not exist, you may encounter the error message `UPGAST-00328 : The schema version registry table does not exist on this database`. If that happens it is necessary to create the service table schema in order to run Upgrade Assistant

- **Oracle Platform Security Services (OPSS)** schema (*prefix_OPSS*). This schema is required if you are using an OID-based security store in 12c. This schema is automatically created when you run the Repository Creation Utility (RCU). The only supported LDAP-based OPSS security store is Oracle Internet Directory (OID). An LDAP-based policy store is typically used in production environments. You do not need to reassociate an OID-based security store before upgrade. While the Upgrade Assistant is running, you can select the OPSS schema. The Upgrade Assistant upgrades the OID-based security store automatically.

 **Note:**

The 12c OPSS database schema is required so that you can reference the 12c schema during the reconfiguration of the domain. Your domain continues to use the OID-based security store after the upgrade is complete.

- Audit Services (IAU)
- WebCenter Sites

To create the schemas with the RCU:

1. (Optional) If you are upgrading from 12c, and you wish to confirm the schemas which are present in your existing domain, then connect to the database as a user with DBA privileges, and run the following code 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. Verify that a certified JDK already exists on your system by running `java -version` from the command line. For 12c (12.2.1.4.0), the certified JDK is 1.8.0_211 and later.

Ensure that the `JAVA_HOME` environment variable is set to the location of the certified JDK. For example:

- (UNIX) `setenv JAVA_HOME=/home/Oracle/Java/jdk1.8.0_211`
- (Windows) `set JAVA_HOME=C:\home\Oracle\Java\jdk1.8.0_211`

Add `$JAVA_HOME/bin` to `$PATH`.

3. Go to the `oracle_common/bin` directory:

- (UNIX) `NEW_ORACLE_HOME/oracle_common/bin`
- (Windows) `NEW_ORACLE_HOME\oracle_common\bin`

4. Start the RCU:

- (UNIX) `./rcu`
- (Windows) `rcu.bat`

5. On the Welcome screen, click **Next**.

6. On the Create Repository screen, select **Create Repository** and then select **System Load and Product Load**.

If you do not have DBA privileges, select **Prepare Scripts for System Load**. This will generate a SQL script containing all the same SQL statements and blocks that would have been called if the RCU were to execute the actions for the selected components. After the script is generated, a user with the necessary SYS or SYSDBA privileges can execute the script to complete the system load phase. Click **Next**.

7. On the Database Connection Details screen, select the **Database Type** and enter the connection information for the database that hosts the 12c schemas. See the pertinent table below.

Table 5-2 Connection Credentials for Oracle Databases and Oracle Databases with Edition-Based Redefinition

Option	Description and Example
Host Name	Specify the name of the server where your database is running in the following format: <code>examplehost.exampledomain.com</code> For Oracle RAC databases, specify the VIP name or one of the node names in this field.
Port	Specify the port number for your database. The default port number for Oracle databases is 1521.
Service Name	Specify the service name for the database. Typically, the service name is the same as the global database name. For Oracle RAC databases, specify the service name of one of the nodes in this field. For example: <code>examplehost.exampledomain.com</code>
Username	Enter the user name for your database. The default user name is <code>SYS</code> .
Password	Enter the password for your database user.
Role	Select the database user's role from the drop-down list: Normal or SYSDBA

Table 5-3 Connection Credentials for MySQL Databases

Option	Description and Example
Host Name	Specify the host name, IP address, or complete server name in <code>host\server</code> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.
Password	Enter the password for your database user.

Table 5-4 Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Unicode Support	Select Yes or No from the drop-down list.
Server Name	Specify the host name, IP address, or complete server name in <code>host\server</code> format of the server where your database is running. MSSQL named instances: A named instance is identified by the network name of the computer and the instance name that you specify during installation. The client must specify both the server name and the instance name when connecting.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.

Table 5-4 (Cont.) Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Password	Enter the password for your database user.

Table 5-5 Connection Credentials for IBM DB2 Databases

Option	Description and Example
Server Name	Specify the host name, IP address, or complete server name in <i>host\server</i> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with DB Owner privileges. The default user name for IBM DB2 databases is <code>db2inst1</code> .
Password	Enter the password for your database user.

If the prerequisite check is successful, click **OK** to continue to the next screen. If the check fails, review the details you entered and try again.

- On the Select Components screen, select **Select existing prefix** and select the prefix that was used to create the existing 11g schemas from the drop-down menu (for example, `DEV11G`). This prefix is used to logically group schemas together for use in this domain.

Select the following schemas:

- Audit Services
- Audit Services Append
- Audit Services Viewers
- WebCenter Sites
- Metadata Services (`_MDS`)
- User Messaging Service (`_UMS`)
- WebLogic Server (`_WLS`)

 **Note:**

The Common Infrastructure Services (`prefix_STB`) and Oracle Platform Security Services (`prefix_OPSS`) schemas are selected by default if they have not yet been created.

Make a note of the prefix and schema names for the components you are installing as you will need this information when you configure the installation. Click **Next**.

- In the Checking Prerequisites dialog, verify that the prerequisites check is successful, then click **OK**.

10. On the Schema Passwords screen, specify the passwords for your schema owners.
Make a note of the passwords you enter on this screen as you will need this information while configuring your product installation.
11. On the Map Tablespaces screen, configure the required tablespace mapping for the schemas you want to create.
Click **Next**, then click **OK** in the confirmation dialog. When the progress dialog shows the tablespace creation is complete, click **OK**.
You see the **Encrypt Tablespace** check box only if you have enabled Transparent Data Encryption (TDE) in the database (Oracle or Oracle EBR) when you start the RCU. Select the **Encrypt Tablespace** check box on the Map Tablespaces screen to encrypt all new tablespaces that the RCU creates.
12. Verify the information on the Summary screen and click **Create** to begin schema creation.
This screen contains information about the log files that were created from this RCU operation. Click on the name of a particular log file to view the contents of that file.
13. Review the information on the Completion Summary screen to verify that the operation is completed successfully. Click **Close** to complete the schema creation.

Configuring the WebCenter Sites Domain

If you are upgrading from WebCenter Sites 11g to 12c, then you must configure the WebCenter Sites domain using the Configuration Wizard.

To configure the WebCenter Sites domain:

1. Change directory to the following:
(UNIX) `NEW_ORACLE_HOME/oracle_common/common/bin`
(Windows) `NEW_ORACLE_HOME\oracle_common\common\bin`
2. Start the configuration wizard by entering the following command:
(UNIX) `./config.sh`
(Windows) `config.cmd`
3. On the Configuration Type screen, select **Create a new domain**.
In the **Domain Location** field, specify the Domain home directory and click **Next**.
Oracle recommends you to select the domain directory location outside the Oracle home directory, which is where the Fusion Middleware products are installed. To learn more about the recommended directory structure, see *What Are the Key Oracle Fusion Middleware Directories?* in *Oracle Fusion Middleware Understanding Oracle Fusion Middleware*.
4. On the Templates screen, select **Create Domain Using Product Templates**:
Select the following from the **Templates Category** drop-down list:
 - Oracle WebCenter Sites - 12.2.1.4.0 [wcsites]
 - Oracle JRF - 12.2.1.4.0 [oracle_common]
 - Oracle Enterprise Manager - 12.2.1.4.0 [em]
 - WebLogic Coherence Cluster Extension - 12.2.1.4.0 [wlserver]

 **Note:**

The list of Oracle WebCenter Sites templates available in this screen depends on your selection of template while installing the WebCenter Sites binaries. During the 11g to 12c upgrade process, Oracle recommends you to select only Oracle WebCenter Sites (with or without WebCenter Sites – With Examples).

Click **Next**.

5. On the Application Location screen, specify the **Application Location** to store applications associated with your domain by entering the path or by clicking **Browse** to use the navigation tree. The Application Location is also known as the Application home directory.

Oracle recommends you to select the application location outside the Oracle home directory, which is where the Fusion Middleware products are installed. To learn more about the recommended directory structure, see *What Are the Key Oracle Fusion Middleware Directories?* in *Oracle Fusion Middleware Understanding Oracle Fusion Middleware*.

Click **Next**.

6. On the Administrator Account screen, specify the user name and password you provided for the 11.1.1.8 WebCenter Sites domain click **Next**.

These account details are used to boot and connect to the WebCenter Sites domain's Administrator Server.

7. On the Domain Mode and JDK screen, select **Production** and **Oracle HotSpot JDK** from the Domain Mode and JDK sections respectively and click **Next**.
8. On the Database Configuration Type screen, specify details about the database and database schema.

Select **RCU Data**. This option instructs the Configuration Wizard to connect to the database and Service Table (STB) schema to automatically retrieve schema information for schemas needed to configure the domain.

If you select **Manual Configuration** on this screen, you must manually fill in parameters for your schema on the JDBC Component Schema screen.

Specify the connection details in the following fields:

 **Note:**

Make sure that the 11g schema and the 12c schema collocate on the same database.

Table 5-6 Field Descriptions for the Database Configuration Type Screen

Field	Description
DBMS/Service	Enter the database DBMS name, or service name if you selected a service type driver. Example: orcl.exampledomain.com

Table 5-6 (Cont.) Field Descriptions for the Database Configuration Type Screen

Field	Description
Host Name	Enter the name of the server hosting the database. Example: examplehost.exampledomain.com
Port	Enter the port number on which the database listens. Example: 1521
Schema Owner and Schema Password	Enter the username and password for connecting to the database's Service Table schema that you specified when you created the schemas using the RCU. The default username is prefix_STB, where prefix is the custom prefix that you defined in RCU.

Click **Get RCU Configuration**.

The following output in the Connection Result Log indicates that the operation succeeded. Click **OK** to go to the next screen.

```
Connecting to the database server...OK
Retrieving schema data from database server...OK
Binding local schema components with retrieved data...OK
```

Successfully Done.

- On the JDBC Component Schema screen, verify or specify the details about the database schemas.

Verify that the values are correct for all schemas. If you selected **RCU Data** on the Database Configuration Type screen, the schema table should already be populated appropriately.

Click **Next**.

- The JDBC Component Schema Test screen is used to test the data source connections.

A green check mark in the **Status** column indicates a successful test. If you encounter any issues, see the error message in the Connection Result Log section of the screen, fix the problem, then try to test the connection again by clicking **Test Selected Connections**.

By default, the schema password for each schema component is the password you specified while creating your schemas. If you want different passwords for different schema components, manually edit them on the previous screen (JDBC Component Schema) by entering the password you want in the **Schema Password** column, against each row. After specifying the passwords, select the check box corresponding to the schemas that you changed the password in and test the connection again.

Click **Next**.

- The Advanced Configuration screen is used to complete the domain configuration. Select the options for which you want to perform advanced configuration and click **Next**:

Table 5-7 Advanced Configuration Screen Options

Option	Description
Administration Server	Required to properly configure the listen address of the Administration Server.
Node Manager	Required to configure Node Manager.
Topology	Required to configure the WebCenter Sites Managed Server.

12. On the Administration Server screen, specify a server name in the **ServerName** field.
 Select the IP address of the host from the **Listen Address** drop-down list where you want the Administration Server to reside. Do not select **All Local Addresses**.
 You can retain the default value in the **Listen Port** field or specify a number between 1 and 65535. The custom value must be different from SSL listen port and coherence port.
 Do not specify any **Server Groups** for the Administration Server.
 Click **Next**.
13. On the Node Manager screen, select the type of Node Manager you want to configure, along with the Node Manager credentials.
 For the Node Manager Type, select **Per Domain Default Location**.
 Specify the user name and the password in the **Node Manager Credentials** field.
14. On the Managed Servers screen, you can Add, Clone, or Delete the Managed Servers and also assign a server group (if available) to a Managed Server.
 - a. In the **Listen Address** drop-down list, select the IP address of the host you want the Managed Server to reside on. You can also specify the system name or DNS name that maps to a single IP address. Do not select **All Local Addresses**.
 - b. Click **Enable SSL** to enable security.
 The Configuration Wizard automatically populated the default Server Groups for each Managed Server added by default. If you add additional servers, select **WCSITES-MGD-SERVER** from the Server Groups drop-down list.
 Server Groups target Fusion Middleware applications and services to one or more servers by mapping defined application service groups to each defined server group. A given application service group can be mapped to multiple server groups if needed. Any application services that map to a given server group are automatically targeted to all servers that are assigned to that group.
 Click **Help** to learn more about adding, cloning, or deleting a Managed Server.
 When finished, click **Next**.
15. On the **Clusters** screen, click **Add** to create a new cluster.
 A cluster is a group of WebLogic Server instances that work together to provide scalability and high-availability for applications. By creating clusters, you can group Managed Servers such that they operate as a single unit for hosting applications and resources.
 Specify a name for your cluster in the **Cluster Name** field., such as `wcs_cluster_1`. Leave the **Cluster Address** field blank.

Repeat and add one more cluster, namely, `wcs_cluster_2`, and click **Next**.
Be sure to assign the clusters to the **WCSITES-MGD-SERVER** server group.
For more information about this screen, click **Help**.

 **Note:**

You can also create clusters using Enterprise Manager Fusion Middleware Control.

16. On the Assign Servers to Clusters screen, assign Managed Servers to the new cluster.
 - a. In the **Clusters** pane, select the cluster to which you want to assign the Managed Servers. For example, `wcs_cluster_1`.
 - b. In the **Servers** pane, assign a server to a cluster by doing one of the following:
 - Single-click a server from the **Servers** pane and click the right-arrow button (**>**) to move it under the selected cluster.
 - Double-click a server from the **Servers** pane to move it under the selected cluster.
 - c. Repeat this procedure to assign all the Servers to the Clusters.

 **Note:**

Only Managed Servers are displayed under the **Server** pane. The Administration Server is not listed because you cannot assign it to a cluster.

Click **Next**.

17. The Coherence Clusters screen is displayed only if you have included Coherence during the Infrastructure installation.

Specify a name for the Coherence Cluster in the **Cluster Name** field. You can also retain the default name.

Leave the default port number 0 as the **Cluster Listen Port** and click **Next**. After configuration, the Coherence cluster is automatically added to the domain.

18. On the Machines screen, create new machines in the domain. A machine is required so that you can use the Node Manager to start and stop servers.

Select the **Machine** tab (for Windows) or the **UNIX Machine** tab (for UNIX), then click **Add** to create a new machine.

Specify a name for the machine in the **Name** field. For example, `wcs_machine_1`.

In the **Node Manager Listen Address** field, select the IP address of the machine in which you have configured the Managed Servers.

You must select a specific interface and not localhost. This allows Coherence cluster addresses to be dynamically calculated.

 **Note:**

If you are extending an existing domain, you can assign servers to any existing machine. It is not necessary to create a new machine unless your situation requires it.

Click **Next**.

19. On the Assign Servers to Machines screen, assign the Administration Server and Managed Servers to the new machine you created on the Machines screen.
 - a. In the **Machines** pane, select the machine to which you want to assign the Administration Server and the Managed Servers. For example, wcs_machine_1.
 - b. In the **Servers** pane, assign each server to a machine by doing one of the following:
 - Single-click a server from the **Servers** pane and click the right-arrow button (➤) to move it under the selected machine.
 - Double-click a server from the **Servers** pane to move it under the selected machine.
 - c. Repeat this procedure to assign all the Servers to the Machine.

Click **Next**.

20. On the Virtual Targets screen, click **Next**.
21. On the Partitions screen, click **Next**.
22. The Configuration Summary screen has detailed configuration information for the domain you are about to create.

Review each item on the screen and verify that the information is correct and click **Create** to create the domain.

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

To make any changes, go back to a screen by clicking **Back** or by selecting the screen in the navigation pane. Domain creation does not start until you click **Create**.

23. The Configuration Progress screen displays the progress of the domain creation process.

If the domain creation is successful, click **Next**.

If the domain creation fails, review the errors and try again. If you cannot troubleshoot the errors, contact My Oracle Support for further assistance.

24. The End of Configuration screen displays the domain location and the Admin Server URL for the domain you created.

Note the values for further operations.

 **Note:**

For IBM DB2, WebCenter Sites does not support the default data source created by the Fusion Middleware Configuration Wizard. To create new data source with a driver that DB2 supports:

1. Add the IBM DB2 Driver JAR files to the class path for the WebCenter Sites domain:
 - a. Stop the WebLogic Server Administration Server.
 - b. Copy the `db2jcc.jar` and `db2jcc_license_cu.jar` files from DB2 to a location that you can add to the domain class path.
 - c. Edit `NEW_DOMAIN_HOME/bin/setDomainEnv.sh` and add the following line after `# ADD EXTENSIONS TO CLASSPATHS:`

```
PRE_CLASSPATH="path_to_db2jcc.jar:path_to_db2jcc_license_cu.jar:
${PRE_CLASSPATH}"
```
 - d. Start the Administration Server.
2. Create a new data source using the preceding DB2 driver.

Configuring WebCenter Sites Instance

After you configure the Oracle WebCenter Sites domain, you can configure a WebCenter Sites instance by completing the browser-based WebCenter SitesConfigurator. WebCenter Sites runtime consists of WebCenter Sites and CAS web applications (WAR files) and the following components shared across cluster members: a config directory, a data directory, and a database instance.

The following topics describe how to configure WebCenter Sites:

- [Prerequisites for Configuring WebCenter Sites Instance](#)
Several prerequisite tasks must be done before you use the WebCenter Sites Configurator. These tasks include granting permissions for OPSS access, modifying cache files, and setting property values for your environment.
- [Configuring WebCenter Sites with the Configurator](#)
The WebCenter Sites Configurator populates the database with tables and data necessary for WebCenter Sites to function. The Configurator also creates the necessary user accounts and sets the required permissions on the database objects.

Prerequisites for Configuring WebCenter Sites Instance

Several prerequisite tasks must be done before you use the WebCenter Sites Configurator. These tasks include granting permissions for OPSS access, modifying cache files, and setting property values for your environment.

Before configuring WebCenter Sites, ensure that you complete the following tasks:

1. Ensure that the Administration Server is running.
2. In the WebCenter Sites `config` directory, modify the files `cs-cache.xml`, `ss-cache.xml`, `linked-cache.xml`, and `cas-cache.xml` as follows:
 - a. Locate the following section:

```
<cacheManagerPeerProviderFactory
class="net.sf.ehcache.distribution.RMICacheManagerPeerProviderFacto
ry" properties="peerDiscovery=automatic,
multicastGroupAddress=230.0.0.0, multicastGroupPort=4444,
timeToLive=0" />
```

- b. Change the value of the `peerDiscovery` property to `manual`.
 - c. Save and close the file.
3. Start the Node Manager before you start the WebCenter Sites Managed Server.

Configuring WebCenter Sites with the Configurator

The WebCenter Sites Configurator populates the database with tables and data necessary for WebCenter Sites to function. The Configurator also creates the necessary user accounts and sets the required permissions on the database objects.

Note:

If you are configuring WebCenter Sites over a slow network, increase the setting of the `StuckThreadMaxTime` property to 1000 seconds per thread before starting the WebCenter Sites Configurator. The default value is 600 seconds.

In certain environments that potentially have network-related issues, the sample sites import process could take more than 600 seconds per thread during the WebCenter Sites configuration setup process. This can cause the import process or install to fail, and multiple exceptions in the log file. Oracle recommends increasing the setting to 1000 seconds to complete a successful installation of the sample sites.

To change the value of `StuckThreadMaxTime`, in the WebLogic Server Administration Console for the domain, go to **Servers** and click **wcsites_server1**. Under **Configuration**, click **Tuning**.

To run the browser-based WebCenter Sites Configurator after the corresponding WebLogic domain has been successfully set up:

1. To configure WebCenter Sites over a web server, increase the web server `timeout` value to `300 sec` before starting the WebCenter Sites configuration.
 - a. (Optional) To run the Configurator in silent mode:

Note:

If you are working with clusters, there are additional steps required. For more information, see the Oracle WebCenter Sites installation guide for your version.

- i. Edit the `wcs_properties_bootstrap.ini` file that is located in the `NEW_DOMAIN_HOME/wcsites/wcsites/config` directory and complete the online instructions.

- ii. Start the WebCenter Sites Managed Server.
- iii. Initiate the WebCenter Sites configuration process with the following command:
 - On UNIX operating systems: `xdg-open http://sites-host:sites-port/sites/sitesconfig`
 - On Windows operating systems: start `http://sites-host:sites-port/sites/sitesconfig`
- b. (Optional) Set the values of the following properties as appropriate for your environment, using the Property Management Tool in the Admin interface. Set these properties for a cluster that uses the NIO database-based file system. If you would like files stored in locations other than the default (individual folders under `NEW_DOMAIN_HOME/wcsites/wcsites/config`), specify the locations as property values because they cannot be changed once WebCenter Sites is up and running.

Properties	Description
<code>xcelerate.transformpath</code>	Directory where Microsoft Word files are stored before WebCenter Sites transforms those files into assets.
<code>cs.pgcacheheader</code>	Deprecated. Only set if instructed to do so by Oracle Support.
<code>cs.xmlfolder</code>	Working directory for HTML rendering.
<code>cs.pgexportfolder</code>	Base export directory for the HTML files that are created when assets are published with the Export to Disk delivery type.
<code>vis.path</code>	Directory where WebCenter Sites is installed. You must include the trailing slash.
<code>mwb.path</code>	Directory where WebCenter Sites is installed. You must include the trailing slash.
<code>contentserver.installation.folder</code>	Directory where WebCenter Sites is installed. You must include the trailing slash. Applies to installations in which Satellite Server and WebCenter Sites are running in the same web application and must therefore share the user's session. Specifying this enables Satellite Server to access WebCenter Sites resources.
<code>cs.csdtfolder</code>	Directory where WebCenter Sites Developer Tools imports are stored.

2. Start the Managed Server for the WebCenter Sites primary cluster node.
3. In a web browser, access this URL: `http://sites-host:sites-port/sites/sitesconfigsetup`.
4. On the WebCenter Sites Configurator screen, click **Begin**.
5. On the Database Parameters screen, specify the **JNDI Datasource name** for the WebCenter Sites database repository. This must be the repository you created using the Repository Creation Utility while setting up the WebLogic domain.
6. On the Web Application Parameters screen, select Yes if you are installing over a secure connection, leave all the parameters at their default (prepopulated) values, and click **Next**.

7. On the CAS Deployment Information screen, leave all parameters at their default (prepopulated) values and click **Next**. If using a cluster and a front-end web server for load balancing, adjust these values as appropriate for your environment.
8. On the WebCenter Sites Administrator Accounts screen, specify the credentials you want, and then click **Next**.
9. (Optional) If you chose the **WebCenter Sites with Examples** installation option when installing WebCenter Sites, the Sample Sites screen appears. On this screen, select the desired sample sites and click **Next**.
10. On the Configuration Summary screen, click **Test** and verify that all tests are successful. Then click **Start** and wait for the configuration process to complete.
11. Restart the Managed Server for the WebCenter Sites application.
12. Verify that WebCenter Sites is up and running by accessing the following URL in a web browser and logging in: `http://sites-host:sites-port/sites`.

**Note:**

The default location for `cas.log` is `NEW_DOMAIN_HOME/servers/wcsites_server1/logs/`.

To get XMLPost and Bulkloader up and running, set the following directories in the `CLASSPATH` environment variable:

```
NEW_ORACLE_HOME\wcsites\webcentersites\sites-home\lib\*  
ORACLE_HOME\oracle_common\modules\clients\*
```

For information about how to configure an external LDAP authentication provider, see [Switching to Authentication Against an LDAP Directory](#).

For information about how to configure Oracle Access Manager integration, see [Switching to Authentication Against Oracle Access Manager](#).

Post-Configuration Tasks

After configuring the WebCenter Sites 12c, complete the tasks listed in this topic.

1. If the existing Sites 11.1.1.8 environment is configured with LDAP-based or OAM-based authentication, configure the same for your 12.2.1.4.0 environment as well.

To switch to LDAP-based authentication, see [Switching to Authentication Against an LDAP Directory](#).

To switch to OAM-based authentication, see [Switching to Authentication Against Oracle Access Manager](#).

2. Verify the directory structure. You must have Oracle Home (containing product binaries), Sites Home (domain and config data), and Sites Shared directories created after you configure WebCenter Sites.
3. Sign in to the Sites UI using your Administrator credentials.
4. Restart Managed Servers and access WebCenter Sites.

- [Switching to Authentication Against an LDAP Directory](#)
This topic describes how to switch WebCenter Sites to authentication against an external LDAP authentication provider directory. This is a recommended solution for production environments if integration with Oracle Access Management is not viable.
- [Switching to Authentication Against Oracle Access Manager](#)
You can configure WebCenter Sites for authentication against Oracle Access Manager. This solution is recommended for production environments.

Switching to Authentication Against an LDAP Directory

This topic describes how to switch WebCenter Sites to authentication against an external LDAP authentication provider directory. This is a recommended solution for production environments if integration with Oracle Access Management is not viable.

Before you change your authentication provider, install and configure WebCenter Sites.

To switch WebCenter Sites to authentication against an external LDAP directory:

1. (Optional) Modify `ldap.caseAware` property value to `true`, if the LDAP server you are using is case sensitive.

By default the value of `ldap.caseAware` is set to `false`. Sign in will fail if you are using a case-sensitive LDAP server and this property is set to `false`. To modify the `ldap.caseAware` value to `True` follow the steps:

- Sign in to the WebCenter Sites Admin interface and navigate to Admin tree tab>System Tools>Property Management option.
- Search for `ldap` and change the value from `False` to `True`.
- Restart the Managed server.

Note:

During the integration of Sites with LDAP, if the users data in LDAP is separated by a comma the data does not get fetched. for example: `test,user`. To retrieve the data, you need to change the syntax in the `dir.ini` file located at `..sites/install` directory from `"syntax.escape=\\` to `syntax.escape=#"`.

2. Access the LDAP Configurator at `http://sites-host:sites-port/sites-context/ldapconfig`, follow the instructions on the screen, and enter the values for your environment.
3. For LDAP rollback, restart the WebCenter Sites Managed Server, and go to the same LDAP Configurator URL.

Now there is only manual LDAP integration. Nothing is written to your LDAP Server, only an LDIF file is created under the `DOMAIN_HOME/wcsites/wcsites/config/ldap` folder (This is the default install location of WebCenter Sites application. All customizations and path modifications should be made after successful LDAP integration). The `peopleparent`, `groupparent`, `username`, and other fields are not prepopulated, as in the previous release.

4. (Optional) Modify the LDIF file located in `NEW_DOMAIN_HOME/wcsites/wcsites/config/` with values appropriate for your environment.

Because the fields are not prepopulated, follow this example for ORACLEDIR :

```
ldap server type -- ORACLEDIR
ldap DSN -- dc=oracle,dc=com
ldap host -- localhost
ldap port -- 389
ldap username -- cn=orcladmin
ldap password -- password
ldap peopleParent -- cn=Users,dc=oracle,dc=com
ldap groupParent -- cn=Groups,dc=oracle,dc=com
```

5. If you choose Oracle Virtual Directory as your LDAP authentication provider, WebCenter Sites generates an LDIF file, which you can import to your Oracle Internet Directory server and then create an adaptor in Oracle Virtual Directory to connect to the Oracle Internet Directory server.

You cannot import an LDIF file directly to an Oracle Virtual Directory LDAP server because it does not have a storage of its own.

6. Import the LDIF file into the external LDAP authentication provider.
7. Restart the WebLogic Managed Server running this WebCenter Sites instance.

Switching to Authentication Against Oracle Access Manager

You can configure WebCenter Sites for authentication against Oracle Access Manager. This solution is recommended for production environments.

It is assumed that customer already has OAM Server running. This OAM integration would require configuration in the OAM Server using `oamconsole` and some configuration changes in the Sites.

WebCenter Sites integration is supported for Oracle Access Manager 11.1.2.2.0 and 11.1.2.3.0.

To switch WebCenter Sites to authentication against Oracle Access Manager:

1. Sign in to Oracle Access Manager Server through `oamconsole`, for example: `http://<oam_host:oam_port>/<oam console>/` and configure a WebGate.
2. Deploy the `oamlogin.war` and `oamtoken.war` application files located under `NEW_ORACLE_HOME/wcsites/webcentersites/sites-home` on the WebLogic domain containing the target WebCenter Sites instance.
3. Create the `wesites_settings.properties` property file under `DOMAIN_HOME/wcsites/wcsites/config/`.
4. Enter the values in the `wesites_settings.properties` file as follows:

Elements	Properties
<code>oamredirect</code>	<code>http://oam_server_host:oam_port/oam/server/auth_cred_submit</code>
<code>oamlogout</code>	<code>oamlogout=http://oam_server_host:oam_port/oam/server/logout</code>
<code>forgotpassword</code>	<code>helpdesk-email-address</code>

5. Set the following properties in `NEW_DOMAIN_HOME/wcsites/wcsites/config/SSOConfig.xml`. See Step 12 of [Integration Steps](#).

Elements	Properties
serviceUrl	<code>http://{ohs_server_host}:{ohs_port}/{sites_context_root}/REST</code>
ticketUrl	<code>http://{oamtoken_server_host}:{oamtoken_port}/oamtoken</code>
signoutURL	<code>http://{oam_server_host}:{oam_port}/oam/server/logout?end_url={end_url}</code> Use this URL when invoking WebCenter Sites logout. It includes the encoded URL where the browser will return after all logout processing has been completed by Oracle Access Manager.
end_url	For test (staging) and production (delivery) environments: <code>http%3A%2F%2F{ohs_server_host}%3A{ohs_port}%2F{sites_context_root}%2Fwem%2Ffatwire%2Fwem%2FWelcome</code>
dbUsername	Name of the WebCenter Sites general Administrator user account.
dbPassword	Password for the WebCenter Sites general Administrator user account.

 **Note:**

The `ohs_server` host and `ohs_port` can be WebLogic host and port or any other HTTP server host and port depending on your configuration. For more information on OHS configuration, see Step 2 to Step 9 of [Integration Steps](#). Add the below example for configuration in OAM `OHS, mod_wl_ohs.conf` file.

```
<IfModule weblogic_module>
  <Location /oamlogin>
    SetHandler weblogic-handler
    WebLogicHost SITES_HOST
  WebLogicPort SITES_PORT
  </Location>
</IfModule>
<IfModule weblogic_module>
  <Location /sites>
    SetHandler weblogic-handler
    WebLogicHost SITES_HOST
    WebLogicPort SITES_PORT
  </Location>
</IfModule>
```

6. Copy the `obAccessClient.xml` and `cwallet.sso` files from your Oracle Access Manager instance into the `NEW_DOMAIN_HOME/wcsites/wcsites/config/oblix/lib/` directory on the target WebCenter Sites instance.

 **Note:**

These files are auto-generated after the WebGate is configured.

7. Edit the `oamtoken.xml` file in the `sites-config` directory by setting the compatibility mode and `oblix` path. The compatibility mode should be set to `11g` and the `oblix` path to the `sites-config` folder under which you have the `oblix/lib` folder.
8. In the Oracle Access Manager configuration for WebCenter Sites, update the protected, public, and excluded resources as follows:

Figure 5-2 List of Protected, Public, and Excluded Resources for WebCenter Sites

WCSitesMWebGate Application Domain
Application Domain provides a logical container for resources or sets of resources, and the associated policies that dictate who can access specific protected resources.

Summary **Resources** Authentication Policies Authorization Policies Token Issuance Policies Administration

Use the search tool to find an existing Resource or click the New Resource button to create a new one.

Search

Resource Type: HTTP Query String:

Host Identifier: Authentication Policy:

Resource URL: Authorization Policy:

Search Results

Actions: View Create Duplicate Edit Delete Detach

Row	Resource Type	Host Identifier	Resource URL	Query String	Authentication Policy	Authorization Policy
1	HTTP	WCSitesMWebGate	/_admin/**		Protected Resource Policy	Protected Resource Policy
2	HTTP	WCSitesMWebGate	/oamlogin/test		Protected Resource Policy	Protected Resource Policy
3	HTTP	WCSitesMWebGate	/sites/Xcelerate/LoginPage.html		Protected Resource Policy	Protected Resource Policy
4	HTTP	WCSitesMWebGate	/sites/Satellite/../*		Protected Resource Policy	Protected Resource Policy
5	HTTP	WCSitesMWebGate	/sites/faces/jsp/../*		Protected Resource Policy	Protected Resource Policy
6	HTTP	WCSitesMWebGate	/sites/wem/fatwire/../*		Protected Resource Policy	Protected Resource Policy
7	HTTP	WCSitesMWebGate	/sites/ContentServer/../*		Protected Resource Policy	Protected Resource Policy
8	HTTP	WCSitesMWebGate	/sites/wem/fatwire/wem/Welcome		Protected Resource Policy	Protected Resource Policy
9	HTTP	WCSitesMWebGate	/console		Protected Resource Policy	Protected Resource Policy
10	HTTP	WCSitesMWebGate	/sites/REST			
11	HTTP	WCSitesMWebGate	/index.html			
12	HTTP	WCSitesMWebGate	/oamlogin/oamssso/../*			
13	HTTP	WCSitesMWebGate	/sites/wem/fatwire/home			
14	HTTP	WCSitesMWebGate	/sites/**			
15	HTTP	WCSitesMWebGate	/sites/REST/roles		Public Resource Policy	Public Resource Policy
16	HTTP	WCSitesMWebGate	/sites/custom/customCsResolver.jsp		Public Resource Policy	Public Resource Policy
17	HTTP	WCSitesMWebGate	/resources/../*			
18	HTTP	WCSitesMWebGate	/*			

Columns Hidden 2

See Updating the Protected, Public, and Excluded Resources for an Enterprise Deployment.

9. To integrate the OAMSDK Client with WebLogic Server as the `oamtoken.war` application, edit the `jps-config.xml` file for the WebCenter Sites domain. By default, the WebLogic domain runs with this file, which is part of the WebLogic Server 12 c startup script:

```
-Doracle.security.jps.config=NEW_ORACLE_HOME/user_projects/domains/  
DOMAIN_NAME/config/fmwconfig/jps-config.xml
```

- a. Add a service instance, as the following example shows, next to existing service instances in the existing `jps-config.xml` file:

```
<serviceInstance name="credstore.oamtoken" provider="credstoressp"  
location="./oamtoken">
```

```
<description>File Based Credential Store Service Instance</description>
<property name="location" value="./oamtoken"/>
</serviceInstance>
```

`location` is the path to the directory that contains the `cwallet.sso` file. The preceding example sets this path with reference to the current `jsp-config.xml` file. Make sure the `oamtoken` folder is created with respect to the current directory and the `cwallet.sso` file is placed there. The `location` value can also be an absolute path to where the `cwallet.sso` file is placed

- b. Add `<serviceInstanceRef ref="credstore.oamtoken"/>` under `<jpsContext name="default">`.

- c. Add following `<jpsContext>` element under `<jpsContexts default="default">`:

```
<jpsContext name="OAMASDK">
<serviceInstanceRef ref="credstore.oamtoken"/>
</jpsContext>
```

10. Add permissions so that code in `oamtoken.war` can be used.

The WebGate instance created in Oracle Access Manager is accessed by the client. You need to add the credential to the WebCenter Sites domain so that the security restriction can be taken care of.

- a. Launch the WebLogic Scripting Tool with the `wlst.sh` script:

```
cd NEW_ORACLE_HOME/oracle_common/common/bin/./wlst.sh
```

- b. Connect to the Administration Server for the WebCenter Sites domain:

```
connect('user-name', 'password', 'sites-host:admin-port')
```

- c. Grant the permissions:

```
grantPermission(codeBaseURL="file:/scratch/idc/newoam/rend/Oracle_Home/
user_projects/domains/renddomain/servers/wcsites_server1/tmp/_WL_user/
oamtoken/-",
permClass="oracle.security.jps.service.credstore.CredentialAccessPermissi
on", permTarget="context=SYSTEM, mapName=OAMAgent, keyName=*"
")
```

The preceding path is basically the path where WebLogic Server has deployed the `oamtoken.war` application.

- d. Restart the target WebCenter Sites Managed Server.

11. (Optional) If trust between WebCenter Sites and Oracle Access Manager has not been established, modify the configuration of the WebCenter Sites web tier as follows:

- a. Sign in to the Oracle Access Manager Console.
- b. In the WebGate authorization policy (under the protected resource policy), go to the **Responses** tab.
- c. Enable (select) the **Identity Assertion** check box.
- d. Click **Apply** to save your changes.

12. (Optional) If WebCenter Sites is deployed on a cluster is using OAM Integration. Following steps are required to be replicated on `oamticketcache` cache.

- a. In the config directory, we have `cas-cache.xml` where `oamticketcache` is configured by default.
- b. Uncomment the commented section in the cache named `oamticketcache` the section appear as:

```
<cacheEventListenerFactory
class="net.sf.ehcache.distribution.RMICacheReplicatorFactory"
properties="replicateAsynchronously=true, replicatePuts=true,
replicateUpdates=true,
    replicateUpdatesViaCopy=false, replicateRemovals=true"/>
<bootstrapCacheLoaderFactory
class="net.sf.ehcache.distribution.RMIBootstrapCacheLoaderFactory
"
    properties="bootstrapAsynchronously=false,
        maximumChunkSizeBytes=5000000"
    propertySeparator="," />
```

- c. Change the `cacheManagerPeerProviderFactory` as follows, make sure port is unique.

```
<cacheManagerPeerProviderFactory
class="net.sf.ehcache.distribution.RMICacheManagerPeerProviderFac
tory"
    properties="peerDiscovery=automatic,
multicastGroupAddress=230.0.0.8,
    multicastGroupPort=40002, timeToLive=1" />
```

- d. The port should be different for `cacheManagerPeerProviderFactory` and `cacheManagerPeerListenerFactory` as specified in the earlier steps.
 - e. All the cluster nodes should have same port for both the properties.
13. For working on the `SSOConfig.xml` file, follow the steps:
- a. Modify the `SSOConfig.xml` file of the WebCenter Sites deployment. This file controls the loaded authentication classes and the properties that are required by those classes.
 - b. Shutdown the Sites server.
 - c. Backup the `SSOConfig.xml` file located in the `WEB-INF/classes` directory of the deployed WebCenter Sites application.
For example: `/u01/software/Apps/OraMiddleware/user_projects/domains/OAMSitesDomain/wcsites/wcsites/config/SSOConfig.xml`.
 - d. Modify `SSOConfig.xml` as follows:

 **Note:**

Further steps explains on setting properties for the following:
`serviceUrl`, `ticketUrl`, `signoutURL`, `dbUsername`, and `dbPassword`.
See Step 5.

- e. The `signoutUrl` property specifies the URL to be used when invoking WebCenter Sites logout. It includes the encoded URL where the browser will return after all logout processing has been completed by OAM.
- f. For Sites management, use the following value for `end_url`:
`http%3A%2F%2F{ohs_server_host}%3A{ohs_port}%2F{sites_context_root}%2Fwem%2Ffatwire%2Fwem%2FWelcome`
- g. For Sites delivery, use the following value for `end_url`:
`http%3A%2F%2F{ohs_server_host}%3A{ohs_port}%2F{sites_context_root}%2Fwem%2Ffatwire%2Fwem%2FWelcome`

For the `dbUsername` and `dbPassword` properties, you can enter the credentials of the WebCenter Sites general administrator, which by default is `fwadmin/xceladmin`. The values for these properties will be encrypted on startup of the WebCenter Sites application.

 **Note:**

In the code example below, you will set the following properties: `csServerUrl`, `serviceUrl`, `ticketUrl`, `signoutURL`, `dbUsername`, `dbPassword`. See Step 5.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--

    Copyright (c) 2010 FatWire Corporation. All Rights
    Reserved.

    Title, ownership rights, and intellectual property
    rights in and

    to this software remain with FatWire Corporation.
    This software

    is protected by international copyright laws and
    treaties, and

    may be protected by other law. Violation of
    copyright laws may

    result in civil liability and criminal penalties.

-->

<beans xmlns="http://www.springframework.org/schema/
beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:jdbc="http://www.springframework.org/
schema/jdbc"
    xmlns:p="http://www.springframework.org/schema/p"
xmlns:context="http://www.springframework.org/schema/
context"
    xsi:schemaLocation="http://www.springframework.org/
schema/beans http://www.springframework.org/schema/beans/
spring-beans-3.1.xsd
    http://www.springframework.org/schema/jdbc http://
www.springframework.org/schema/jdbc/spring-jdbc-3.1.xsd
    http://www.springframework.org/schema/context http://
www.springframework.org/schema/context/spring-
context-3.1.xsd">

    <bean id="propertyConfigurer"
class="org.springframework.beans.factory.config.PropertyP
laceholderConfigurer" />
    <!-- Root Context: defines shared resources visible
to all other web components -->

    <jdbc:initialize-database data-
source="dataSource" enabled="true" ignore-
failures="ALL">
        <!-- For installer the first jdbc:script will
opened. Installer will configure it automatically -->
        <jdbc:script
location="classpath:crawler_oracle_db.sql" />
        <!--jdbc:script
```

```
location="classpath:crawler_hsql_db.sql" /-->
    <!--jdbc:script
location="classpath:crawler_sql_server_db.sql" /-->
    <!--jdbc:script
location="classpath:crawler_oracle_db.sql" /-->
    <!--jdbc:script
location="classpath:crawler_db2_db.sql" /-->
    </jdbc:initialize-database>

    <!-- Section# 1 Installer will consume below
configuration to configure a datasource name created on the
appservers -->
    <bean id="dataSource"
class="org.springframework.jndi.JndiObjectFactoryBean">
    <property name="jndiName" value="wcsitesDS"/>
    </bean>

    <!-- Single Sign On provider -->
    <bean id="ssoprovider"
class="com.fatwire.wem.sso.oam.OAMProvider">
    <property name="config" ref="ssoconfig" />
    </bean>
    <!--It is invoked by the OAM filter to resolve an OAM
authenticated user against a remote Site CS instance.-->
    <bean id="oamIdentity"
class="com.fatwire.auth.identity.RemoteUsernameResolver" >
    <property name="csServerUrl" value="http://
{ohs_server_host}:{ohs_port}/{sites_context_root}/custom/
customCsResolver.jsp"/>
    </bean>

    <!-- Single Sign On filter -->
    <bean id="ssofilter"
class="com.fatwire.wem.sso.oam.filter.OAMFilter">
    <property name="config" ref="ssoconfig" />
    <property name="provider" ref="ssoprovider" />
    <property name="identityResolver" ref="oamIdentity" />

    <!-- Set "trustConfigured" to "true" in case of trust
relationship configured between WebGate and WLS.
It will turn off check for OAM_ASSERTION header. -->
    <property name="trustConfigured" value="false" />
    </bean>

    <!-- Single Sign On listener -->
    <bean id="ssolistener"
class="com.fatwire.wem.sso.oam.listener.OAMListener">
    </bean>

    <!-- Single Sign On configuration -->
    <bean id="ssoconfig"
class="com.fatwire.wem.sso.oam.conf.OAMConfig">
    <!-- URL prefix for REST service endpoint -->
    <property name="serviceUrl" value="http://
```

```
{ohs_server_host}:{ohs_port}/{sites_context_root}/
REST" />

    <!-- URL prefix for Token Service servlet -->
    <property name="ticketUrl" value="http://
{oamtoken_server_host}:{oamtoken_port}/oamtoken" />

    <!-- URL to be called when WEM logout is
required. -->
    <property name="signoutUrl" value="http://
{oam_server_host}:{oam_port}/oam/server/logout?
end_url=http%3A%2F%2F{oah_server_host}%3A{oah_port}
%2F{sites_context_root}
%2Fwem%2Ffatwire%2Fwem%2FWelcome"/>

    <!-- Do not proxy tickets, tt's the last server
in the call chain -->
    <property name="proxyTickets" value="false" />

    <!-- Database Credentials needed by user lookup
in OAMFilter -->
    <property name="dbUsername" value="fwadmin" />
    <property name="dbPassword" value="xceladmin"/>

    <!-- Your application protected resources
(relative to applicationUrl) -->
    <property name="protectedMappingIncludes">
        <list>
            <value>/__admin</value>
            <value>/__admin/**</value>
        </list>
    </property>

    <!-- Your application protected resources
excludes (relative to applicationUrl) -->
    <property name="protectedMappingExcludes">
        <list>
            <value>/__admin/layout</value>
        </list>
    </property>
    <property name="applicationProxyCallbackPath"
value="/sso/proxycallback" />
    <property name="gateway" value="false" />
</bean>

    <context:component-scan base-
package="com.fatwire.crawler.remote.dao" />
    <context:component-scan base-
package="com.fatwire.crawler.remote.support" />
    <context:component-scan base-
package="com.fatwire.crawler.remote.di" />
    <context:component-scan base-
package="com.fatwire.crawler.remote.resources.support" />
```

```
</beans>
```

After you authenticate OAM, you need to perform the following integrations:

- [Integrating SiteCapture with OAM](#)
This topics covers steps to integrate SiteCapture with OAM.
- [Integrating OAM with Oracle WebCenter Sites: Satellite Server](#)
This topics covers steps to integrate OAM with Oracle WebCenter Sites: Satellite Server.
- [Integrating OAM with Visitor Services](#)
This topic covers steps to integrate OAM with Visitor Services.

Integrating SiteCapture with OAM

This topics covers steps to integrate SiteCapture with OAM.

Oracle Access Manager integration for SiteCapture you need to follow the steps:

1. Integrate Oracle WebCenter Sites with Oracle Access Manager. For more information see, [Switching to External Authentication](#).
2. Additional configuration required for Oracle Access Manager for SiteCapture.
 - a. Create additional resource definitions (see table below) for the WebCenter Sites application domain.

Resource URL	Protection level	Authentication	Authorization
<code>/<sites-context>/REST/roles</code>	Unprotected	Public	All Allowed
<code>/<sites-context>/custom/customCsResolver.jsp</code>	Unprotected	Public	All Allowed
<code>/resources/.../*</code>	Excluded	NA	NA
<code>/__admin/.../*</code>	Protected	Protected	Protected

- b. Configure the Protected Resource Policy as follows:
 - a. Click **Application Domains** and click the Open icon.
 - b. Click **Search** and select **WCSitesWebGate**.
 - c. Click the **Authentication Policies** tab and select **Authentication Policies** . For Authentication Scheme, select **LDAPWemScheme**, the authentication scheme previously created.
 - d. Click **Responses** tab.
 - e. Select the **Identity Assertion** checkbox.
 - f. When an Authentication policy is satisfied, it can create responses. The responses are required by the WebCenter Sites HTTP filter to recognize LDAP attributes and provide information about the authenticated user. In the following steps, you will create these responses.
 - g. Click the **Add (+)** icon. and enter the following:

- a. For **Name**: Enter **FATGATE_CSTIMEOUT**
 - b. For **Type**: Select **Header**
 - c. For **Value**: Enter **30**
3. SiteCapture Application Installation. During installation process of SiteCapture use parameters that are mentioned below:

Property Description	Property	Value
Content server host name or IP	fw.cs.hostname	{ohs_host}
Content server app server port	fw.cs.port	{ohs_port}
Content server context	fw.cs.context	{sites_context_root}
Content server protocol (http or https)	fw.cs.protocol	{sites.protocol}
Content Server user name having RESTADMIN role	fw.cs.username	{username}
Content server user password	fw.cs.password	{password}
SiteCapture server hostname or IP	fw.sc.hostname	{sc_host}
SiteCapture app server port	fw.sc.port	{sc_port}
SiteCapture protocol (http or https)	fw.sc.protocol	{sc.protocol}
CAS server hostname	fw.cas.host	{ohs_host} in installer. Or Empty in sitecapture.properties
CAS server port	fw.cas.port	{ohs_port} in installer. Or Empty in sitecapture.properties
CAS server context	fw.cas.context	cas in installer. Or Empty in sitecapture.properties

4. Adjust the `root-context.xml` file in SiteCapture Application. SiteCapture shipped with two files:

- a. `root-context.xml`

Backup `root-context.xml` file and rename to `root-context.xml.bak` file.

- b. `oam_root-context.xml`

Rename `oam_root-context.xml` file to `root-context.xml` file.

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xmlns:jdbc="http://www.springframework.org/schema/jdbc"
       xmlns:p="http://www.springframework.org/schema/p"
       xmlns:context="http://www.springframework.org/schema/context"
       xsi:schemaLocation="http://www.springframework.org/schema/
beans http://www.springframework.org/schema/beans/spring-
```

```
beans-3.1.xsd
  http://www.springframework.org/schema/jdbc http://
www.springframework.org/schema/jdbc/spring-jdbc-3.1.xsd
  http://www.springframework.org/schema/context http://
www.springframework.org/schema/context/spring-context-3.1.xsd">

  <bean id="propertyConfigurer"
class="org.springframework.beans.factory.config.PropertyPlaceholderCon
figurer" />
  <!-- Root Context: defines shared resources visible to all other
web components -->

  <jdbc:initialize-database data-source="dataSource"
enabled="true" ignore-failures="ALL">
  <!-- For installer the first jdbc:script will opened.
Installer will configure it automatically -->
  <jdbc:script location="classpath:crawler_oracle_db.sql" />
  <!--jdbc:script location="classpath:crawler_hsql_db.sql" /-->
  <!--jdbc:script
location="classpath:crawler_sql_server_db.sql" /-->
  <!--jdbc:script location="classpath:crawler_oracle_db.sql" /--
>
  <!--jdbc:script location="classpath:crawler_db2_db.sql" /-->
</jdbc:initialize-database>

  <!-- Section# 1 Installer will consume below configuration to
configure a datasource name created on the appservers -->
  <bean id="dataSource"
class="org.springframework.jndi.JndiObjectFactoryBean">
  <property name="jndiName" value="wcsitesDS"/>
</bean>

  <!-- Single Sign On provider -->
  <bean id="ssoprovider"
class="com.fatwire.wem.sso.oam.OAMProvider">
  <property name="config" ref="ssoconfig" />
</bean>
  <!--It is invoked by the OAM filter to resolve an OAM
authenticated user against a remote Site CS instance.-->
  <bean id="oamIdentity"
class="com.fatwire.auth.identity.RemoteUsernameResolver" >
  <property name="csServerUrl" value="http://{ohs_server_host}:
{ohs_port}/{sites_context_root}/custom/customCsResolver.jsp"/>
</bean>

  <!-- Single Sign On filter -->
  <bean id="ssofilter"
class="com.fatwire.wem.sso.oam.filter.OAMFilter">
  <property name="config" ref="ssoconfig" />
  <property name="provider" ref="ssoprovider" />
  <property name="identityResolver" ref="oamIdentity" />

  <!-- Set "trustConfigured" to "true" in case of trust
relationship configured between WebGate and WLS.
It will turn off check for OAM_ASSERTION header. -->
```

```
<property name="trustConfigured" value="false" />
</bean>

<!-- Single Sign On listener -->
<bean id="ssolistener"
class="com.fatwire.wem.sso.oam.listener.OAMListener">
</bean>

<!-- Single Sign On configuration -->
<bean id="ssoconfig"
class="com.fatwire.wem.sso.oam.conf.OAMConfig">
  <!-- URL prefix for REST service endpoint -->
  <property name="serviceUrl" value="http://
{oam_server_host}:{oam_port}/{sites_context_root}/REST" />

  <!-- URL prefix for Token Service servlet -->
  <property name="ticketUrl" value="http://
{oamtoken_server_host}:{oamtoken_port}/oamtoken" />

  <!-- URL to be called when WEM logout is required. -->
  <property name="signoutUrl" value="http://
{oam_server_host}:{oam_port}/oam/server/logout?
end_url=http%3A%2F%2F{oam_server_host}%3A{oam_port}
%2F{sites_context_root}%2Fwem%2Ffatwire%2Fwem%2FWelcome"/>

  <!-- Do not proxy tickets, tt's the last server in
thecall chain -->
  <property name="proxyTickets" value="false" />

  <!-- Database Credentials needed by user lookup
inOAMFilter -->
  <property name="dbUsername" value="fwadmin" />
  <property name="dbPassword" value="xceladmin"/>

  <!-- Your application protected resources (relative to
applicationUrl) -->
  <property name="protectedMappingIncludes">
    <list>
      <value>/__admin</value>
      <value>/__admin/**</value>
    </list>
  </property>

  <!-- Your application protected resources excludes
(relative to applicationUrl) -->
  <property name="protectedMappingExcludes">
    <list>
      <value>/__admin/layout</value>
    </list>
  </property>
  <property name="applicationProxyCallbackPath"
value="/sso/proxycallback" />
  <property name="gateway" value="false" />
</bean>
```

```
<context:component-scan base-  
package="com.fatwire.crawler.remote.dao" />  
<context:component-scan base-  
package="com.fatwire.crawler.remote.support" />  
<context:component-scan base-  
package="com.fatwire.crawler.remote.di" />  
<context:component-scan base-  
package="com.fatwire.crawler.remote.resources.support" />  
  
</beans>
```

 **Note:**

To update `mod_wl_ohs.conf` file the following code has to be included:

```
<IfModule weblogic_module>  
<Location /__admin>  
    SetHandler weblogic-handler  
    WebLogicHost SITECAPTURE_HOST  
    WebLogicPort SITECAPTURE_HOST  
</Location>  
</IfModule>
```

Integrating OAM with Oracle WebCenter Sites: Satellite Server

This topic covers steps to integrate OAM with Oracle WebCenter Sites: Satellite Server.

Configuring a Satellite Server for Oracle Access Manager integration is a simpler procedure than for WebCenter Sites. For more information on Integrating OAM with WebCenter Sites using Satellite Server, see [Integrating OAM with Oracle WebCenter Sites: Satellite Server](#)

 **Note:**

The code example below gives the RSS configuration in OAM OHS, and `mod_wl_ohs.conf` file.

```
<IfModule weblogic_module>  
<Location /ss>  
    SetHandler weblogic-handler  
    WebLogicHost SATELLITESERVER_HOST  
    WebLogicPort SATELLITESERVER_HOST  
</Location>  
</IfModule>
```

Integrating OAM with Visitor Services

This topic covers steps to integrate OAM with Visitor Services.

Before performing steps described in this section, ensure that you have configured the OAMIdentityProvider provided with Visitor Services. The OAM identity provider enables Visitor Services to communicate with OAM. For more information on Integrating OAM with Visitor Services, see *Oracle Fusion Middleware Developing with Oracle WebCenter Sites*.

Note:

The code example below gives the Visitor configuration in OAM OHS, and `mod_wl_ohs.conf` file.

```
<IfModule weblogic_module>
  <Location /oamlogin>
    SetHandler weblogic-handler
    WebLogicHost SITES_HOST
    WebLogicPort SITES_PORT
  </Location>
</IfModule>
<IfModule weblogic_module>
<Location /visitors-webapp>
  SetHandler weblogic-handler
  WebLogicHost VISITORSERVICES_HOST
  WebLogicPort VISITORSERVICES_HOST
</Location>
</IfModule>
```

Before Running the Upgrade Assistant

Before running the Upgrade Assistant to upgrade from 11.1.1.8, complete the tasks listed in this topic.

Note:

IBM DB2 Users Only: There is no support for DB2 database in 12.2.1.4.0 WCSites release. Customers are advised to use one of the certified databases (Ex: MS-SQLServer or Oracle) with WebCenter Sites. Customers using IBM DB2 will have to move WebCenter Sites schema from DB2 to one of the certified databases using the tools that the latter may provide.

Before running the Upgrade Assistant:

1. If your existing Sites 11.1.1.8 environment is a clustered configuration, you can either upgrade the primary node to 12.2.1.4.0 and reconfigure the cluster setup on target, or you can upgrade all cluster members.

To upgrade all cluster members, register the cluster nodes by completing the following steps:

- a. Sign in to Sites Admin Server URL.
- b. Go to **Admin** and click **Cluster Node Management** under **System Tools**.
- c. Configure node names for each cluster as per the source environment.

The nodes configured in this step are eventually mapped to the corresponding 11.1.1.8 nodes during the upgrade process.

2. Shut down the source (11.1.1.8) and the target (12.2.1.4.0) Admin Server and Managed Server instances.
3. If the source (11.1.1.8) and target (12.2.1.4.0) are on different physical machines, then Oracle recommends that you migrate the following source install directories on to the target machine before starting the upgrade process.

Migrating the source install directories on to the target machine helps to reduce the process time during upgrade.

- Sites 11.1.1.8.0 Sites Install/Home
 - Sites 11.1.1.8.0 Sites Shared
 - Sites 11.1.1.8.0 web apps path of deployed Sites war
4. If your existing Sites 11.1.1.8 environment is a clustered environment, migrate the nodes from source machine to target machine.

You can migrate the source instance directories in any order. Following is a sample example:

If the source environment is a two-node cluster setup, create two directories with name which you gave while registering the nodes during Cluster Node Management. For example, if node names given while registering the nodes are NodeA and NodeB, then create two directories: NodeA and NodeB on target machine.

Copy the source data on the target machine in the following format:

```
NodeA (Primary node)
  Sites-install/Home
  Sites-Shared
  Location of deployed sites war
NodeB (Secondary node)
  Sites-install/Home
  Location of deployed sites war
```

 **Note:**

You don't need to copy Sites-Shared per node.

5. Ensure that the source schema (11g) and target schema (12c) collocate on the same database server.

```
Oracle
<Single DB Instance>
11g schema
12c schema
```

```
MS SQL Server
<Single DB Instance>
11g schema
12c schema
```

6. If you are an Oracle user, you must create a Non-SYSDBA user for performing the upgrade. To create a Non-SYSDBA user, see [Creating a Non-SYSDBA User to Run the Upgrade Assistant](#).
7. Ensure that the 12.2.1.4.0 target schema tablespace size has enough capacity to complete the successful data migration from the 11g source schema. The default target schema size is set to 5 GB by the RCU. You can adjust the tablespace size according to the size of the source schema.
8. Typically, Sites uses the time zone setting of the WebLogic JVM. However, if you want to use a different time zone, ensure that you change it immediately after you install Sites, that is, before you create any data in the target (12.2.1.4.0) environment.
 - [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.
 - [Copying 11.1.1.8 Schema from a DB2 Source to a New Target Database](#)
You must import the Sites 11.1.1.8 schema from source DB2 database to target database (where 12.2.1.4.0 Sites schema is setup) before upgrading the schemas.

Creating a Non-SYSDBA User to Run the Upgrade Assistant

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

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

 **Notes:**

The non-SYSDBA user FMW is created solely for the purpose of running the Upgrade Assistant. After this step is complete, drop the FMW user. Note that privileges required for running the Upgrade Assistant may change from release to release.

By default, the `v$xatrans$` table does not exist. You must run the `XAVIEW.SQL` script to create this table before creating the user. Moreover, the `grant select` privilege on the `v$xatrans$` table is required only by Oracle Identity Governance. If you do not require Oracle Identity Governance for configuration, or if you do not have the `v$xatrans$` table, then remove the following line from the script:

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

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

```
create user FMW identified by password;
grant dba to FMW;
grant execute on DBMS_LOB to FMW with grant option;
grant execute on DBMS_OUTPUT to FMW with grant option;
grant execute on DBMS_STATS to FMW with grant option;
grant execute on sys.dbms_aqadm to FMW with grant option;
grant execute on sys.dbms_aqin to FMW with grant option;
grant execute on sys.dbms_aqjms to FMW with grant option;
grant execute on sys.dbms_aq to FMW with grant option;
grant execute on utl_file to FMW with grant option;
grant execute on dbms_lock to FMW with grant option;
grant select on sys.V_$INSTANCE to FMW with grant option;
grant select on sys.GV_$INSTANCE to FMW with grant option;
grant select on sys.V_$SESSION to FMW with grant option;
grant select on sys.GV_$SESSION to FMW with grant option;
grant select on dba_scheduler_jobs to FMW with grant option;
grant select on dba_scheduler_job_run_details to FMW with grant option;
grant select on dba_scheduler_running_jobs to FMW with grant option;
grant select on dba_aq_agents to FMW with grant option;
grant execute on sys.DBMS_SHARED_POOL to FMW with grant option;
grant select on dba_2pc_pending to FMW with grant option;
grant select on dba_pending_transactions to FMW with grant option;
grant execute on DBMS_FLASHBACK to FMW with grant option;
grant execute on dbms_crypto to FMW with grant option;
grant execute on DBMS_REPUTIL to FMW with grant option;
grant execute on dbms_job to FMW with grant option;
grant select on pending_trans$ to FMW with grant option;
grant select on dba_scheduler_job_classes to FMW with grant option;
grant select on sys.DBA_TABLESPACE_USAGE_METRICS to FMW with grant option;
grant select on SYS.DBA_DATA_FILES to FMW with grant option;
grant select on SYS.V_$ASM_DISKGROUP to FMW with grant option;
grant select on v$xatrans$ to FMW with grant option;
grant execute on sys.dbms_system to FMW with grant option;
grant execute on DBMS_SCHEDULER to FMW with grant option;
```

```
grant select on dba_data_files to FMW with grant option;
grant execute on UTL_RAW to FMW with grant option;
grant execute on DBMS_XMLDOM to FMW with grant option;
grant execute on DBMS_APPLICATION_INFO to FMW with grant option;
grant execute on DBMS_UTILITY to FMW with grant option;
grant execute on DBMS_SESSION to FMW with grant option;
grant execute on DBMS_METADATA to FMW with grant option;
grant execute on DBMS_XMLGEN to FMW with grant option;
grant execute on DBMS_DATAPUMP to FMW with grant option;
grant execute on DBMS_MVIEW to FMW with grant option;
grant select on ALL_ENCRYPTED_COLUMNS to FMW with grant option;
grant select on dba_queue_subscribers to FMW with grant option;
grant execute on SYS.DBMS_ASSERT to FMW with grant option;
grant select on dba_subscr_registrations to FMW with grant option;
grant manage scheduler to FMW;
```

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

```
grant execute on SYS.DBMS_FLASHBACK to fmw with grant option;
grant execute on sys.DBMS_SHARED_POOL to fmw with grant option;
grant execute on SYS.DBMS_XMLGEN to FMW with grant option;
grant execute on SYS.DBMS_DB_VERSION to FMW with grant option;
grant execute on SYS.DBMS_SCHEDULER to FMW with grant option;
grant execute on SYS.DBMS_SQL to FMW with grant option;
grant execute on SYS.DBMS_UTILITY to FMW with grant option;
grant ctxapp to FMW with admin option;
grant execute on SYS.DBMS_FLASHBACK TO FMW with grant option;
grant create MATERIALIZED VIEW to FMW with admin option;
grant all on SCHEMA_VERSION_REGISTRY TO FMW with grant option;
grant create SYNONYM to FMW with admin option;
grant execute on CTXSYS.CTX_ADM to FMW with grant option;
grant execute on CTXSYS.CTX_CLS TO FMW with grant option;
grant execute on CTXSYS.CTX_DDL TO FMW with grant option;
grant execute on CTXSYS.CTX_DOC TO FMW with grant option;
grant execute on CTXSYS.CTX_OUTPUT TO FMW with grant option;
grant execute on CTXSYS.CTX_QUERY TO FMW with grant option;
grant execute on CTXSYS.CTX_REPORT TO FMW with grant option;
grant execute on CTXSYS.CTX_THES TO FMW with grant option;
grant execute on CTXSYS.CTX_ULEXER TO FMW with grant option;
grant create JOB to FMW with admin option;
```

Copying 11.1.1.8 Schema from a DB2 Source to a New Target Database

You must import the Sites 11.1.1.8 schema from source DB2 database to target database (where 12.2.1.4.0 Sites schema is setup) before upgrading the schemas.

Consider the following criteria to make sure that the import operation is successful:

 **Note:**

This task is applicable only if your database is on DB2. You can skip this task for Oracle or MS SQL Server databases.

- Ensure the user performing the database import has the required privileges on the target database.
- Set the APPLHEAPSZ of the target database to an appropriate value depending on your schema size.

To copy the Sites 11.1.1.8 schema from source database to target database:

1. Enter the following command from the location where you created the database directories:

```
db2move <old_db> COPY -sn <schemaname> -co TARGET_DB <targetDB>
user <username> using <password>
```

Table 5-8 DatabaseMovement Command Parameters

Parameter	Description
db2move	Database movement tool command. It is used to move the tables within the DB2 database from the source system to the target system.
old_db	Specify the name of the database existing on the source system.
COPY	Indicates the database movement tool to perform a copy operation.
schemaname	Specify the schema name for the database existing on the source system.
targetDB	Specify the name of the target database.
username	Specify the admin user name.
password	Specify the password.

For example:

```
db2move dot8db COPY -sn dot8schema -co TARGET_DB 12cdb user db2inst1 using
test1234
```

2. Verify that the copy operation is successful by performing the following steps:
 - a. Sign in to the DB2 console.
 - b. Connect to the new (target) database.
 - c. List and query the tables to make sure that data is copied properly.
3. Grant the necessary privileges for the DB_SITE (RCU 12c Sites user) before upgrading.

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 (12.2.1.4.0).
- [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.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 5-9 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.
-logLevel <i>attribute</i>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 5-9 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Product Schemas Using the Upgrade Assistant

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

To upgrade the 11g schemas:

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 **Individually Selected Schemas** and click **Next**.

The Upgrade Assistant identifies the components that are available for a schema upgrade thus allowing you to select the schemas you want to include in the upgrade.

3. If you selected **Individually Selected Schemas**: On the Available Components screen, select the components for which you want to upgrade schemas. When you select a component, the schemas and any dependencies are automatically selected.

Select **Oracle WebCenter Sites** and click **Next**.

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 WebCenter Sites Source Version screen, select **11.1.1.8.0** and click **Next**. This is the starting point of your upgrade.
6. On the WebCenter Sites Location screen, specify the complete location of the existing Sites home and Sites shared directory, and location of the 12c configuration file: `wcs_properties.json`.

Click **Next**.

7. On the WebCenter Sites Source Schema screen, select the database type from the **Database Type** drop-down list.

Specify the database connect string in the **Database Connect String** field in the following format:

- (Oracle Database) `host:port/service` or `host:port:SID` or *TNS connect string*
- (Microsoft SQL Server) `//host:port;DatabaseName=dbname`
- (IBM DB2) `//host:port;DatabaseName=dbname`

Specify the user name with DBA privileges in the **DBA User Name** field. For example, *non-SYSDBA user 'fmw'*. See [Creating a Non-SYSDBA User to Run the Upgrade Assistant](#).

Specify the DBA password in the **DBA Password** field.

Specify the user name and password for the schema in the **Schema User Name** and **Schema Password** fields respectively.

If you are using Oracle database:

- a. Enter the details of the 12c Schema for WCSITES Schema page.
- b. Select the Schema user name from the drop-down list.
- c. Enter password and proceed.
- d. Enter the details of the Sites 11.1.1.8.0 schema for "WCSITES_SOURCE Schema" page.
- e. Update Schema user name and password for the Schema having 11.1.1.8.0 tables.

If you are using SQL Server:

- a. Enter the details of the 12c Schema for "WCSITES Schema" page.
- b. Select the Schema user name in the drop-down list. Only the RCU created WebCenter Sites Schemas will be listed in the drop-down list.
- c. Enter password and proceed.
- d. Enter the details of the Sites 11.1.1.8.0 schema for "WCSITES_SOURCE Schema" page. You need to provide a dba user and the Sites User.

- e. Enter the default prefix being used for the Schemas in Sites 11.1.1.8.0 in the "WCSITES SourceSchema prefix" page. For example, use "dbo" if that is the prefix.
8. 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* 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.

9. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

10. 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**.

11. If the schema upgrade is successful, a summary file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/wcsites_upgrade/
schema/Source Version/Database Type/summary.txt
```

Where, *Source Version* is 11.1.1.8.0 in this case and *Database Type* is the database which you are using.

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

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 12.2.1.4.0.

 **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.

Upgrading Domain Component Configurations

After you upgrade the product schemas, 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 (12.2.1.4.0).
- [Upgrading Sites Configuration Using the Upgrade Assistant](#)
You must upgrade the Sites configuration using the Upgrade Assistant.
- [Verifying the Domain-Specific-Component Configurations Upgrade](#)
To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 5-10 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.

Table 5-10 (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"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Sites Configuration Using the Upgrade Assistant

You must upgrade the Sites configuration using the Upgrade Assistant.

Configuration upgrade is supported for Apache Tomcat and IBM WebSphere servers as well for 11g starting point.

Following are the supported databases for the 11g starting point:

- Oracle

- Microsoft SQL
- DB2

Following are the supported application servers for the 11g starting point:

- Oracle WebLogic Server
- Apache Tomcat
- IBM WebSphere

**Note:**

Readiness Check for the Configuration upgrade is not available for 11g starting point.

To upgrade the 11g domain:

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`
3. 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.

4. On the All Configurations screen, select **All Configurations Used by a Domain** and specify the 12.2.1.4.0 domain location in the **Domain Directory** field by entering it directly or by clicking **Browse** to use a navigation tree to select a valid domain directory. Click **Next**.
5. 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.
6. 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.

7. On the WebCenter Sites Source Version screen, select **11.1.1.8.0**. This is the starting point of your upgrade.

In addition, specify the path of the 12c config directory, the complete path of the 12c wcs_properties.json file, and the 11.1.1.8.0 shared directory.

Click **Next**.

8. Depending on the source type (whether a single-server environment or a clustered environment), specify the required details:

- a. **(Single-server environment)** The WebCenter Sites Source Details screen is displayed if your source is a single-server environment.

On the WebCenter Sites Source Details screen, specify the complete path of the Source 11.1.1.8.0 Sites install directory and Source 11.1.1.8.0 Sites deployment directory location and click **Next**.

Following are examples of the Sites Deployment Directory:

- (Tomcat) `TOMCAT_HOME/webapps/sites`
- (WebSphere) `WAS_HOME/installableApps/sites`
- (WebLogic) `DOMAIN_HOME/manual/sites`

You can also click **Browse** to select a particular directory using the navigation tree.

- b. **(Clustered environment)** The WebCenter Sites Source Cluster Details screen is displayed if your source is a clustered environment.

 **Note:**

Ensure that you run the Upgrade Assistant on the machine where the Admin Server is deployed.

Specify the Sites Install and Sites deployment directory for each node in the **Source 11.1.1.8.0 Sites install directory** and **Source 11.1.1.8.0 Sites deployment directory** fields, respectively.

You can also click **Browse** to select a particular directory using the navigation tree.

After specifying the 11.1.1.8.0 directories, click **Next**.

 **Note:**

The node names listed in the Upgrade Assistant are the names that you provided while registering the nodes in the Cluster Node Management screen.

9. 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* 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.

10. 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.

11. 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**.

12. If the configuration upgrade is successful, summary files are generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/wcsites_upgrade/  
config<timestamp>/11.1.1.8.0/
```

If the source (11.1.1.8.0) is a clustered environment, the summary details are generated for each cluster as follows:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/wcsites_upgrade/  
config<timestamp>/11.1.1.8.0/
```

If the source (11.1.1.8.0) is a single-server environment, the following three summary files are generated:

- PropertyMigration_Summary.txt for Property Migration Summary
- HomeMigration_Summary.txt for Site Home Migration Summary
- SharedMigration_Summary.txt for Sites Shared Migration Summary

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

Verifying the Domain-Specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

To sign in to the Administration Console, go to: `http://
administration_server_host:administration_server_port/console`

To sign in to Oracle Enterprise Manager Fusion Middleware Control Console, go to: `http://administration_server_host:administration_server_port/em`

Note:

After upgrade, make sure you run the administration tools from the new 12c (12.2.1.4.0) Oracle home directory and not from the previous Oracle home directory.

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.

If you created the FMW user to run the Upgrade Assistant, ensure that you delete the account after verifying your upgrade was successful.

Post-Upgrade Validation Tasks

Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes.

To run the validation script:

1. The validation script is available at the following locations in the new Oracle Home:
(UNIX) `Oracle_Home/wcsites/plugins/upgrade/`
(UNIX) `./validation.sh`
(Windows) `Oracle_Home\wcsites\plugins\upgrade\`
(Windows) `validation.bat`
2. When the validation check is complete, validation summary report: `Validation.txt` is generated. Save it at any location on your system.
3. Review the validation summary report to check if there is any inconsistency in the data between your existing domain and the newly configured 12.2.1.4.0 domain.

Post-Upgrade Tasks

The post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in this topic.

After upgrading to WebCenter Sites 12.2.1.4.0:

1. Re-enable Lucene search indexes.

Follow these steps after the upgrade process to re-enable Lucene search indexes to perform search operations in Contributor UI. Indexes need to be recreated as the Lucene version is now upgraded:

- a. Set the `ORACLE_HOME` environment variable to the directory where you have installed Oracle WebCenter Sites.
- b. Stop all servers and components including the Admin Server and all managed servers.
- c. Create a complete backup of the existing `<DOMAIN_HOME/wcsites/wcsites/lucene>` folder. The `/lucene` folder is located in the WebCenter Sites `/shared` folder.
- d. Set the following environment variables using a terminal window:
 - `JAVA_HOME` to the latest supported JDK version (currently `JDK 1.8.0_211`)
 - `LUCENEPATH` to the existing `<DOMAIN_HOME/wcsites/wcsites/lucene>` as shown in the following example:

```
export LUCENEPATH=/scratch/Sites12.2.1.4.0/EXISTING_DOMAIN_HOME/wcsites/wcsites/lucene>
```
- e. Download the Lucene jar files (JARS).
- f. Navigate to the folder where the Lucene JARs were downloaded and execute the following two commands:

 **Note:**

Make sure that there are no exceptions (errors) when executing these commands which migrate the indices from Lucene version 4.4 to 6.6 version.

On Linux operating systems:

```
find $LUCENEPATH -mindepth 1 -type d -exec java
    -cp lucene-core-5.5.5.jar:lucene-backward-
codecs-5.5.5.jar
    org.apache.lucene.index.IndexUpgrader {} \;
```

```
find $LUCENEPATH -mindepth 1 -type d -exec java
    -cp lucene-core-6.6.0.jar:lucene-backward-
codecs-6.6.0.jar
    org.apache.lucene.index.IndexUpgrader {} \;
```

On Windows operating systems (substitute your actual directory paths):

```
c:\LuceneJars>java -cp
    lucene-core-5.5.5.jar;lucene-backward-codecs-5.5.5.jar
org.apache.lucene.index.IndexUpgrader
    <Path of \lucene folder present in Sites \shared
folder>\<Flex or Basic Asset type
Name (such as Flex_C11)>
```

```
c:\LuceneJars>java -cp
    lucene-core-6.6.0.jar;lucene-backward-codecs-6.6.0.jar
org.apache.lucene.index.IndexUpgrader
    Path of \lucene folder present in Sites \shared
folder>\<Flex or Basic Asset type
Name (such as Flex_C11)>
```

2. Restore or re-deploy the custom settings from your existing environment to your 12.2.1.4.0 environment.

These include custom changes made to Java libraries, static web resources, or element changes.

To restore changes made to the Java libraries or static web pages, see [Migrating Custom Java Libraries or Static Web Resources](#).

3. Start Administration Server and Managed Servers. See [Starting Servers and Processes](#).

 **Note:**

Before you start the Administration Server and Managed Servers, clear the cached images and files in the browser.

4. Reconfigure passwords for the publishing process.
 - a. Sign in to the Administration Server URL as the Administrator.
 - b. Go to **Admin** menu and click **Destinations** under **Publishing**.
 - c. Update the publishing destination URL, Port, Username, and Password.

5. If external WebRoots are configured, update WebRoots from Sites Admin user interface.
6. If your source was a clustered environment, copy the config directory xml file settings from your source environment on which you run the Upgrade Assistant, to all other nodes on your upgraded environment.

These include the following:

- cs-cache.xml
 - cas-cache.xml
 - ss-cache.xml
 - linked-cache.xml
 - MobilityServices.xml
 - Custom/RestResources.xml
 - wcs_properties_bootstrap.ini
7. (Applicable only if you are using SQL server) Fusion Middleware Infrastructure Release 12c requires the SQL Server database to be configured in a case sensitive mode. As a result, ics:sql jsp tag provided by WebCenter Sites require the table value to be in the same case as stated in the database.

Following is the syntax of the ics:sql statement:

```
<ics:sql
  sql="sql commands"
  listname="list name"
  table="name of table"
  [limit="max number of results"]/>
```

You must provide the name of the table in the same case as specified in the SQL Server database.

8. The following properties are reset to the application Admin user account values provided during Sites Configuration Setup process:
 - xcelerate.batchuser and password
 - cs.emailpassword

You must update these properties with their appropriate values using the Property Management Tool.

9. After WCC integration, reset the wcc.server.password in WCC Configuration to view all the mapped rules.
10. If the instance is delivery and has any of the Sample Sites published, then you must republish the Sample Sites to the delivery instance from upgraded development instance.
11. **(If you are upgrading from a previous 12c release only and if Sites is installed with RSS and Site Capture on same domain)**
 - a. If you are upgrading Sites with RSS and Site Capture to 12c (12.2.1.4.0) from 12.2.1.0 or a later release, you must create a new domain and install RSS and Site Capture again.
 - b. If you are not installing Site Capture on the same port, perform the following:
 - i. Change the Site Capture port in the FW_View and FW_Application tables for Site Capture in Sites
 - ii. Change the port number in the valid.urls property

- iii. Change the port number in other properties under the *SiteCapture* category
- c. After installing RSS, change the RSS port in the SystemSatellite table, unless RSS is installed on same port.
- [Starting Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.
- [If the Existing Instance is a Delivery Instance...](#)
If you are upgrading from 11g to the latest 12c release, and if your existing instance is a delivery instance, then you must manually reassign Apps for the User Published Sites.

Starting Servers and Processes

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

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

Note:

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

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

Step 1: Start the Administration Server

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

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

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

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

Step 2: Start Node Manager

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

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

Step 3: Start the Managed Servers

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

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

When prompted, enter your user name and password.



Note:

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

Step 4: Start System Components

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

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

You can start system components in any order.

If the Existing Instance is a Delivery Instance...

If you are upgrading from 11g to the latest 12c release, and if your existing instance is a delivery instance, then you must manually reassign Apps for the User Published Sites.

To reassign Apps for User Published Sites:

1. Sign in to the AdminSite as an Administrator.
2. To add Admin App to User Published Sites:
 - a. Go to **WEM Admin** under **AdminSite**.
 - b. Click **Apps**. Then click **Manage App** under **Admin App**.
 - c. Click **Assign to Sites**. Click **Select Sites** and then click **Continue**.
 - d. Select **Advanced User** role and save the change.
3. To add Contributor App to User Published Sites:
 - a. Go to **WEM Admin** under **AdminSite**.
 - b. Click **Apps**. Then click **Manage App** under **Admin App**.
 - c. Click **Assign to Sites**. Click **Select Sites** and then click **Continue**.
 - d. Select **Sites User** role and save the change.
4. To add Other Apps, follow the similar path and assign required roles.

Migrating Custom Java Libraries or Static Web Resources

Perform this optional step only if custom Java libraries or static web resources were added to the web application in your pre-upgrade environment and you want to continue to use them in the upgraded environment.

If the web application includes custom Java libraries (jar files) or custom static web resources, such as css, js, or images, then you will have to manually migrate them to the upgraded environment after the upgrade. If you do not migrate these resources, you will not be able to access the functionality in the upgraded environment.

The WebCenter Sites web application is shipped as a WAR file. The web application is deployed during Config Wizard process initially and can be redeployed multiple times during the application lifecycle. Oracle recommends that you do not include any implementation-specific customizations to the Sites WAR file as the changes will be overwritten during the upgrade process.

When extending the WebLogic Server Shared Libraries framework, Sites provides `extend.sites.webapp-lib.war` as a shared library. This file is located in `NEW_ORACLE_HOME/wcsites/webcentersites/sites-home/` directory. Any implementation-specific customizations, such as static web resources or JAVA libraries, can be included in this WAR file. This shared library gets deployed during application lifecycle and shares the same context root as sites (`/sites/`). The contents of this shared library will not be overwritten during patching process.

Additionally, if the Sites UI has been customized, the code changes must also be migrated to the upgraded environment.

6

Upgrading Oracle WebCenter Portal from 11g to 12c

You can upgrade your existing Oracle WebCenter Portal 11.1.1.9.0 installations to 12c (12.2.1.4.0).

Note:

To patch previous releases of Oracle WebCenter Portal 12c to release 12c (12.2.1.4.0), follow the generic upgrade procedure described in [About the Oracle WebCenter Upgrade Process](#). There are no WebCenter Portal-specific pre- or post-upgrade tasks for moving to 12c (12.2.1.4.0).

This chapter describes the WebCenter Portal 11g-specific upgrade steps. Ensure that you follow the sequence of steps listed in [About the Oracle WebCenter Upgrade Process](#), and have performed the required generic steps before you perform the upgrade tasks listed in this chapter.

Note:

Oracle WebCenter Portal has deprecated the support for Jive features (announcements and discussions). If you have upgraded from a prior release to Release 12c (12.2.1.4.0), Jive features remain available in your upgraded instance but Oracle support is not provided for these features. In the next release, Jive features will not be available even in the upgraded instances

Note:

As of 12c (12.2.1.4) Oracle WebCenter Portal has also deprecated the support for Pagelets.

This chapter includes the following topics:

- [Performing Pre-Upgrade Tasks for Oracle WebCenter Portal](#)
- [Upgrading Oracle WebCenter Portal 11g Installations](#)
- [Performing Post-Upgrade Tasks for Oracle WebCenter Portal](#)
- [Understanding the Impact of Upgrade on Deprecated Features](#)
- [Troubleshooting Oracle WebCenter Portal Upgrade Issues](#)

Performing Pre-Upgrade Tasks for Oracle WebCenter Portal

Before you upgrade your existing Oracle WebCenter Portal environment, complete the following tasks:

- [Reassociating to a Database-Based Policy Store](#)
- [Exporting Metadata for Portlet Producer Applications](#)
- [Saving OmniPortlet and Web Clipping Configuration](#)
- [Preparing to Migrate Custom Task Flows](#)
- [Migrating Portal Framework Applications](#)
- [Migrating from Folders_g to FrameworkFolders](#)

If your Oracle WebCenter Portal instance uses the Folders_g folder service, then migrate the content from the Folders_g folder service to the FrameworkFolders folder service on Oracle WebCenter Content Server.

Reassociating to a Database-Based Policy Store

If your WebCenter Portal 11g environment uses a file-based policy store or Oracle Internet Directory (OID) as the policy store, you must reassociate the policy store to a database-based policy store before upgrading to Oracle WebCenter Portal 12c.

Exporting Metadata for Portlet Producer Applications

Oracle WebCenter Portal 11g provides various preconfigured portlet producers, which include OmniPortlet, Web Clipping, WSRP Parameter Form Portlet, sample WSRP portlet producers, and sample PDK-Java portlet producers. To migrate customizations or metadata of your 11g portlet producer applications, you must export the data from your 11g application before upgrading Oracle WebCenter Portal. In the upgraded instance, you can then import these customizations back into portlet producer applications.

You can export producer metadata to an EAR file by using the `exportPortletClientMetadata` WLST command. For information, see `exportPortletClientMetadata` in *WebCenter WLST Command Reference*.

Saving OmniPortlet and Web Clipping Configuration

If your 11g Oracle WebCenter Portal instance contains Web Clipping and OmniPortlets portlets, keep a copy of their HTTP proxy entries before you upgrade your WebCenter Portal instance.

1. Navigate to the `provider.xml` file in the 11g domain at the following location:

Web Clipping: `11g_DOMAIN_HOME/servers/WC_Portlet/tmp/_WL_user/portalTools_11.1.1.x.0/randomly_generated_directory/war/WEB-INF/providers/webClipping/provider.xml`

OmniPortlet: `11g_DOMAIN_HOME/servers/WC_Portlet/tmp/_WL_user/portalTools_11.1.1.x.0/randomly_generated_directory/war/WEB-INF/providers/omniPortlet/provider.xml`

2. Copy the HTTP proxy entries for Web Clipping and omniPortlet from the `11g` `provider.xml`. For example:

```
<proxyInfo class="oracle.portal.provider.v2.ProxyInformation">
  <httpProxyHost>proxy.example.com</httpProxyHost>
  <httpProxyPort>80</httpProxyPort>
  <dontProxyFor>*.example.com</dontProxyFor>
</proxyInfo>
```

You will need to add these entries to the `provider.xml` files in your upgraded WebCenter Portal instance.

Preparing to Migrate Custom Task Flows

Your WebCenter Portal `11g` application might contain custom task flows that are deployed through custom shared libraries. If you've extended Webcenter Portal with custom shared libraries by using the `SampleWebCenterSpacesExtension` application, then you must upgrade the application and deploy the shared libraries in Release `11g` before upgrading to Release `12c`. Also, if you've developed your own custom task flows using the `DesignWebCenterSpaces` application, you must upgrade it and deploy the shared libraries in Release `11g`. The `SampleWebCenterSpacesExtension` and `DesignWebCenterSpaces` projects are not supported anymore. Therefore, you need to move them to a new WebCenter Portal Server Extension application.

1. Create a WebCenter Portal Server Extension application in JDeveloper `11g` using the WebCenter Portal Server Extension Template. For information, see [Creating a WebCenter Portal Server Extension Workspace](#) in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*. If you already have a WebCenter Portal Server Extension application, you can skip this step.
2. Move the projects created under the `SampleWebCenterSpacesExtension` application to the newly created WebCenter Portal Server Extension application. Then, add reference of these shared libraries to the `PortalSharedLibrary` project, which is available in the newly created application.

Also, if you've registered your own shared library using the `WebCenterSpacesExtensionLibrary` project in the `DesignWebCenterSpace` application, then move all the references to the `PortalSharedLibrary` project in the WebCenter Portal Server Extension application.

For information, see [Registering Additional Shared Libraries With WebCenter Portal](#) in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

3. Deploy new versions of WebCenter Portal's shared library `extend.spaces.webapp` with your shared libraries references by using the WebCenter Portal Server Extension application. Before deploying the new version of `extend.spaces.webapp`, make sure that all the shared libraries referenced by the `PortalSharedLibrary` project are deployed to the `WC_spaces` managed server.

For information, see [Deploying Extensions to the WebCenter Portal Shared Library \(`extend.spaces.webapp.war`\)](#) in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

Migrating Portal Framework Applications

 **Note:**

This pre-upgrade task is applicable if you want to migrate your 11.1.1.9.x Portal Framework application to WebCenter Portal 12c.

Oracle WebCenter Portal 11g supports the Portal Framework technology for creating and deploying Portal Framework applications (previously referred as custom portal applications) in JDeveloper. The Portal Framework technology is not available in WebCenter Portal 12c release. Oracle provides the support for migrating Portal Framework applications to WebCenter Portal. This support is available for migrating applications from release 11.1.1.9.x. The migrated application is available as a portal in WebCenter Portal 12c.

To migrate your Portal Framework application to WebCenter Portal 12c, you must first patch your existing environment to the latest patch available for Oracle WebCenter Portal 11.1.1.9.0 and then migrate the application to release 11.1.1.9.x. For information, see [Migrating a Portal Framework Application to WebCenter Portal](#) in *Administering Oracle WebCenter Portal*. After patching to WebCenter Portal release 11.1.1.9.x, you can upgrade to release 12c as described in [About the Oracle WebCenter Upgrade Process](#).

Migrating from Folders_g to FrameworkFolders

If your Oracle WebCenter Portal instance uses the Folders_g folder service, then migrate the content from the Folders_g folder service to the FrameworkFolders folder service on Oracle WebCenter Content Server.

For information, see Migrating Folders_g to FrameworkFolders in *Oracle Fusion Middleware Administering Oracle WebCenter Portal*.

Upgrading Oracle WebCenter Portal 11g Installations

The following table describes the tasks required to upgrade Oracle WebCenter Portal 11g to 12c.

 **Note:**

In Oracle WebCenter Portal 11g, the default names of managed servers are WC_Spaces, WC_Portlet, WC_Collaboration, and WC_Uilities. In a fresh Oracle WebCenter Portal 12c installation, WC_Uilities, which hosted Analytics, is deprecated, and WC_Spaces is replaced by WC_Portal and hosts Analytics. When you upgrade from Oracle WebCenter Portal 11g to 12c, the default managed server names are not changed. Further, Analytics remains deployed on the WC_Uilities managed server.

Table 6-1 Upgrading Oracle WebCenter Portal from 11g to 12c

Step	Description
Upgrade the WebCenter Portal installation	<p>WebCenter Portal and WebCenter Content Server are in the same domain:</p> <p>After you upgrade the schemas and reconfigure the domain as described in Upgrading an Oracle WebCenter Domain, run the <code>upgradeWebCenterPortal</code> WLST command if the node manager is set up and managed servers can be started from the Admin console. See Running the upgradeWebCenterPortal WLST Command.</p> <p>WebCenter Portal and WebCenter Content Server are installed in separate Fusion Middleware Home and domain:</p> <p>Perform the pre-upgrade task of migrating from <code>Folders_g</code> to <code>FrameworkFolders</code>. See Migrating Folders_g to FrameworkFolders in <i>Oracle Fusion Middleware Administering Oracle WebCenter Portal</i>.</p> <p>To upgrade Oracle WebCenter Portal from release 11.1.1.9.0, do the following:</p> <ol style="list-style-type: none"> 1. While installing Product distributions, install the WebCenter Content Binaries to the Oracle Fusion Middleware of WebCenter Portal. 2. Upgrade the schemas and reconfigure the domain containing WebCenter Content to 12.2.1.4.0. See Upgrading an Oracle WebCenter Domain. 3. Upgrade the schemas and reconfigure the domain containing WebCenter Portal to 12.2.1.4.0. See Upgrading an Oracle WebCenter Domain. 4. Run the <code>upgradeWebCenterPortal</code> WLST command. See Running the upgradeWebCenterPortal WLST Command.
Access the upgrade metrics	<p>Optional.</p> <p>Access the upgrade metrics for Oracle WebCenter Portal to analyze the upgrade performance. This must be done before you restart the servers.</p> <p>See Accessing Upgrade Metrics.</p>
Enable additional components on Content Server and restart the server	<p>On Content Server, enable additional components like <code>DynamicConverter</code> and <code>Imaging</code>. Enable <code>PortalVCRHelper</code> if Site studio is configured. Then, restart Content Server.</p> <p>See Enabling or Disabling a Component Using the Component Manager.</p>
Restart the Administration Server and all the managed servers	<p>Start your Oracle Fusion Middleware environment. This involves starting your Oracle WebLogic Server, Node Manager, Administration Server, managed servers, OPMN, and all system components.</p> <p>See Performing Post-Upgrade Configuration Tasks.</p>
Run the upgrade audit tool by running the <code>listDeprecatedFeaturesUsage</code> WLST command	<p>Run the <code>listDeprecatedFeaturesUsage</code> WLST command to run the upgrade audit tool to view the list of deprecated features in your upgraded WebCenter Portal 12c installation.</p> <p>See Running the Upgrade Audit Tool.</p>

- [Running the upgradeWebCenterPortal WLST Command](#)

- [Running the Upgrade Audit Tool](#)
- [Accessing Upgrade Metrics](#)

Running the upgradeWebCenterPortal WLST Command

Run the `upgradeWebCenterPortal WLST` command to move metadata from MDS to database and upgrade security permissions in your upgraded Oracle WebCenter Portal 11g installation.

To run the `upgradeWebCenterPortal WLST` command:

1. Navigate to your WebCenter Portal Oracle home directory and invoke the WLST script:

(UNIX) `ORACLE_HOME/common/bin/wlst.sh`

(Windows) `ORACLE_HOME\common\bin\wlst.cmd`

2. At the WLST command prompt, enter the following command to connect to the Administration Server for Oracle WebCenter Portal:

```
wls:/offline>connect('user_name','password', 'host_name:port_number')
```

where

- `user_name` is the username of the operator who is connecting to the Administration Server
- `password` is the password of the operator who is connecting to the Administration Server
- `host_name` is the host name of the Administration Server
- `port_number` is the port number of the Administration Server

For help with this command, type `help('connect')` at the WLST command prompt.

3. Run the `upgradeWebCenterPortal WLST` command. For information about the command syntax, see `upgradeWebCenterPortal` in *Oracle Fusion Middleware WebCenter WLST Command Reference*. For information about the messages displayed and reports generated, see [Output Generated by the upgradeWebCenterPortal WLST Command](#).
- [Output Generated by the upgradeWebCenterPortal WLST Command](#)

Output Generated by the upgradeWebCenterPortal WLST Command

The `upgradeWebCenterPortal WLST` command generates the following reports:

- `UpgradeSummary.txt`: Lists the total number of portals or portal templates for which upgrade was attempted, succeeded, and failed.
- `UpgradeDetails.txt`: Shows detailed upgrade information for each portal, listing the details such as the number of pages, resource catalogs, navigations upgraded. Also shows the details of any upgrade errors reported for a portal.
- `UpgradeDiagnostic.log`: Shows the diagnostic information for the `upgradeWebCenterPortal WLST` command.

Each time you run the `upgradeWebCenterPortal` command, the reports get updated with the additional details from the last run. If there are upgrade errors reported at any step, fix the errors and run `upgradeWebCenterPortal` again. The upgrade process is considered complete when `upgradeWebCenterPortal` does not report any more failed attempts to upgrade any portals or portal templates, and its last output shows the message `WebCenter Portal application upgrade is complete`.

For information about troubleshooting the upgrade issues, see [Troubleshooting Oracle WebCenter Portal Upgrade Issues](#).

Sample Command 1

Run the following command when your WebCenter Portal instance is configured to use WebCenter Content Server.

```
upgradeWebCenterPortal(appName='webcenter', server='WC_Spaces', migrationDirectory='/scratch/upgrade_log', contentServerName='UCM_server1', contentDbConnectionUrl='wccdbhost:wccdbport:wccdbsid', contentDbUserName='DEV_OCS')
```

Sample Command 2

When running the `upgradeWebCenterPortal WLST` command, you can specify the parameters depending on your requirements.

Run the following command when your 11g instance is *not* configured to use WebCenter Content Server. The following sample command moves the metadata from MDS to DB and upgrades security permissions.

```
upgradeWebCenterPortal(appName='webcenter', server='WC_Spaces', migrationDirectory='/scratch/upgrade_log')
```

The following is the sample message displayed when you run this command:

```
Starting WebCenter Portal application upgrade.  
Already in Domain Runtime Tree
```

To effect connection changes, you must restart the managed server on which the WebCenter application is deployed. If you have set `adminPassword`, `keystorePassword`, or `privateKeyPassword` in your content server connection, then set the values again in the underlying RIDD connection. Do this by running `setContentServerConnection` and specifying the values, if applicable.

```
Starting data migration from MDS to database...
```

```
[TRACE]: Upgrade may take some time to complete depending on the number of portals and pages in your Oracle WebCenter Portal installation. To monitor the upgrade progress, refer to the diagnostic log file WC_Portal-diagnostic.log at the location "/scratch/software/user_projects/domains/base_domain/servers/WC_Spaces/logs".
```

```
#####  
Upgrade Run: 1  
#####  
Upgrade of 44 Portals/Portal Templates attempted.  
Upgrade of 44 Portals/Portal Templates succeeded.  
Upgrade of 0 Portals/Portal Templates failed.
```

```
Data migration from MDS to database is successfully completed.
```

```
Policy URI For Authenticated Access: oracle/wss10_saml_token_service_policy
```

Already in Domain Runtime Tree

```
Command FAILED, Reason: JPS-04207: Matching Grantee not found: [GranteeEntry:
codeSource=file:${common.components.home}/modules/oracle.wsm.agent.common_11.1.1/
wsm-agent-core.jar principals=[]].
```

Already in Domain Runtime Tree

```
Command FAILED, Reason: JPS-04201: Cannot grant permission(s). Grant already
exists for grantee [GranteeEntry: codeSource=null principals=[[AppRole:
appID=webcenter name=s5f9c65ed_c93c_4467_96cf_06a82f3dad22#-#Spaces-User
displayName=null description=null category=null
uniquename=cn=s5f9c65ed_c93c_4467_96cf_06a82f3dad22\#-\#Spaces-
User,cn=Roles,cn=webcenter,cn=opssSecurityStore,cn=JPSText,cn=opssRoot
guid=108CDE506D8A11E5BFE5CF1BB12B2942 members=[]
classname=oracle.security.jps.service.policystore.ApplicationRole
type=JPS_APPLICATION_ROLE]]].
```

Starting upgrade for portal roles...
Upgrade of the portal roles is complete.

Permissions upgrade completed with warnings

WebCenter Portal application upgrade is complete.



Note:

Running the `upgradeWebCenterPortal WLST` command displays certain error messages that permissions already exist. For example:

Already in Domain Runtime Tree

```
Command FAILED, Reason: JPS-04201: Cannot grant permission(s). Grant
already exists for grantee [GranteeEntry: codeSource=null
principals=[[AppRole: appID=webcenter
name=s5f9c65ed_c93c_4467_96cf_06a82f3dad22#-#Spaces-User
displayName=null description=null category=null
uniquename=cn=s5f9c65ed_c93c_4467_96cf_06a82f3dad22\#-\#Spaces-
User,cn=Roles,cn=webcenter,cn=opssSecurityStore,cn=JPSText,cn=opssRo
ot guid=108CDE506D8A11E5BFE5CF1BB12B2942 members=[]
classname=oracle.security.jps.service.policystore.ApplicationRole
type=JPS_APPLICATION_ROLE]]].
```

Such error messages do not affect any functionality. You can safely ignore the error messages and proceed with upgrading your WebCenter Portal instance.

Running the Upgrade Audit Tool

In Oracle WebCenter Portal 12c, certain features such as document task flows have been deprecated. Post upgrade, you can run the upgrade audit tool to list down the usage of all deprecated features in your upgraded WebCenter Portal installation.

Run the `listDeprecatedFeaturesUsage WLST` command to list the usage of deprecated features in your upgraded Oracle WebCenter Portal installation:

```
listDeprecatedFeaturesUsage (appName='webcenter', server='WC_Spaces', reportDirectory='/scratch/audit', portal='portal1, portal2')
```

where:

- `appName` is the WebCenter Portal application where deprecated features need to be audited.
- `server` is the managed server on which WebCenter Portal is deployed.
- `reportDirectory` is the path to the writable directory where audit report will be generated.
- `portal` is the list of specific portals that you want to audit. You can pass comma separated list of portal names. It is an optional parameter. If you do not specify this parameter, report is generated for the entire WebCenter Portal application.

For example, the following command generates the audit report for the WebCenter Portal application deployed on the `WC_Spaces` managed server and stores the report in the `/scratch/audit` folder:

```
listDeprecatedFeaturesUsage (appName='webcenter', server='WC_Spaces', reportDirectory='/scratch/audit')
```

When you generate the upgrade audit report for the entire WebCenter Portal application, the following files are generated in the `auditReport` subdirectory under the directory specified for the `reportDirectory` parameter in the WLST command:

- `summary.txt`: Lists the portals and portal templates that contain deprecated features and specifies the number of artifacts that contain deprecated features, as shown in [Figure 6-1](#).
- `connections.txt`: Lists the deprecated connections in WebCenter Portal.

 **Note:**

You must remove the deprecated connections otherwise there might be some functionality issues.

- A `.txt` file for each portal and portal template containing deprecated features: Lists the artifacts (such as pages, page templates, and resource catalogs) that contain deprecated features and specifies name of the deprecated feature. [Figure 6-3](#) shows the audit report for a specific portal.

Figure 6-1 Upgrade Audit Report - summary.txt

```

The deprecated features are being used in your installation as described below. See the specific portal file for more details.

Portal Server
- 1 Connection(s)
- 10 Portal(s)/Portal Template(s)

Home Portal
- 2 Page(s)
- 3 Resource Catalog(s)

DeprecationPortal
- 6 Page(s)
- 1 Page Template(s)
- 1 Resource Catalog(s)

MontysDocumentExchangeSubPortal
- 1 Page(s)

MontysHiddenDiscussionSitePortal
- 1 Resource Catalog(s)

MontysPortal
- 1 Page(s)
    
```

Figure 6-2 Upgrade Audit Report - connections.txt

```

Listed below are connection artifacts that are deprecated.

-----
Action
-----
1. Login as Portal administrator into EM or WLST.
2. Delete or Modify the listed connection accordingly.

-----
Connection(s)
-----

Documents
-----
Name: myFS
JcrConnection: JCRAdapterType=FileSystemConnection

Name: myOraclePortal
JcrConnection: JCRAdapterType=PortalConnection

Microsoft Exchange 2003
-----
Name: exchange-2003
AdapterName: MEx2003

Live Communication Server
-----
Name: LCS2005-STPORT13
AdapterName: LCS

WebClipping Producers
-----
Name: wc-WebClipping
URL: http://wcdevportlet.us.oracle.com:8899/portalTools/webClipping/providers/webClipping
    
```

Figure 6-3 Upgrade Audit Report for a Portal

```

Listed below are DeprecationPortal artifacts that use deprecated features.
-----
Summary
-----
  - 6 Page(s)
  - 1 Page Template(s)
  - 1 Resource Catalog(s)
-----

Action
-----
1. Login as Portal moderator.
2. Locate listed page and edit it and remove the taskflows and portlets usages listed.
3. Locate the listed catalog under Portal Assets, edit the catalog to remove the taskflow usages listed.
4. Locate the listed page template under Portal Assets, edit the template to remove the taskflow usages listed.
-----

Page(s)
-----

Name: ActivityGraph
URL: /portal/DeprecationPortal/page1
Usage(s):
Similar Items
Recommended Connections
Similar Portals
Top Items
Top Contributions

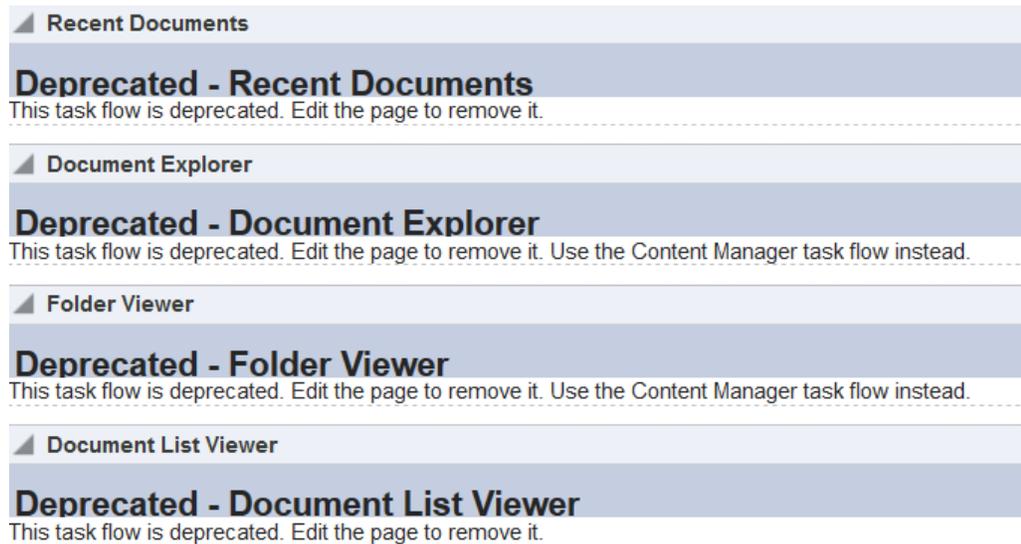
Name: Documents
URL: /portal/DeprecationPortal/page19
Usage(s):
Documents Explorer
Documents Manager
Folder Viewer
Recent Documents
"Portal_DeprecationPortal.txt" 92L, 1735C

```

The following example generates the audit report only for a portal named `MyPortal`. This will generate only the `MyPortal.txt` file. The connections and summary files are not generated for a portal.

```
listDeprecatedFeaturesUsage(appName='webcenter', server='WC_Spaces', reportDirectory='/scratch/audit', portal='MyPortal')
```

In your upgraded WebCenter Portal, if a portal page contains a deprecated feature, the feature appears blank in the page view mode. In the page edit mode, a message displays that the feature is deprecated and lists the action required. For example, [Figure 6-4](#) shows deprecated document tasks flows listed in the page editor. Note that the messages specify that you remove the deprecated task flows or use their 12c equivalent.

Figure 6-4 Deprecated Task Flows in Page Editor in the Upgraded WebCenter Portal Instance

Accessing Upgrade Metrics

You can use Oracle Dynamic Monitoring Service (DMS) to view upgrade metrics and analyze how much time was taken for the overall upgrade process and for each portal and its WebCenter Service handlers.

To access upgrade metrics:

1. Access DMS Spy Servlet using the following URL format:

```
http://host:port/dms/Spy
```

Where *host:port* refer to the location where Oracle WebCenter Portal is installed.

2. Sign in as an administrator.
3. Locate the **webcenter_upgrade** metric in the left pane.

The upgrade metrics for each portal are displayed in milliseconds.

4. View the upgrade processing time for your portal. For each portal, the following metrics are relevant: `upgradeProcessingTime` and `cleanupProcessingTime`.

The metrics also display the total processing time taken for the entire upgrade of Portal Server

If required, you can save this report as a PDF for future reference. The upgrade metrics are lost when you restart the servers.

5. Locate **webcenter_upgrade_portal** metric in the left column.

The upgrade metrics shows how long each WebCenter Service handler took for upgrade processing per portal. It shows the breakdown of the time taken for upgrading each portal.

Performing Post-Upgrade Tasks for Oracle WebCenter Portal

Complete the post-upgrade tasks after you have upgraded Oracle WebCenter Portal.

- [Upgrading 11g Portlet Producers](#)
- [Restoring OmniPortlet and Web Clipping Configuration](#)
- [Verify the Content Server Connection is Upgraded](#)
- [Upgrading WebCenter Portal 11g Assets to 12c](#)
- [Updating Custom Coherence Configuration](#)
- [Migrating Custom Task Flows](#)
- [Replacing Document Viewer Component](#)

Upgrading 11g Portlet Producers

In an upgraded Oracle WebCenter Portal instance, 11g portlets are not accessible. To ensure that portlets are available, you must migrate the required portlet producer applications to release 12c. You must also import portlet producer customizations and redeploy your portlet producer applications.

- [Migrating a Portlet Producer Application](#)
- [Redeploying a Portlet Producer Application](#)
- [Migrating Customizations](#)

Migrating a Portlet Producer Application

To migrate an 11g portlet producer application to release 12c:

1. Install Oracle JDeveloper 12c.

Oracle JDeveloper provides an integrated development environment (IDE) for developing portals and custom portal components. For information on obtaining and installing Oracle JDeveloper, see the Oracle JDeveloper page on OTN at:

<https://www.oracle.com/application-development/technologies/jdeveloper.html>

2. Install the Oracle WebCenter Portal extension bundle. For information, see *Installing the WebCenter Portal Extensions for JDeveloper in Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

3. Start JDeveloper 12c.

4. Open your 11g portlet producer application.

This invokes the migration wizard, which is displayed every time an 11g application is opened in JDeveloper 12c.

5. On the Confirmation page, the **Yes** option is selected by default. Click **Next** to confirm that you want to migrate your application.
6. On the Java Web Projects page, click **Next** to specify that you want to migrate projects created using JavaServer Pages JSTL to the latest versions.
7. Click **Finish** to begin upgrading your application.

A progress dialog displays while the upgrade process executes.

8. When the application upgrade is complete, the Migration Status dialog displays the list of projects that have been upgraded. Click **OK**.

The upgraded application is opened and its projects are listed in the Application Navigator. If there are any errors during application upgrade, they are listed in the Message - Log window.

Redeploying a Portlet Producer Application

You can deploy your upgraded portlet producer application to any Oracle WebLogic Server managed server configured to support Oracle WebCenter Portal's portlet producers. For deployment, you can use Oracle Enterprise Manager Fusion Middleware Control, Oracle WebLogic Server Administration Console, or Oracle WebLogic Scripting Tool (WLST). For information, see *Deploying Portlet Producer Applications* in *Oracle Fusion Middleware Administering Oracle WebCenter Portal*.

You can also deploy portlet producer applications to an Oracle WebLogic Server instance directly from a development environment by using JDeveloper, provided you have the required credentials to access the WebLogic server. For information, see *Deploying the Preconfigured Portlet Producers* in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

Migrating Customizations

After upgrading portlet producers, you must import their customizations if the customizations are not shared or accessible to the upgraded portlet producers. You import customizations from the EAR that you exported as described in [Performing Pre-Upgrade Tasks for Oracle WebCenter Portal](#).

To import customizations, use the `importPortletClientMetadata` WLST command. For information, see `importPortletClientMetadata` in *WebCenter WLST Command Reference*.

Restoring OmniPortlet and Web Clipping Configuration

After you saved your OmniPortlet and Web Clipping configuration (as described in [Saving OmniPortlet and Web Clipping Configuration](#)) and successfully upgraded Oracle WebCenter Portal instance, you must restore them.

1. Navigate to the `provider.xml` file in the upgraded domain at the following location:

Web Clipping: `ORACLE_HOME/servers/WC_Portlet/tmp/_WL_user/portalTools/randomly_generated_directory/war/WEB-INF/providers/webClipping/provider.xml`

OmniPortlet: `ORACLE_HOME/servers/WC_Portlet/tmp/_WL_user/portalTools/randomly_generated_directory/war/WEB-INF/providers/omniPortlet/provider.xml`

2. Paste the HTTP proxy entries for Web Clipping and omniPortlet from the `11g provider.xml` file. For example:

```
<proxyInfo class="oracle.portal.provider.v2.ProxyInformation">
  <httpProxyHost>proxy.example.com</httpProxyHost>
  <httpProxyPort>80</httpProxyPort>
  <dontProxyFor>*.example.com</dontProxyFor>
</proxyInfo>
```

3. Save the files.

Verify the Content Server Connection is Upgraded

After you have run the `upgradeWebCenterPortal` command successfully, verify that the Content Server connection has been upgraded by running the `listContentServerConnections` WLST command. For information, see `listContentServerConnections` in *Oracle Fusion Middleware WebCenter WLST Command Reference*.

If the output of the `listContentServerConnections` WLST command shows the following message, run `upgradeWebCenterPortal` again to upgrade the Content Server connection.

```
The underlying RIDC connection is missing.
```

Upgrading WebCenter Portal 11g Assets to 12c

To use WebCenter Portal 11g assets in your upgraded WebCenter Portal 12c instance, you must upgrade the assets. For example, you can upgrade your 11g skins, page templates, or page styles to use them in your upgraded 12c portals.

To upgrade an 11g WebCenter Portal asset to 12c:

1. In Oracle JDeveloper 11g, open the application that contains the asset you want to upgrade.
2. Copy the source code of the required asset. For example, copy the source code of a skin from its CSS file.
3. In Oracle JDeveloper 12c, create a WebCenter Portal asset application, specifying the required asset type. For example, if you want to upgrade a skin asset, create an asset application specifying `Skin` as the Asset Type.

For information, see *Creating a WebCenter Portal Asset Application* in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

4. Remove the source code from the newly created asset application, and paste the 11g source code of the asset, which you copied in step 2. For example, in your skin asset application, remove the source code and paste the source code that you copied from the 11g CSS file.
5. Save the asset application.
6. Deploy the asset application to WebCenter Portal 12c as a shared asset or to a specific portal. For information, see *Publishing WebCenter Portal Assets* in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

Updating Custom Coherence Configuration

After you upgrade Oracle WebCenter Portal from release 11g to release 12c, Content Presenter throws errors if your 11g environment used custom Coherence configuration. You need to re-create Coherence configuration to add the new schemes. You can optionally customize Coherence settings as required.

To update Coherence configuration:

1. Shut down the `WC_Spaces` managed server(s).

2. Remove the custom coherence configuration files carried on from release 11g from the following locations:

- `Middleware_Home/user_projects/applications/Domain_Name/custom.webcenter.spaces.fwk/APP-INF/classes`
- `Middleware_HOME/user_projects/applications/Domain_Name/custom.webcenter.spaces.fwk/APP-INF/lib`

If you want to back up the files, do not save them in the `lib` or `classes` folders. Save them in a different location.

3. Optionally, if you don't want to use the default coherence configuration and want to customize the settings, create a new `content-coherence-cache-config.xml` file. You need to place the file in the following location:

```
Middleware_HOME/user_projects/applications/Domain_Name/
custom.webcenter.spaces.fwk/APP-INF/classes
```

For information, see *Modifying Cache Settings for Content Presenter in Oracle Fusion Middleware Administering Oracle WebCenter Portal*.

4. Restart the `WC_Spaces` managed server(s).

Migrating Custom Task Flows

If your WebCenter Portal 11g application used custom task flows deployed through a custom shared library, then after upgrading to WebCenter Portal 12c you need to deploy the custom shared library.

To deploy a custom shared library containing custom task flows on WebCenter Portal 12c:

1. Install Oracle JDeveloper 12.2.1.3 with the WebCenter Portal extensions.
2. In Oracle JDeveloper, open the application containing the custom task flows that you want to migrate. This should migrate your application to 12c.
3. Deploy a new version of your shared library to the upgraded domain.
4. In Oracle JDeveloper 12.2.1.3, open the WebCenter Portal Server Extension application. This should migrate your application to 12c.
5. Deploy a new version of `extend.spaces.webapp` with the new version of shared library to the upgraded domain.
6. To verify that the migrated custom task flows are available in WebCenter Portal 12c:
 - a. Log on to WebCenter Portal.
 - b. In the portal browser, click the **Administration** tile.
 - c. Click on the **Shared Assets** tab.
 - d. Click **Resource Catalogs**.
 - e. In the Actions column, click **Edit** next to any custom resource catalog.
 - f. Click **Add**, and then select the **Add from Library** option.

Verify that your migrated custom tasks flows are listed.

For more information about deploying custom shared libraries, see [Deploying Extensions to the WebCenter Portal Shared Library \(extend.spaces.webapp.war\)](#) in

Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper.

Replacing Document Viewer Component

The Document Viewer component has been deprecated. After upgrade, if the page still shows Document Viewer, use the following steps to replace it with the new Content Viewer component.

1. Edit the Portal and click on the page containing the Document Viewer component.
2. Click on the Document Viewer component and then click the Actions button, select Parameters.
3. Note the value of parameter Resource ID. The value should be similar to "connection-name#dDocName:document-identifier"
4. Delete the Document Viewer component.
5. From the Resource Catalog, add the Content Viewer component. Edit the component and select the Parameters option, and enter the Document ID as "document-identifier" noted in step 3 above. Save and Publish the page.
6. The Document will now be displayed in the Content Viewer component.

Understanding the Impact of Upgrade on Deprecated Features

This topic describes the upgrade impact on 11g features that have been deprecated in release 12c.

- [Portal-Level Device Settings](#)
- [Hierarchical Portals](#)
- [Deprecated Portlets](#)

Portal-Level Device Settings

Device settings control how portals render on different kinds of devices including desktop browsers, smart phones, and tablets. In release 12c, device settings can be configured only at the WebCenter Portal application level, and not for individual portals. When you upgrade to release 12c, any portal-level customization done for device settings are lost. Only application-level device settings are applied to the upgraded WebCenter Portal instance.

Hierarchical Portals

Release 11g supported portal hierarchy consisting of a parent portal and its subportals, where by default subportals inherited security defined in the parent portal. When you upgrade WebCenter Portal to release 12c, subportals are moved as top-level portals. During upgrade, for each such upgraded portal, the following two attributes are added:

- `11g.upgraded.portal.parent.guid` - Specifies the ID of the parent portal.
- `11g.upgraded.portal.parent.security.id` - If present, specifies the portal from which security was inherited. If the value is null, it indicates that the subportal did not inherit the security from a parent portal and the subportal managed its own security.

Deprecated Portlets

In release 12c, Web Clipping portlets, Pagelet Producer, and the rich text portlets have been deprecated. If an upgraded portal page includes a deprecated portlet, the page displays the Remote Portlet Error. You must either remove the deprecated portlets from the page or replace them with their 12c equivalent.

In release 12c, content contribution and publishing components replace the functionality of rich text portlets.

Troubleshooting Oracle WebCenter Portal Upgrade Issues

This topic describes the solutions to the issues you might encounter while upgrading WebCenter Portal to the latest release.

- [Extra Entries Appear for the ACTIVITIES Schema](#)
- [Floating Toolbar Not Available for Custom Page Templates](#)
- [Running the Predeployment Tool does not Update 11g Portlet Producers](#)
- [Handling Errors While Upgrading Oracle WebCenter Portal](#)
- [Errors on Accessing Documents/Blogs/Wiki Pages in an Upgraded Portal](#)
- [Portal Upgrade Fails](#)

Extra Entries Appear for the `ACTIVITIES` Schema

Problem

In the upgraded WebCenter Portal 12c instance, extra entries are shown for the `ACTIVITIES` schema.

Solution

In release 12c, Activity Graph is deprecated. When you upgrade from an 11g release, the existing Activity Graph entries are not removed. However, these entries are not present in the `ACTIVITIES` schemas when you install a fresh instance of Oracle WebCenter Portal 12c.

Floating Toolbar Not Available for Custom Page Templates

In your upgraded WebCenter Portal instance, for upgraded portals that include pages supporting content contribution and use a custom page template developed in a prior release, the floating toolbar is not available. To enable the floating toolbar, add it to the custom page template. For information, see *Adding a Floating Toolbar to a Page Template* in *Oracle Fusion Middleware Developing WebCenter Portal Assets and Custom Components with Oracle JDeveloper*.

Running the Predeployment Tool does not Update 11g Portlet Producers

WebCenter Portal provides a predeployment tool that adds the required configuration to a portlet producer application's EAR file to expose the portlets over WSRP. You

cannot directly run the predeployment tool on portlet EARs from 11g versions. You need to migrate the portlet producer application in Oracle JDeveloper, regenerate the EAR, and then run the predeployment tool. For information about migrating portlet producers, see [Upgrading 11g Portlet Producers](#). For information about running the predeployment tool, see *Managing Portlet Producers* in *Oracle Fusion Middleware Administering Oracle WebCenter Portal*.

Handling Errors While Upgrading Oracle WebCenter Portal

While upgrading Oracle WebCenter Portal, you might encounter error messages. The following are some of the error messages displayed when you run the `upgradeWebCenterPortal` WLST Command.

Error Message 1

Upgrade ends with one of the following messages:

- Migration of Content Server from Folders_g to FrameworkFolders failed, Check MigrationDiagnostic.log for further details.
- An error occurred during migration, Check MigrationDiagnostic.log for further details.

Error Message 2

Upgrade ends with following message:

- Export of Folders_g data failed.
- Updating Content Server general configuration failed.
- Migration of <folder name> folder and content from Folders_g to the FrameworkFolders data structure failed.
- Migration of WebCenter Portal data to FrameworkFolders failed.
- Enabling <component name> server components failed.
- Disabling <component name> server components failed.
- Migration to FrameworkFolders failed.

Error Message 3

Upgrade ends with following message:

- WebCenter Content Server foldering service is not supported. Supported foldering service is FrameworkFolders version 2.1 and above.

Solution

To fix the issues, you need to:

1. Restore WebCenter Content Server.
2. Migrate from Folders_g to FrameworkFolders manually, as described in "Migrating Folders_g to FrameworkFolders" in *Oracle Fusion Middleware Administering Oracle WebCenter Portal*.
3. Run the following command:

```
upgradeWebCenterPortal (appName='webcenter', server='WC_Spaces',  
migrationDirectory='/tmp/upgrade',contentServerName='UCM_server1')
```

For more information about the command, see `upgradeWebCenterPortal` in *Oracle Fusion Middleware WebCenter WLST Command Reference*.

Errors on Accessing Documents/Blogs/Wiki Pages in an Upgraded Portal

After upgrade, on accessing the Documents, Blogs, or Wiki pages of an upgraded portal, if there are any errors, check the Content Server whether the upgrade has completed properly using the following steps:

1. Sign in to Content Server using the following URL format: `host:port/cs`
2. Navigate to Enterprise Libraries, and identify the portal's folder name.
3. Access the following URL format:

```
host:port/cs/idcplg?IdcService=FLD_INFO&path=/Enterprise Libraries/  
portal-folder-name&IsSoap=1
```
4. In the resulting output, search for `fApplicationGUID`. If it contains uppercase GUID, contact Oracle Support.

Portal Upgrade Fails

While upgrading Oracle WebCenter Portal if the upgrade of a portal fails, review the logs to identify the issue. In `UpgradeDetails.txt`, search for issue keywords like `NAMESPACE` or `DOCUMENT_DEF` to find the related exception stack for more details. This topic describes the scenarios for troubleshooting portal upgrade failure.

Error Message 1

In `UpgradeDetails.txt`, when you search for `DOCUMENT_REF` for the portal that failed to be upgraded, the following entry is displayed:

```
- java.sql.SQLException: ORA-12899: value too large for column  
"DEV_WEBCENTER"."WC_PORTAL_ENTITY"."DOCUMENT_REF"
```

Solution

One of the possible causes of portal upgrade failure can be that `space.xml` contains the binary or encoded content for the logo and icon attributes, and the value of these attributes exceeds the character limit. Modify the value for both the attributes by replacing the binary content with the MDS path for the logo and icon files. After you have successfully upgraded the portal, you can again change the portal logo and icon as required.

To fix the issue:

1. Export `space.xml` from MDS for the target portal using the `importMetadata WLST` command.

For example, the following command exports `spaces.xml` for a portal named `MyPortal` to the specified location:

```
exportMetadata(application='webcenter', server='WC_Spaces', toLocation='/  
scratch/export', docs='/oracle/webcenter/space/metadata/spaces/MyPortal/  
space.xml')
```

For information about the `exportMetadata WLST` command syntax, see `exportMetadata` in *Oracle Fusion Middleware WLST Command Reference for Infrastructure Components*.

2. Verify the value of the `Icon` and `Logo` attributes in the exported `space.xml` file. If the value of these attributes begins with `data:image`, edit the attributes with the following values and save the file.
 - `Icon`: `/oracle/webcenter/siteresources/scopedMD/shared/images/portalnew_icon.png`
 - `Logo`: `/oracle/webcenter/siteresources/scopedMD/shared/images/portalnew_logo.png`
3. Import the modified `space.xml` file using the `importMetadata` WLST command.
For example, the following command exports `spaces.xml` for `MyPortal` from the specified location:

```
importMetadata(application='webcenter',server='WC_Spaces',fromLocation='/scratch/export',docs='/oracle/webcenter/space/metadata/spaces/MyPortal/space.xml')
```


For information about the `importMetadata` WLST command syntax, see `importMetadata` in *Oracle Fusion Middleware WLST Command Reference for Infrastructure Components*.
4. Run the `upgradeWebCenterPortal` WLST command again.
5. Once your portal is upgraded successfully, log on to WebCenter Portal, navigate to your portal, and modify the logo and icon of the portal as per your requirement. For information, see *Administering Look and Feel Settings for a Portal in Oracle Fusion Middleware Building Portals with Oracle WebCenter Portal*.

Error Message 2

In `UpgradeDetails.txt`, when you search for `NAMESPACE` for the portal that failed to be upgraded, the following entry is displayed:

```
java.sql.SQLException: ORA-12899: value too large for column  
"DEV_WEBCENTER"."WC_PORTAL_ENTITY"."NAMESPACE"
```

Solution

One of the possible causes of this issue can be that the value of a portal resource's title attribute exceeds the limit of 200 characters. Modify the value not to exceed the character limit.

1. Review the `UpgradeDetails.txt` file to identify the portal resource that is causing the issue.

For example, suppose the title of a page definition file named `Page20PageDef.xml` exceeds 200 characters.

2. Export the portal resource using the `exportMetadata` WLST command.

The following code exports shows that the `Page20PageDef.xml` file is exported to the specified location:

```
exportMetadata(application='webcenter', server='WC_Spaces', toLocation='/scratch/export', docs='/pageDefs/oracle/webcenter/page/scopedMD/sfe492158_7b1a_421c_a242_37897a_2529e7/Page20PageDef.xml')
```

For information about the `exportMetadata` WLST command syntax, see `exportMetadata` in *Oracle Fusion Middleware WLST Command Reference for Infrastructure Components*.

3. Edit the value of exported resource's `page_title` and `page_info` attributes to be less than 200 characters.

4. Import the portal resource using the `importMetadata` WLST command. For example, the following command imports the updated `Page20PageDef.xml` from the specified location:

```
importMetadata(application='webcenter',server='WC_Spaces',fromLocation='/
scrat ch/export', docs='/pageDefs/oracle/webcenter/page/scopedMD/
sfe492158_7b1a_421ca242_37897a_2529e7/Page20PageDef.xml')
```

For information about the `importMetadata` WLST command syntax, see `importMetadata` in *Oracle Fusion Middleware WLST Command Reference for Infrastructure Components*.

5. Run the `upgradeWebCenterPortal` WLST command again.

7

Upgrading WebCenter Content: Imaging from 11g to 12c

As of release 12c (12.2.1.3), you can upgrade the WebCenter Content: Imaging (I/PM) component of the Oracle WebCenter Content. The valid starting points for upgrading I/PM are release 11.1.1.9.0 and 12.2.1.3.0. These instructions cover upgrading from 11.1.1.9.0.

To upgrade I/PM from 11g to 12c, complete the following tasks:

- [About the I/PM Upgrade Process from 11g to 12c](#)
Review the flowchart and the roadmap for an overview of the upgrade process for I/PM.
- [Installing the Product Distribution](#)
Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content 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 you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.
- [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.
- [Creating the Required 12c Schemas with the RCU](#)
When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.
- [About Reconfiguring the Domain](#)
Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).
- [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 Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.
- [Post Upgrade Task](#)
After a successful upgrade of I/PM from 11g to 12c, you must run the migration process to standardize the annotation file format.

About the I/PM Upgrade Process from 11g to 12c

Review the flowchart and the roadmap for an overview of the upgrade process for I/PM.

Figure 7-1 Upgrade Process Flowchart for I/PM from 11g to 12c Release

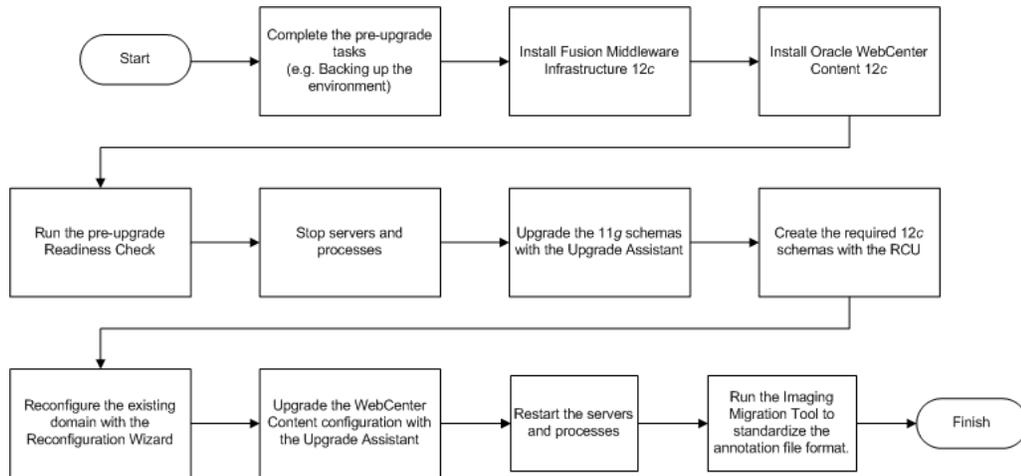


Table 7-1 provides a roadmap for tasks that you must perform to upgrade I/PM from 11g to 12c.

Table 7-1 Tasks for Upgrading I/PM from 11g to 12c Release

Task	Description
<p>Required 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 Pre-Upgrade Tasks for Oracle WebCenter Components .</p>
<p>Required Download and install the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content distributions.</p>	<p>The Infrastructure distribution packs 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>You must install the Oracle WebCenter Content distribution in the Oracle home that is created when you install the 12.2.1.4.0 Infrastructure. To install the product distributions, follow the procedure described in Installing the Product Distribution.</p>
<p>Optional Run a pre-upgrade readiness check.</p>	<p>Perform the domain-based readiness check on the existing domain to check for schemas and configuration. See Running a Pre-Upgrade Readiness Check.</p>

Table 7-1 (Cont.) Tasks for Upgrading I/PM from 11g to 12c Release

Task	Description
Required Shut down the existing environment (stop all Administration and Managed Servers).	<div style="border: 1px solid #ccc; padding: 10px; background-color: #fff9c4;">  WARNING: Failure to shut down your servers during an upgrade may lead to data corruption. </div> <p>See Stopping Servers and Processes.</p>
Required Upgrade the 11g schemas with the Upgrade Assistant.	Upgrade the schemas components that are available for upgrade with the Upgrade Assistant by following the procedure described in Upgrading Product Schemas .
Required Create the required schemas.	Apart from the existing 11g schemas, namely OCS or OCSSEARCH, you must also create the 12c schemas. See Creating the Required 12c Schemas with the RCU .
Required Reconfigure the existing domain.	When you run the Reconfiguration Wizard on your existing domain, it prepares your domain for upgrade by selecting and applying the reconfiguration templates. Reconfigure the domain by following the procedure described in About Reconfiguring the Domain .
Required Upgrade the WebCenter Content configuration.	Upgrade the WebCenter Content configurations contained in your 11g (release 11.1.1.6 and higher) domain with the Upgrade Assistant by following the procedure described in Upgrading Domain Components Using the Upgrade Assistant .
Required Restart the servers and processes.	See Starting Servers and Processes .

Installing the Product Distribution

Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content distributions on the target system and install them using Oracle Universal Installer.



Note:

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

Make sure that you download and install all the Oracle products that are part of your domain, for example Oracle HTTP Server. You must install the 12.2.1.4.0 binaries into a new Oracle home. It should be on the same host as the existing Oracle home.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (fmw_12.2.1.4.0_infrastructure_generic.jar)
 - Oracle WebCenter Content (fmw_12.2.1.4.0_wccontent_generic.jar)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`
5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

For more information about Oracle Fusion Middleware directory structure, see Understanding Directories for Installation and Configuration in *Oracle Fusion Middleware Planning an Installation of Oracle Fusion Middleware*.
9. The Installation Type screen only appears when you are installing the Infrastructure. On this screen, select **Fusion Middleware Infrastructure** and 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 are verified, select **View Successful Tasks**. To view log details, select **View Log**. If any prerequisite check fails, then an error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or the warning message and continue with the installation, click **Skip** (not recommended).

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

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

Click **Install** to begin the installation.

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

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

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

```
(UNIX) JDK_HOME/bin/java -jar fmw_12.2.1.4.0_wcontent_generic.jar
```

```
(Windows) JDK_HOME\bin\java -jar fmw_12.2.1.4.0_wcontent_generic.jar
```

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 7-2 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.

Table 7-2 (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"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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**.

 **Note:**

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** option and specify the **Schema Password**.

 **Note:**

The Upgrade Assistant automatically enables default credentials. If you are unable to connect, make sure that you manually enter the credentials for your schema before you continue.

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

4. On the Readiness Summary screen, review the summary of the readiness checks that will be 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 7-3 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /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, 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, 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, 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 not include all of these checks.

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

```
This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
```

Log file is located at: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/
oracle_common/upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain

Starting readiness check of components.

Oracle Platform Security Services

Starting readiness check of Oracle Platform Security Services.

Schema User Name: DEV3_OPSS

Database Type: Oracle Database

Database Connect String:

VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0.

Readiness checks will now be performed.

Starting schema test: TEST_DATABASE_VERSION Test that the
database server version number is supported for upgrade

INFO Database product version: Oracle Database 12c Enterprise
Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options

Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS

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 that the schema does not contain any
unexpected tables TEST_UNEXPECTED_TABLES

Completed schema test: Test that the schema does not contain any
unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema
does not contain any unexpected tables

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 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: SEQUENCE_TEST Test that the Oracle Platform
Security Services schema sequence and its properties are valid

Completed schema test: SEQUENCE_TEST --> Test that the Oracle
Platform Security Services schema sequence and its properties are
valid +++ PASS

Finished readiness check of Oracle Platform Security Services with status: SUCCESS.

Oracle Audit Services

Starting readiness check of Oracle Audit Services.

Schema User Name: DEV3_IAU

Database Type: Oracle Database

Database Connect String:

VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0. Readiness checks will now be performed.

Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade

INFO Database product version: Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

Completed schema test: TEST_DATABASE_VERSION --> Test that the database server version number is supported for upgrade +++ PASS

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_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_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 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_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_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 OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper datatypes

Completed datatype test for table OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper datatypes +++ PASS

Starting datatype test for table IAU_CUSTOM_01: TEST_COLUMN_DATATYPES_V2

```
--> Test that all table columns have the proper datatypes
  Completed datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
  Completed datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
  Completed datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting datatype test for table OWSM_PM_EJB:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
  Completed datatype test for table OWSM_PM_EJB:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting datatype test for table XMLPSEVER:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
  Completed datatype test for table XMLPSEVER:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting datatype test for table SOA_HCFP:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
  Completed datatype test for table SOA_HCFP:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
  Starting schema test: SEQUENCE_TEST Test that the audit schema
sequence and its properties are valid
  Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
  Starting schema test: SYNONYMS_TEST Test that the audit schema
required synonyms are present
  Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
  Finished readiness check of Oracle Audit Services with status:
FAILURE.
```

Common Infrastructure Services

```
Starting readiness check of Common Infrastructure Services.
  Schema User Name: DEV3_STB
  Database Type: Oracle Database
  Database Connect String:
  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
  Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test
```

that the schema contains all the required tables
Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does not contain any unexpected tables
Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test that the schema does not contain any unexpected tables
Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains all the required database views
Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test that the schema contains all the required database views
Starting schema test: TEST_MISSING_COLUMNS Test that tables and views are not missing any required columns
Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test that tables and views are not missing any required columns
Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade
Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database server version number is supported for upgrade +++ PASS
Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++ Test that the database server version number is supported for upgrade
Finished readiness check of Common Infrastructure Services with status: SUCCESS.

Oracle JRF

Starting readiness check of Oracle JRF.
Finished readiness check of Oracle JRF with status: SUCCESS.

System Components Infrastructure

Starting readiness check of System Components Infrastructure.
Starting config test: TEST_SOURCE_CONFIG Checking the source configuration.
INFO /oracle/work/middleware_1212/user_projects/domains/jrf_domain/opmn/topology.xml was not found. No upgrade is needed.
Completed config test: TEST_SOURCE_CONFIG --> Checking the source configuration. +++ PASS
Finished readiness check of System Components Infrastructure with status: ALREADY_UPGRADED.

Common Infrastructure Services

Starting readiness check of Common Infrastructure Services.
Starting config test: CIEConfigPlugin.readiness.test This tests the readiness of the domain from CIE side.
Completed config test: CIEConfigPlugin.readiness.test --> This tests the readiness of the domain from CIE side. +++ PASS
Finished readiness check of Common Infrastructure Services with status: SUCCESS.

Finished readiness check of components.

Stopping Servers and Processes

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

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

 **Note:**

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

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

Step 1: Stop the Managed Servers

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

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

When prompted, enter your user name and password.

Step 2: Stop System Components

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

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

You can stop system components in any order.

Step 3: Stop the Administration Server

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

To stop the Administration Server, use the `stopWebLogic` script:

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

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

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

Step 4: Stop Node Manager

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

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

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 (12.2.1.4.0).
- [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.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 7-4 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 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 7-4 (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"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Product Schemas Using the Upgrade Assistant

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

To upgrade the 11g schemas:

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 All Schemas screen, select the **All Schemas Used by a Domain** option.

This option allows 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.

Specify the path to the DOT9 domain in the **Domain Directory** field.

 **Note:**

Oracle recommends that you select **All Schemas Used by a Domain** for most upgrades to ensure all of the required schemas are included in the upgrade.

Click **Next**.

3. If you selected **All Schemas Used by a Domain**: On the Component List screen you will see two lists of schemas. The first list shows the components whose schemas are present in the domain and will be upgraded. The second list shows the list of missing schemas that may need to be created. If none of the required schemas are missing, you will only see the first list. Review both lists and click **Next**.

The Upgrade Assistant will attempt to create any missing schemas using the schema credentials used to create the existing domain schemas. You do not need to launch the Repository Creation Utility.

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 Create Schemas screen, indicate whether you want the Upgrade Assistant to create the missing schemas for the domain. You cannot perform an upgrade if any required schemas are missing.

The **Create missing schemas for the specified domain** option is enabled by default. The Upgrade Assistant will attempt to create the missing schemas for the domain using the database connection details and schema owner name provided.

If the same password is used for all schemas select **Use same passwords for all schemas**. Enter and confirm the password in the table. You only have to specify the password once.

If you do not want the Upgrade Assistant to create these schemas for you, deselect this option and click **Next**. You will have to run the Repository Creation Utility (RCU) to create the schemas.

6. The Create Schemas Default screen appears if you have chosen to create the schemas in this session of the Upgrade Assistant.

 **Note:**

The schemas are created with the default tablespace settings. If you want to customize the tablespace settings for your schemas, then create the required schemas with the RCU.

7. 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* 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.

8. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

9. The Create Schemas Progress screen displays the progress and the status of the schemas that are created. When complete, click **Upgrade**.
10. 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**.

11. If the schema upgrade is successful, a summary file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

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 12.2.1.4.0 . Note, however, that not all schema versions will be updated. The URM schema version will be displayed as 12.2.1.0.0 instead of 12.2.1.4.0.

- 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.

Creating the Required 12c Schemas with the RCU

When upgrading, you must create the required schemas. You can use the Repository Creation Utility (RCU) to create customized schemas or, optionally, you can use the Upgrade Assistant to create schemas using the default schema settings. This procedure describes how to create schemas using the RCU. Information about using the Upgrade Assistant to create schemas is covered in the upgrade procedures.

The following schemas must exist before you upgrade. If you are upgrading from 12c, and you are not sure which schemas you currently have, refer to the steps below to identify the existing schemas in your domain. You do not need to re-create these schemas if they already exist.

- **Service Table** schema (`prefix_STB`). This schema is required for domain-based upgrades. It stores basic schema configuration information (for example, schema prefixes and passwords) that can be accessed and used by other Oracle Fusion Middleware components during the domain creation. This schema is automatically created when you run the Repository Creation Utility (RCU), where you specify the existing schema owner prefix that you used for your other 12c schemas.

Note:

If the Service Table schema does not exist, you may encounter the error message `UPGAST-00328 : The schema version registry table does not exist on this database`. If that happens it is necessary to create the service table schema in order to run Upgrade Assistant

- **Oracle Platform Security Services (OPSS)** schema (`prefix_OPSS`). This schema is required if you are using an OID-based security store in 12c. This schema is automatically created when you run the Repository Creation Utility (RCU). The only supported LDAP-based OPSS security store is Oracle Internet Directory (OID). An LDAP-based policy store is typically used in production environments. You do not need to reassociate an OID-based security store before upgrade. While the Upgrade Assistant is running, you can select the OPSS schema. The Upgrade Assistant upgrades the OID-based security store automatically.

 **Note:**

The 12c OPSS database schema is required so that you can reference the 12c schema during the reconfiguration of the domain. Your domain continues to use the OID-based security store after the upgrade is complete.

- Audit Services (IAU)
 - WebCenter Content
1. (Optional) If you are upgrading from 12c, and you wish to confirm the schemas which are present in your existing domain, then connect to the database as a user with DBA privileges, and run the following code 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. Verify that a certified JDK already exists on your system by running `java -version` from the command line. For 12c (12.2.1.4.0), the certified JDK is 1.8.0_211 and later.

Ensure that the `JAVA_HOME` environment variable is set to the location of the certified JDK. For example:

- (UNIX) `setenv JAVA_HOME=/home/Oracle/Java/jdk1.8.0_211`
- (Windows) `set JAVA_HOME=C:\home\Oracle\Java\jdk1.8.0_211`

Add `$JAVA_HOME/bin` to `$PATH`.

3. Go to the `oracle_common/bin` directory:
 - (UNIX) `NEW_ORACLE_HOME/oracle_common/bin`
 - (Windows) `NEW_ORACLE_HOME\oracle_common\bin`
4. Start the RCU:
 - (UNIX) `./rcu`
 - (Windows) `rcu.bat`

5. On the Welcome screen, click **Next**.
6. On the Create Repository screen, select **Create Repository** and then select **System Load and Product Load**.

If you do not have DBA privileges, select **Prepare Scripts for System Load**. This will generate a SQL script containing all the same SQL statements and blocks that would have been called if the RCU were to execute the actions for the selected components. After the script is generated, a user with the necessary SYS or SYSDBA privileges can execute the script to complete the system load phase. Click **Next**.

- On the Database Connection Details screen, select the **Database Type** and enter the connection information for the database that hosts the 12c schemas. See the pertinent table below.

Table 7-5 Connection Credentials for Oracle Databases and Oracle Databases with Edition-Based Redefinition

Option	Description and Example
Host Name	Specify the name of the server where your database is running in the following format: <code>examplehost.exampledomain.com</code> For Oracle RAC databases, specify the VIP name or one of the node names in this field.
Port	Specify the port number for your database. The default port number for Oracle databases is 1521.
Service Name	Specify the service name for the database. Typically, the service name is the same as the global database name. For Oracle RAC databases, specify the service name of one of the nodes in this field. For example: <code>examplehost.exampledomain.com</code>
Username	Enter the user name for your database. The default user name is <code>SYS</code> .
Password	Enter the password for your database user.
Role	Select the database user's role from the drop-down list: Normal or SYSDBA

Table 7-6 Connection Credentials for MySQL Databases

Option	Description and Example
Host Name	Specify the host name, IP address, or complete server name in <code>host\server</code> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.
Password	Enter the password for your database user.

Table 7-7 Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Unicode Support	Select Yes or No from the drop-down list.
Server Name	Specify the host name, IP address, or complete server name in <code>host\server</code> format of the server where your database is running. MSSQL named instances: A named instance is identified by the network name of the computer and the instance name that you specify during installation. The client must specify both the server name and the instance name when connecting.

Table 7-7 (Cont.) Connection Credentials for Microsoft SQL Server Databases

Option	Description and Example
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with administrator privileges.
Password	Enter the password for your database user.

Table 7-8 Connection Credentials for IBM DB2 Databases

Option	Description and Example
Server Name	Specify the host name, IP address, or complete server name in <i>host\server</i> format of the server where your database is running.
Port	Specify the port number for your database.
Database Name	Specify the name of your database.
Username	Specify the name of a user with DB Owner privileges. The default user name for IBM DB2 databases is <i>db2inst1</i> .
Password	Enter the password for your database user.

If the prerequisite check is successful, click **OK** to continue to the next screen. If the check fails, review the details you entered and try again.

- On the Select Components screen, select **Select existing prefix** and select the prefix that was used to create the existing 11g schemas from the drop-down menu (for example, *DEV11G*). This prefix is used to logically group schemas together for use in this domain.

Select the following schemas:

- Audit Services
- Audit Services Append
- Audit Services Viewers
- Metadata Services (*_MDS*)
- User Messaging Service (*_UMS*)
- WebLogic Server (*_WLS*)

 **Note:**

The Common Infrastructure Services (*prefix_STB*) and Oracle Platform Security Services (*prefix_OPSS*) schemas are selected by default if they have not yet been created.

Make a note of the prefix and schema names for the components you are installing as you will need this information when you configure the installation. Click **Next**.

9. In the Checking Prerequisites dialog, verify that the prerequisites check is successful, then click **OK**.
10. On the Schema Passwords screen, specify the passwords for your schema owners.
Make a note of the passwords you enter on this screen as you will need this information while configuring your product installation.
11. On the Map Tablespaces screen, configure the required tablespace mapping for the schemas you want to create.
Click **Next**, then click **OK** in the confirmation dialog. When the progress dialog shows the tablespace creation is complete, click **OK**.
You see the **Encrypt Tablespace** check box only if you have enabled Transparent Data Encryption (TDE) in the database (Oracle or Oracle EBR) when you start the RCU. Select the **Encrypt Tablespace** check box on the Map Tablespaces screen to encrypt all new tablespaces that the RCU creates.
12. Verify the information on the Summary screen and click **Create** to begin schema creation.
This screen contains information about the log files that were created from this RCU operation. Click on the name of a particular log file to view the contents of that file.
13. Review the information on the Completion Summary screen to verify that the operation is completed successfully. Click **Close** to complete the schema creation.

About Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).



Note:

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

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.

- If the installation that you're upgrading does not use Oracle Access Management (OAM), then you must edit two files to prevent the Reconfiguration Wizard from attempting to update the nonexistent OAM Infrastructure schema, which causes the upgrade to fail.

Comment out the lines in your `$DOMAIN/init-info/domain-info.xml` that are similar to this example:

```
<!--extention-template-ref name="Oracle Identity Navigator"
  version="11.1.1.3.0"
  location="/u01/app/oracle/product/fmw/iam111130/common/
templates/applications/
yourcomany.oinav_11.1.1.3.0_template.jar"
  symbol=""/-->

<!--install-comp-ref name="oracle.idm.oinav"
version="11.1.1.3.0"

symbol="yourcompany.idm.oinav_11.1.1.3.0_iam111130_ORACLE_HO
ME"
  product_home="/u01/app/oracle/product/fmw/iam111130"/-->
```

and similarly comment out the lines in `$DOMAIN/config/config.xml` that are similar to this example:

```
<!--app-deployment>
  <name>oinav#11.1.1.3.0</name>
  <target>AdminServer</target>
  <module-type>ear</module-type>

  <source-path>/u01/app/oracle/product/fmw/iam111130/oinav/
modules/oinav.ear_11.1.1.3.0/oinav.ear</source-path>
  <deployment-order>500</deployment-order>
  <security-dd-model>DDOnly</security-dd-model>
  <staging-mode>nostage</staging-mode>
</app-deployment-->
```

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:**

When the domain reconfiguration process starts, you can't undo the changes that it makes. 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. See *Reconfiguring WebLogic Domains in Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

- [Backing Up the Domain](#)
- [Starting the Reconfiguration Wizard](#)
- [Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard](#)
Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

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.
(Windows) `copy C:\domains\mydomain to C:\domains\mydomain_backup.`
(UNIX) `cp mydomain /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.

Starting the Reconfiguration Wizard

Note:

Shut down the administration server and all collocated managed servers before starting the reconfiguration process. See [Stopping Servers and Processes](#) .

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) `NEW_ORACLE_HOME/oracle_common/common/bin`
 - (Windows) `NEW_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
```

Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard

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

Note:

Reconfiguration templates are automatically selected for every Oracle product that is installed, and are 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. If you see a template that is reported as missing, verify whether you have installed that respective Oracle product in your domain. For example, if Oracle HTTP Server is part of your existing domain, ensure that you install the 12c (12.2.1.4.0) Oracle HTTP Server product distribution.

Note:

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only. Use the pack/unpack utility to apply the changes to other cluster members in the domain.

To reconfigure the domain with the Reconfiguration Wizard:

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 (12.2.1.4.0) is 1.8.0_211 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 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:**

By default **Oracle's Driver (Thin) for Service connections; Versions: Any** is the selected driver. If you specified an instance name in your connection details — instead of the service name — you must select **Oracle's Driver (Thin) for pooled instance connections; Versions: Any** If you do not change the driver type, then the connection will fail.

 **Note:**

For any existing 12c (12.2.1.3.0) datasource, the reconfiguration will preserve the existing values. For new datasources where the schema was created for 12c (12.2.1.4.0) 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.

5. On the JDBC Component Schema screen, verify that the DBMS/Service and the Host name is correct for each component schema and click **Next**.
6. 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**.

7. On the Node Manager screen, select **Per Domain Default Location** as the Node Manager Type. Select **Create New Configuration**, specify the Node Manager Credentials, and 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.

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 (12.2.1.4.0).
- [Upgrading Domain Components Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.

- [Verifying the Domain-Specific-Component Configurations Upgrade](#)
To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:



Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 7-9 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.

Table 7-9 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none">• TRACE• NOTIFICATION• WARNING• ERROR• INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 7-9 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 (12.2.1.4.0), you must run the Upgrade Assistant to upgrade the domain *component* configurations to match the updated domain configuration.

To upgrade domain component configurations 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 WebLogic Components screen, select **WebLogic Component Configurations** and specify the 11g Domain directory.
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 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* 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.

6. 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.

7. 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**.

8. If the configuration upgrade is successful, summary files are generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

Verifying the Domain-Specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

To sign in to the Administration Console, go to: `http://administration_server_host:administration_server_port/console`

To sign in to Oracle Enterprise Manager Fusion Middleware Control Console, go to: `http://administration_server_host:administration_server_port/em`

 **Note:**

After upgrade, make sure you run the administration tools from the new 12c (12.2.1.4.0) Oracle home directory and not from the previous Oracle home directory.

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.

If you created the FMW user to run the Upgrade Assistant, ensure that you delete the account after verifying your upgrade was successful.

Starting Servers and Processes

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

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

Note:

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

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

Step 1: Start the Administration Server

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

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

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

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

Step 2: Start Node Manager

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

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

Step 3: Start the Managed Servers

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

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

When prompted, enter your user name and password.

 **Note:**

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

Step 4: Start System Components

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

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

You can start system components in any order.

Post Upgrade Task

After a successful upgrade of I/PM from 11g to 12c, you must run the migration process to standardize the annotation file format.

The Imaging Migration Tool is used to migrate Imaging documents to the latest 12c version. See:

- [Importing BPEL Configuration](#)
- [Importing Document Permissions](#)
- [Importing BPEL Configuration](#)

The BPEL connection configurations for Imaging 11g are not migrated to 12c and need to be separately created on Content Server. The BPEL import utility is used to import BPEL configurations (including payload mappings) into Content Server. You first need to export the Application definitions from 11g Imaging server and then import these into Content Server 12c. For more information on exporting application definitions, see the Imaging 11g documentation in the Oracle WebCenter Content 11g documentation library.
- [Importing Document Permissions](#)

For environments upgraded from older versions of Imaging, document permissions data is not present in Content Server. You can use the Import document permissions utility to import document permissions for 11.1.1.8 or earlier versions of Imaging. You first need to export the Application definitions from 11g Imaging server and then import these into Content Server 12c. For more information on exporting application definitions, see the Imaging 11g documentation in the Oracle WebCenter Content 11g documentation library.

Importing BPEL Configuration

The BPEL connection configurations for Imaging 11g are not migrated to 12c and need to be separately created on Content Server. The BPEL import utility is used to import BPEL configurations (including payload mappings) into Content Server. You first need to export the Application definitions from 11g Imaging server and then import these into Content Server 12c. For more information on exporting application definitions, see the

Imaging 11g documentation in the Oracle WebCenter Content 11g documentation library.

To import a BPEL Process Configuration:

1. Choose **Administration**, then **Imaging Migration Administration**, then **Import Process Configuration**.
2. Browse and select the application configuration file to import, and click **Upload**.

SOA connections should exist or created manually for the imported BPEL configurations to work. The SOA connection to be created on Content Server must have the format connection name without any spaces plus the connection configuration ID. The SOA connection name and configuration ID can be obtained from the exported application xml file. For more information, see *Managing Oracle Fusion Middleware BPEL Component for Content Server*.

Importing Document Permissions

For environments upgraded from older versions of Imaging, document permissions data is not present in Content Server. You can use the Import document permissions utility to import document permissions for 11.1.1.8 or earlier versions of Imaging. You first need to export the Application definitions from 11g Imaging server and then import these into Content Server 12c. For more information on exporting application definitions, see the Imaging 11g documentation in the Oracle WebCenter Content 11g documentation library.

To import document permissions:

1. Choose **Administration**, then **Imaging Migration Administration**, then **Import Document Permissions**.
2. Browse and select the application definition file to import, and click **Upload**.

8

Upgrading Oracle Universal Records Management from 11g to 12c

From 12c (12.2.1.3.0) onwards, you can upgrade Oracle Universal Records Management (URM) and Oracle Universal Content Management (UCM) from 11g to UCM Release 12c (12.2.1.4.0).

The valid starting point for upgrading URM is Release 11.1.1.9.0 and above.

You can follow the procedure described in this section to upgrade a domain containing URM or both URM and UCM.

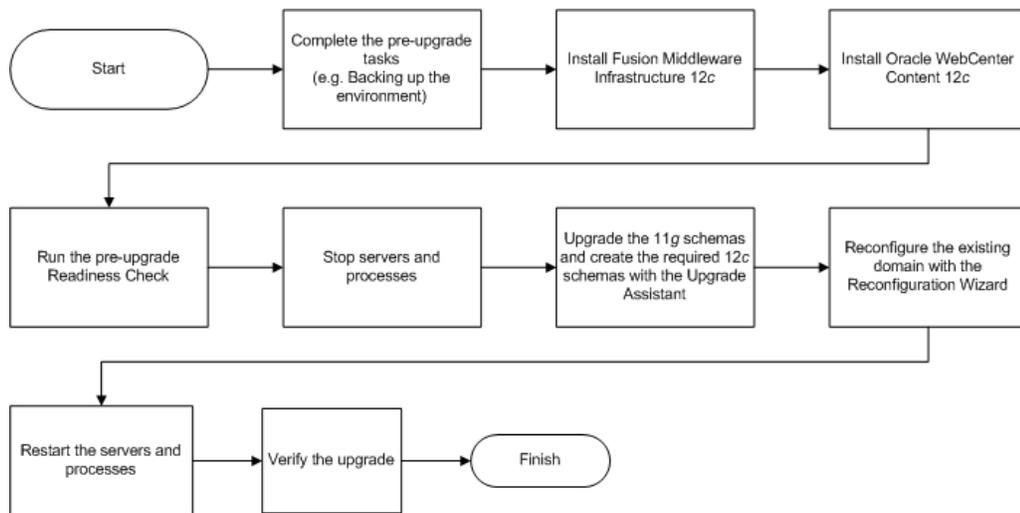
To upgrade URM and/or UCM from 11g to 12c, complete the following tasks:

- [About the URM and/or UCM Upgrade Process from 11g to 12c](#)
Review the flowchart and the roadmap for an overview of the upgrade process for a domain containing URM or both URM and UCM.
- [Installing the Product Distribution](#)
Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content 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 you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.
- [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.
- [About Reconfiguring the Domain](#)
Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).
- [Starting Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.
- [Verifying the Upgrade](#)
After you have upgraded a domain containing URM and/or from 11g to 12c, you should be able to access the 12c UCM server using the URLs depending upon the component that you upgraded.

About the URM and/or UCM Upgrade Process from 11g to 12c

Review the flowchart and the roadmap for an overview of the upgrade process for a domain containing URM or both URM and UCM.

Figure 8-1 Upgrade Process Flowchart for URM and/or UCM from 11g to 12c Release



[Table 8-1](#) provides a roadmap for tasks that you must perform to upgrade URM and/or UCM from 11g to 12c.

Table 8-1 Tasks for Upgrading URM and/or UCM from 11g to 12c Release

Task	Description
<p>Required</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 Pre-Upgrade Tasks for Oracle WebCenter Components.</p>
<p>Required</p> <p>Download and install the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content distributions.</p>	<p>The Infrastructure distribution packs 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>You must install the Oracle WebCenter Content distribution in the Oracle home that is created when you install the 12.2.1.4.0 Infrastructure. To install the product distributions, follow the procedure described in Installing the Product Distribution.</p>

Table 8-1 (Cont.) Tasks for Upgrading URM and/or UCM from 11g to 12c Release

Task	Description
<p>Optional Run a pre-upgrade readiness check.</p>	<p>Perform the domain-based readiness check on the existing domain to check for schemas and configuration. See Running a Pre-Upgrade Readiness Check.</p>
<p>Required Shut down the existing environment (stop all Administration and Managed Servers).</p>	<div style="border: 1px solid #ccc; padding: 10px; background-color: #fff9c4;"> <p> WARNING:</p> <p>Failure to shut down your servers during an upgrade may lead to data corruption.</p> </div> <p>See Stopping Servers and Processes.</p>
<p>Required Upgrade the 11g schemas and create the required 12c schemas with the Upgrade Assistant.</p>	<p>Upgrade and create the schema components with the Upgrade Assistant by following the procedure described in Upgrading Product Schemas.</p> <div style="border: 1px solid #ccc; padding: 10px; background-color: #e1f5fe;"> <p> Note:</p> <p>The schemas are created with the default tablespace settings. If you want to customize the tablespaces that your schemas use, create the schemas with the Repository Creation Utility (RCU).</p> </div>
<p>Required Reconfigure the existing domain.</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. Reconfigure the domain by following the procedure described in About Reconfiguring the Domain.</p>
<p>Required Restart the servers and processes.</p>	<p>See Starting Servers and Processes.</p> <div style="border: 1px solid #ccc; padding: 10px; background-color: #e1f5fe;"> <p> Note:</p> <p>You don't need to upgrade the domain configuration with the Upgrade Assistant. These changes are automatically handled when you start the servers and processes.</p> </div>

Table 8-1 (Cont.) Tasks for Upgrading URM and/or UCM from 11g to 12c Release

Task	Description
Required Verify the upgrade.	The upgrade from UCM is successful if you can access the UCM server through <code>http://host:16200/cs</code> . The upgrade from URM is successful if you can access the URM server through <code>http://host:16300/urm</code> . See Verifying the Upgrade .

Installing the Product Distribution

Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Content distributions on the target system and install them using Oracle Universal Installer.

Note:

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

Make sure that you download and install all the Oracle products that are part of your domain, for example Oracle HTTP Server. You must install the 12.2.1.4.0 binaries into a new Oracle home. It should be on the same host as the existing Oracle home.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.4.0_infrastructure_generic.jar`)
 - Oracle WebCenter Content (`fmw_12.2.1.4.0_wccontent_generic.jar`)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`
5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

For more information about Oracle Fusion Middleware directory structure, see Understanding Directories for Installation and Configuration in *Oracle Fusion Middleware Planning an Installation of Oracle Fusion Middleware*.
9. The Installation Type screen only appears when you are installing the Infrastructure. On this screen, select **Fusion Middleware Infrastructure** and 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 are verified, select **View Successful Tasks**. To view log details, select **View Log**. If any prerequisite check fails, then an error message appears at the bottom of the screen. Fix the error and click **Rerun** to try again. To ignore the error or the warning message and continue with the installation, click **Skip** (not recommended).
11. On the Installation Summary screen, verify the installation options that you selected.

If you want to save these options to a response file, click **Save Response File** and enter the response file location and name. The response file collects and stores all the information that you have entered, and enables you to perform a silent installation (from the command line) at a later time.
Click **Install** to begin the installation.
12. On the Installation Progress screen, when the progress bar displays 100%, click **Finish** to dismiss the installer, or click **Next** to see a summary.
13. The Installation Complete screen displays the Installation Location and the Feature Sets that are installed. Review this information and click **Finish** to close the installer.
14. After you have installed Oracle Fusion Middleware Infrastructure, enter the following command to start the installer for your product distribution and repeat the steps above to navigate through the installer screens:

```
(UNIX) JDK_HOME/bin/java -jar fmw_12.2.1.4.0_wccontent_generic.jar
```

```
(Windows) JDK_HOME\bin\java -jar fmw_12.2.1.4.0_wccontent_generic.jar
```

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 `vnconfig`. 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 Parameters](#)

Upgrade Assistant Parameters

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

Table 8-2 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.

Table 8-2 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 8-2 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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.
For example: `Middleware\user_projects\domains\base_domain`.
- Specify the location of the configuration file (`wcs_properties.json`).
For example, `Middleware\user_projects\domains\base_domain`.
- Specify schema credentials to connect to the selected schema: **Database Type**, **DBA User Name**, and **DBA Password**. Then click **Connect**.

 **Note:**

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** option and specify the **Schema Password**.

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

4. On the next screen, specify the administrator user name and password for the database containing the schema, and click **Next**.
5. On the Readiness Summary screen, review the summary of the readiness checks that will be 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**.

6. 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**.

7. 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 8-3 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /oracle_common/upgrade/ logs	The directory location of the generated readiness report.	No action required.

Table 8-3 (Cont.) Readiness Report Elements

Report Information	Description	Required Action
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, 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, 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, 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 not include all of these checks.

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

```
This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
Log file is located at: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/
oracle_common/upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain
```

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

```
Oracle Platform Security Services
Starting readiness check of Oracle Platform Security Services.
Schema User Name: DEV3_OPSS
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0.
Readiness checks will now be performed.
```

```
Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
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 that the schema does not contain any
unexpected tables TEST_UNEXPECTED_TABLES
Completed schema test: Test that the schema does not contain any
unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema does
not contain any unexpected tables
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 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: SEQUENCE_TEST Test that the Oracle Platform
Security Services schema sequence and its properties are valid
Completed schema test: SEQUENCE_TEST --> Test that the Oracle Platform
Security Services schema sequence and its properties are valid +++ PASS
Finished readiness check of Oracle Platform Security Services with
status: SUCCESS.
```

Oracle Audit Services

```
Starting readiness check of Oracle Audit Services.
Schema User Name: DEV3_IAU
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0. Readiness
checks will now be performed.
Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
```

```
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_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_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 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_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_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 OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table WS_POLICYATTACHMENT:
```

```

TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper
datatypes +++ PASS
    Starting datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
    Completed datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
    Starting schema test: SEQUENCE_TEST Test that the audit schema sequence
and its properties are valid
    Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
    Starting schema test: SYNONYMS_TEST Test that the audit schema required
synonyms are present
    Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
    Finished readiness check of Oracle Audit Services with status: FAILURE.

```

Common Infrastructure Services

```

Starting readiness check of Common Infrastructure Services.
    Schema User Name: DEV3_STB
    Database Type: Oracle Database
    Database Connect String:
    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
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test that
the schema contains all the required tables
    Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does
not contain any unexpected tables
    Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test
that the schema does not contain any unexpected tables
    Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains
all the required database views
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test that
the schema contains all the required database views
    Starting schema test: TEST_MISSING_COLUMNS Test that tables and views
are not missing any required columns
    Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test that
tables and views are not missing any required columns
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options

```

```
Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS
Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++
Test that the database server version number is supported for upgrade
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Oracle JRF

```
Starting readiness check of Oracle JRF.
Finished readiness check of Oracle JRF with status: SUCCESS.
```

System Components Infrastructure

```
Starting readiness check of System Components Infrastructure.
Starting config test: TEST_SOURCE_CONFIG Checking the source
configuration.
INFO /oracle/work/middleware_1212/user_projects/domains/
jrf_domain/opmn/topology.xml was not found. No upgrade is needed.
Completed config test: TEST_SOURCE_CONFIG --> Checking the source
configuration. +++ PASS
Finished readiness check of System Components Infrastructure with
status: ALREADY_UPGRADED.
```

Common Infrastructure Services

```
Starting readiness check of Common Infrastructure Services.
Starting config test: CIEConfigPlugin.readiness.test This tests
the readiness of the domain from CIE side.
Completed config test: CIEConfigPlugin.readiness.test --> This
tests the readiness of the domain from CIE side. +++ PASS
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Finished readiness check of components.

Stopping Servers and Processes

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

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

 **Note:**

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

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

Step 1: Stop the Managed Servers

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

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

When prompted, enter your user name and password.

Step 2: Stop System Components

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

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

You can stop system components in any order.

Step 3: Stop the Administration Server

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

To stop the Administration Server, use the `stopWebLogic` script:

- (UNIX) `EXISTING_DOMAIN_HOME/bin/stopWebLogic.sh`
- (Windows) `EXISTING_DOMAIN_HOME\bin\stopWebLogic.cmd`

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

Step 4: Stop Node Manager

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

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

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 (12.2.1.4.0).
- [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.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 8-4 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.
-logLevel <i>attribute</i>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 8-4 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
-help	Optional	Displays all of the command-line options.

Upgrading Product Schemas Using the Upgrade Assistant

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

To upgrade the 11g schemas:

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 All Schemas screen, select the **All Schemas Used by a Domain** option.

This option allows 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.

Specify the path to the DOT9 domain in the **Domain Directory** field.

 **Note:**

Oracle recommends that you select **All Schemas Used by a Domain** for most upgrades to ensure all of the required schemas are included in the upgrade.

Click **Next**.

3. If you selected **All Schemas Used by a Domain**: On the Component List screen you will see two lists of schemas. The first list shows the components whose schemas are present in the domain and will be upgraded. The second list shows the list of missing schemas that may need to be created. If none of the required schemas are missing, you will only see the first list. Review both lists and click **Next**.

The Upgrade Assistant will attempt to create any missing schemas using the schema credentials used to create the existing domain schemas. You do not need to launch the Repository Creation Utility.

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 Create Schemas screen, indicate whether you want the Upgrade Assistant to create the missing schemas for the domain. You cannot perform an upgrade if any required schemas are missing.

The **Create missing schemas for the specified domain** option is enabled by default. The Upgrade Assistant will attempt to create the missing schemas for the domain using the database connection details and schema owner name provided.

If the same password is used for all schemas select **Use same passwords for all schemas**. Enter and confirm the password in the table. You only have to specify the password once.

If you do not want the Upgrade Assistant to create these schemas for you, deselect this option and click **Next**. You will have to run the Repository Creation Utility (RCU) to create the schemas.

6. The Create Schemas Default screen appears if you have chosen to create the schemas in this session of the Upgrade Assistant.

 **Note:**

The schemas are created with the default tablespace settings. If you want to customize the tablespace settings for your schemas, then create the required schemas with the RCU.

7. 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* 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.

8. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next** .

9. The Create Schemas Progress screen displays the progress and the status of the schemas that are created. When complete, click **Upgrade**.
10. 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**.

11. If the schema upgrade is successful, a summary file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

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 `12.2.1.4.0`. Note, however, that not all schema versions will be updated. The URM schema version will be displayed as `12.2.1.0.0` instead of `12.2.1.4.0`.
- 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.

About Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).

 **Note:**

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

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.

- If the installation that you're upgrading does not use Oracle Access Management (OAM), then you must edit two files to prevent the Reconfiguration Wizard from attempting to update the nonexistent OAM Infrastructure schema, which causes the upgrade to fail.

Comment out the lines in your `$DOMAIN/init-info/domain-info.xml` that are similar to this example:

```
<!--extention-template-ref name="Oracle Identity Navigator"
  version="11.1.1.3.0"
  location="/u01/app/oracle/product/fmw/iam111130/common/
templates/applications/yourcomany.oinav_11.1.1.3.0_template.jar"
  symbol=""/-->

<!--install-comp-ref name="oracle.idm.oinav" version="11.1.1.3.0"
  symbol="yourcompany.idm.oinav_11.1.1.3.0_iam111130_ORACLE_HOME"
  product_home="/u01/app/oracle/product/fmw/iam111130"/-->
```

and similarly comment out the lines in `$DOMAIN/config/config.xml` that are similar to this example:

```
<!--app-deployment>
  <name>oinav#11.1.1.3.0</name>
  <target>AdminServer</target>
  <module-type>ear</module-type>

  <source-path>/u01/app/oracle/product/fmw/iam111130/oinav/
modules/oinav.ear_11.1.1.3.0/oinav.ear</source-path>
  <deployment-order>500</deployment-order>
  <security-dd-model>DDOnly</security-dd-model>
  <staging-mode>nostage</staging-mode>
</app-deployment-->
```

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:**

When the domain reconfiguration process starts, you can't undo the changes that it makes. 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. See *Reconfiguring WebLogic Domains in Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

- [Backing Up the Domain](#)
- [Starting the Reconfiguration Wizard](#)
- [Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard](#)
Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

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.
(Windows) `copy C:\domains\mydomain to C:\domains\mydomain_backup.`
(UNIX) `cp mydomain /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.

Starting the Reconfiguration Wizard

 **Note:**

Shut down the administration server and all collocated managed servers before starting the reconfiguration process. See [Stopping Servers and Processes](#) .

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) `NEW_ORACLE_HOME/oracle_common/common/bin`
 - (Windows) `NEW_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
```

Reconfiguring the WebCenter Content Domain with the Reconfiguration Wizard

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

Note:

Reconfiguration templates are automatically selected for every Oracle product that is installed, and are 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. If you see a template that is reported as missing, verify whether you have installed that respective Oracle product in your domain. For example, if Oracle HTTP Server is part of your existing domain, ensure that you install the 12c (12.2.1.4.0) Oracle HTTP Server product distribution.

Note:

- If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only. Use the pack/unpack utility to apply the changes to other cluster members in the domain.
- When you upgrade a scaled out domain (with URM servers) to the 12c release, URM server groups are not auto populated with the URM server on the second node. The URM server on the second node is not added to the URM server group. As user-expandable server groups are visible on the managed server panel, users will see that the server on the first node is a member of the group, but not the server on the second node. However, this second server will still be a member of the same cluster. So, the same applications and services are deployed on this server when it starts as a cluster member.

To reconfigure the domain with the Reconfiguration Wizard:

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. The Reconfig Summary screen displays the list of templates that are reconfigured by the Reconfiguration Wizard. Click **Next**.
 4. 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 (12.2.1.4.0) is 1.8.0_211 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.

5. (Available for domains containing only URM or both URM and UCM) On the Datasources screen, specify the service name, host name, port number and user name for URMDs datasource, and click **Next**.
6. (Available for domains containing only URM or both URM and UCM) On the JDBC DS Test screen, click **Test Selected Connections** to test the connection for each schema.
7. 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.

 **Note:**

If you are upgrading from 11g, and your database has `_OPSS` or `_IAU` 11g, and URM database schemas, you must manually enter database connection details for those schemas. These schemas were not required in 11g and had to be created manually. Users could assign any name to these schemas, therefore the Reconfiguration Wizard does not recognize them. When providing connection information for `_IAU`, use the `IAU_APPEND` user information.

8. On the JDBC Component Schema screen, verify that the DBMS/Service and the Host name is correct for each component schema and click **Next**.
9. 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**.

10. On the Node Manager screen, select **Per Domain Default Location** as the Node Manager Type. Select **Create New Configuration**, specify the Node Manager Credentials, and click **Next**.
11. 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**.

12. 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.

13. 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**.

14. 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.

Starting Servers and Processes

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

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

Note:

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

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

Step 1: Start the Administration Server

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

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

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

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

Step 2: Start Node Manager

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

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

Step 3: Start the Managed Servers

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

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

When prompted, enter your user name and password.

 **Note:**

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

Step 4: Start System Components

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

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

You can start system components in any order.

Verifying the Upgrade

After you have upgraded a domain containing URM and/or from 11g to 12c, you should be able to access the 12c UCM server using the URLs depending upon the component that you upgraded.

If you have upgraded UCM from 11g to 12c, you should be able to access the 12c UCM server through the following URL: `http://host:16200/cs`.

If you have upgraded URM from 11g to 12c, you should be able to access the 12c URM server through the following URL: `http://host:16300/urm`.

 **Note:**

In 12c, URM is re-established as UCM. However, the 12.2.1.4.0 UCM server will continue to use the `URMSERVER` database schema and `/urm` as the `HttpRelativeWebRoot`.

Part II

Upgrading Oracle WebCenter from a Previous 12c Release

Part II contains the following chapters:

- [Upgrading WebCenter Sites from a Previous 12c Release](#)
Use this procedure to upgrade WebCenter Sites from 12c (12.2.1.2 or 12.2.1.3) to 12c (12.2.1.4).
- [Upgrading Oracle WebCenter Content](#)
- [Upgrading WebCenter Portal from a Previous 12c Release](#)
Use this procedure to upgrade WebCenter Portal from 12c (12.2.1.2 or 12.2.1.3) to 12c (12.2.1.4).

9

Upgrading WebCenter Sites from a Previous 12c Release

Use this procedure to upgrade WebCenter Sites from 12c (12.2.1.2 or 12.2.1.3) to 12c (12.2.1.4).

Note:

- Any changes that you have made to the pre-upgrade environment are overwritten during the upgrade process. Oracle recommends that you save your customized files to a shared library location so that you can continue to use them after the upgrade.
- If the existing Sites environment is configured with NIO-based Shared File System to a database, revert it back to disk storage before starting the upgrade process.

For information about the differences between in-place and out-of-place upgrades, see *About In-Place versus Out-of-Place Upgrades* in *Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*.

Note:

There are two approaches that you can consider while upgrading depending on your requirement:

1. You can upgrade the delivery environment and clone it after the upgrade to create development and management environments.

If you consider this approach, synchronization is required. You must publish the contents from your development and management environments in to the delivery environment before the upgrade. You can then clone your upgraded delivery environment to create development and management environments.

2. Alternatively, you can upgrade each environment individually.

If you consider this approach, synchronization is not required.

Follow the steps in the following topics to perform the upgrade:

- [About the WebCenter Sites Upgrade Process from a Previous 12c Release](#)
Review the flowchart and roadmap for an overview of the upgrade process for WebCenter Sites.

- [Installing the Product Distribution](#)
Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions on the target system and install them using Oracle Universal Installer.
- [If you have installed Sites with Insights...](#)
Oracle WebCenter Sites Insights is deprecated since 12.2.1.1. As a result, the reconfiguration template is not available during upgrade. You must perform the steps mentioned in this topic if your existing deployment contains Sites Insights.
- [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 you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.
- [Before Running the Upgrade Assistant](#)
Before running the Upgrade Assistant to upgrade your 12.2.1.x domain, complete the tasks listed in this topic.
- [Checklist Before Performing Schema Upgrade](#)
- [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.
- [About Reconfiguring the Domain](#)
Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).
- [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 Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.
- [Post-Upgrade Validation Tasks](#)
Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes.
- [Post-Upgrade Tasks](#)
The post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in this topic.
- [Migrating Custom Java Libraries or Static Web Resources](#)
Perform this optional step only if custom Java libraries or static web resources were added to the web application in your pre-upgrade environment and you want to continue to use them in the upgraded environment.

About the WebCenter Sites Upgrade Process from a Previous 12c Release

Review the flowchart and roadmap for an overview of the upgrade process for WebCenter Sites.

Figure 9-1 Upgrade Process Flowchart for WebCenter Sites from a Previous 12c Release

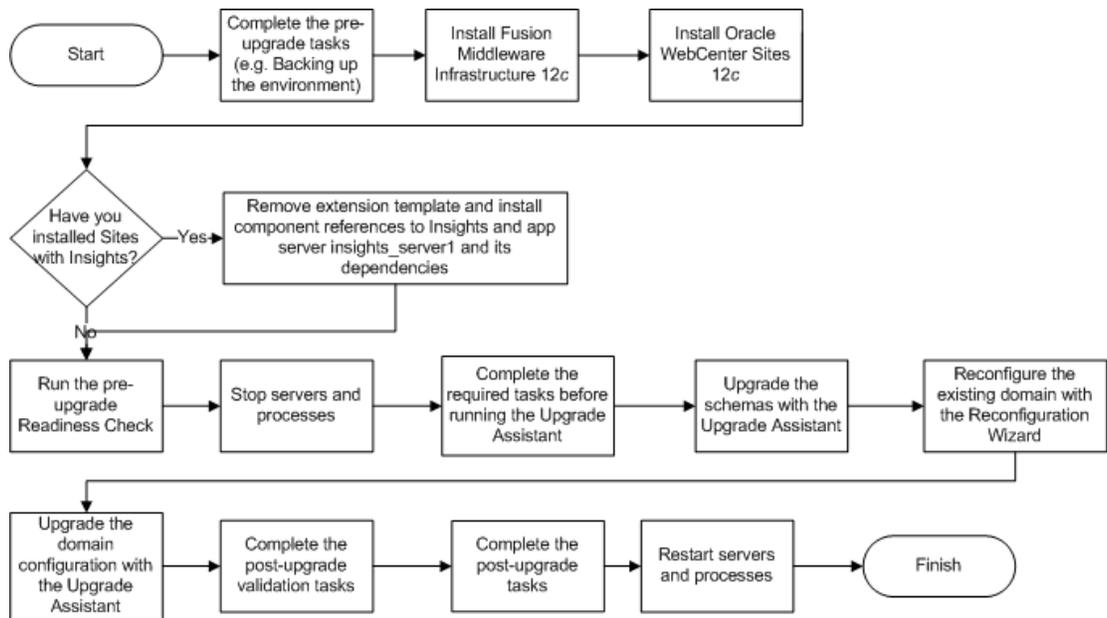


Table 9-1 provides a roadmap for tasks that you must perform to upgrade WebCenter Sites from a previous 12c release.

Table 9-1 Tasks for Upgrading WebCenter Sites from a Previous 12c Release

Task	Description
<p>Required 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 Pre-Upgrade Tasks for Oracle WebCenter Components.</p>
<p>! Important:</p> <p>You must back up the WebLogic domain, Sites configuration directory, Sites shared directory, and Sites schema before starting the upgrade process.</p>	
<p>Required Download and install the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions.</p>	<p>The Infrastructure distribution packs 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>You must install the Oracle WebCenter Sites distribution in the Oracle home that is created when you install the 12.2.1.4.0 Infrastructure. To install the product distributions, follow the procedure described in Installing the Product Distribution.</p>
<p>Required if you have installed WebCenter Sites with Insights Remove the extension template and install component references to Insights and app server insights_server1 and its dependencies.</p>	<p>Oracle WebCenter Sites Insights is deprecated since 12.2.1.1. As a result, the reconfiguration template is not available during upgrade. You must perform the steps mentioned in the following topic if your existing deployment contains Sites Insights: If you have installed Sites with Insights...</p>
<p>Optional Run a pre-upgrade readiness check.</p>	<p>See Running a Pre-Upgrade Readiness Check.</p>
<p>Required Shut down the existing environment (stop all Administration and Managed Servers).</p>	<p>! WARNING:</p> <p>Failure to shut down your servers during an upgrade may lead to data corruption.</p> <p style="text-align: center;">See Stopping Servers and Processes.</p>

Table 9-1 (Cont.) Tasks for Upgrading WebCenter Sites from a Previous 12c Release

Task	Description
Required Complete the required tasks before running the Upgrade Assistant.	The pre-upgrade tasks are a set of tasks that you must complete before starting the upgrade process with the Upgrade Assistant. These tasks are listed in Before Running the Upgrade Assistant .
Required Upgrade the product schemas with the Upgrade Assistant.	Upgrade the schemas components that are available for upgrade with the Upgrade Assistant by following the procedure described in Upgrading Product Schemas .
Required Reconfigure the existing 12c domain.	When you run the Reconfiguration Wizard on your existing domain, it prepares your domain for upgrade by selecting and applying the reconfiguration templates. Reconfigure the domain by following the procedure described in About Reconfiguring the Domain .
Required Upgrade the domain configuration.	Upgrade all the configurations contained in your 12.2.1.0 domain with the Upgrade Assistant by following the procedure described in Upgrading Domain Component Configurations .
Required Complete the post-upgrade validation tasks.	Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes. To use the validation script, see Post-Upgrade Validation Tasks .
Required Complete the other post-upgrade tasks.	Other post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in Post-Upgrade Tasks .
Required Restart the servers and processes.	See Starting Servers and Processes .

Installing the Product Distribution

Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Sites distributions on the target system and install them using Oracle Universal Installer.



Note:

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

Ensure that you download and install all the Oracle products that are part of your domain, for example Oracle HTTP Server. You must install the 12.2.1.4.0 binaries into a new Oracle home. It should be on the same host as the existing Oracle home.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (fmw_12.2.1.4.0_infrastructure_generic.jar)
 - Oracle WebCenter Sites (fmw_12.2.1.4.0_wcsites_generic.jar)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`
5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

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

9. On the Installation Type screen, select the following:
 - For Infrastructure, select **Fusion Middleware Infrastructure**
 - For Oracle WebCenter Sites, select **WebCenter Sites**

 **Note:**

If you have installed Oracle WebCenter Sites with Examples on the source environment, ensure that you select **WebCenter Sites with Examples** on the target as well.

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

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

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

Click **Install** to begin the installation.

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

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

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

```
(UNIX) JDK_HOME/bin/java -jar fmw_12.2.1.4.0_wcsites_generic.jar
```

```
(Windows) JDK_HOME\bin\java -jar fmw_12.2.1.4.0_wcsites_generic.jar
```

If you have installed Sites with Insights...

Oracle WebCenter Sites Insights is deprecated since 12.2.1.1. As a result, the reconfiguration template is not available during upgrade. You must perform the steps mentioned in this topic if your existing deployment contains Sites Insights.

 **Note:**

Perform this procedure only if you are upgrading from 12.2.1.0 and you have installed Oracle WebCenter Sites with Insights.

Complete the following steps before running the pre-upgrade Readiness Check or before running the Reconfiguration Wizard:

1. Sign in to the host where you have installed Insights. Take a complete backup of your existing domain.
2. Remove extension template reference to Insights from the `domain-info.xml` file.

- a. Change to the following directory:
(UNIX) `EXISTING_ORACLE_HOME/user_projects/domains/
DOMAIN_NAME/init-info/domain-info.xml`
(Windows)
`EXISTING_ORACLE_HOME\user_projects\domains\DOMAIN_NAME\in
it-info\domain-info.xml`
 - b. Open the domain-info.xml file for editing.
 - c. Remove the <extention-template-ref> with name "Oracle WebCenter Sites -
Insights".
 - d. Save and close the file.
3. Remove the install component reference to Insights from the domain-info.xml file.
 - a. Change to the following directory:
(UNIX) `EXISTING_ORACLE_HOME/user_projects/domains/
DOMAIN_NAME/init-info/domain-info.xml`
(Windows)
`EXISTING_ORACLE_HOME\user_projects\domains\DOMAIN_NAME\in
it-info\domain-info.xml`
 - b. Open the domain-info.xml file for editing.
 - c. Remove the <install-comp-ref> with name="oracle.wcsites.insights".
 - d. Save and close the file.
 4. Remove app server insights_server1 and its dependencies from the config.xml file.
 - a. Change to the following directory:
(UNIX) `EXISTING_ORACLE_HOME/user_projects/domains/
DOMAIN_NAME/config/config.xml`
(Windows)
`EXISTING_ORACLE_HOME\user_projects\domains\DOMAIN_NAME\co
nfig\config.xml`
 - b. Open the config.xml file for editing.
 - c. Remove the app server insights_server1 and its dependencies.
 - d. Save and close the file.

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 9-2 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 Upgrade Assistant in <i>silent mode</i> (without displaying Upgrade Assistant screens).

Table 9-2 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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.
<code>-logLevel attribute</code>	Optional	<p>Sets the logging level, specifying one of the following attributes:</p> <ul style="list-style-type: none"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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**.

 **Note:**

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** option and specify the **Schema Password**.

 **Note:**

The Upgrade Assistant automatically enables default credentials. If you are unable to connect, make sure that you manually enter the credentials for your schema before you continue.

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

4. On the Readiness Summary screen, review the summary of the readiness checks that will be 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 9-3 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /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, 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, 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, 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 not include all of these checks.

Upgrade readiness check completed with one or more errors.

This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
Log file is located at: /oracle/work/middleware_latest/oracle_common/upgrade/
logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain

Starting readiness check of components.

Oracle Platform Security Services

Starting readiness check of Oracle Platform Security Services.

Schema User Name: DEV3_OPSS

Database Type: Oracle Database

Database Connect String:

VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0. Readiness checks will now be performed.

Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade

INFO Database product version: Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

Completed schema test: TEST_DATABASE_VERSION --> Test that the database server version number is supported for upgrade +++ PASS

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 that the schema does not contain any unexpected tables TEST_UNEXPECTED_TABLES

Completed schema test: Test that the schema does not contain any unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema does not contain any unexpected tables

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 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: SEQUENCE_TEST Test that the Oracle Platform

Security Services schema sequence and its properties are valid
Completed schema test: SEQUENCE_TEST --> Test that the Oracle Platform Security Services schema sequence and its properties are valid +++ PASS
Finished readiness check of Oracle Platform Security Services with status: SUCCESS.

Oracle Audit Services

Starting readiness check of Oracle Audit Services.
Schema User Name: DEV3_IAU
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0.
Readiness checks will now be performed.
Starting schema test: TEST_DATABASE_VERSION Test that the database server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database server version number is supported for upgrade +++ PASS
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_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_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 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_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_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 OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2
--> Test that all table columns have the proper datatypes
Completed datatype test for table OIDCOMPONENT: TEST_COLUMN_DATATYPES_V2
--> Test that all table columns have the proper datatypes +++ PASS
Starting datatype test for table IAU_CUSTOM_01: TEST_COLUMN_DATATYPES_V2
--> Test that all table columns have the proper datatypes
Completed datatype test for table IAU_CUSTOM_01: TEST_COLUMN_DATATYPES_V2
--> Test that all table columns have the proper datatypes +++ PASS
Starting datatype test for table IAU_BASE: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
Completed datatype test for table IAU_BASE: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper
datatypes
Completed datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper
datatypes +++ PASS
Starting datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
Completed datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
Starting datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
Completed datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
Starting datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
Completed datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
Starting schema test: SEQUENCE_TEST Test that the audit schema sequence
and its properties are valid
Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
Starting schema test: SYNONYMS_TEST Test that the audit schema required
synonyms are present
Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
Finished readiness check of Oracle Audit Services with status: FAILURE.

```

Common Infrastructure Services

```

Starting readiness check of Common Infrastructure Services.
Schema User Name: DEV3_STB
Database Type: Oracle Database
Database Connect String:
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
Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test that
the schema contains all the required tables
Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does
not contain any unexpected tables
Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test
that the schema does not contain any unexpected tables

```

```
Starting schema test: TEST_REQUIRED_VIEWS Test that the schema
contains all the required database views
Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test
that the schema contains all the required database views
Starting schema test: TEST_MISSING_COLUMNS Test that tables and
views are not missing any required columns
Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test
that tables and views are not missing any required columns
Starting schema test: TEST_DATABASE_VERSION Test that the
database server version number is supported for upgrade
Starting schema test: TEST_DATABASE_VERSION Test that the
database server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise
Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options
Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS
Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++
Test that the database server version number is supported for upgrade
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Oracle JRF

```
Starting readiness check of Oracle JRF.
Finished readiness check of Oracle JRF with status: SUCCESS.
```

System Components Infrastructure

```
Starting readiness check of System Components Infrastructure.
Starting config test: TEST_SOURCE_CONFIG Checking the source
configuration.
INFO /oracle/work/middleware_1212/user_projects/domains/
jrf_domain/opmn/topology.xml was not found. No upgrade is needed.
Completed config test: TEST_SOURCE_CONFIG --> Checking the source
configuration. +++ PASS
Finished readiness check of System Components Infrastructure with
status: ALREADY_UPGRADED.
```

Common Infrastructure Services

```
Starting readiness check of Common Infrastructure Services.
Starting config test: CIEConfigPlugin.readiness.test This tests
the readiness of the domain from CIE side.
Completed config test: CIEConfigPlugin.readiness.test --> This
tests the readiness of the domain from CIE side. +++ PASS
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

```
Finished readiness check of components.
```

Stopping Servers and Processes

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

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

Note:

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

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

Step 1: Stop 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 2: 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 3: 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 4: Stop Node Manager

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

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

Before Running the Upgrade Assistant

Before running the Upgrade Assistant to upgrade your 12.2.1.x domain, complete the tasks listed in this topic.

IBM DB2 Database Users Only:

There is no support for DB2 database in 12.2.1.4.0 WCSites release. Customers are advised to use one of the certified databases (Ex: MS-SQLServer or Oracle) with WebCenter Sites. Customers using IBM DB2 will have to move WebCenter Sites schema from DB2 to one of the certified databases using the tools that the latter may provide. This is a prerequisite before upgrading the product schemas.

Checklist Before Performing Schema Upgrade

The upgrade scripts add different tables for various releases. Ensure that you do not add tables with the same name as the tables present in your schema before the upgrade.

For example, if you are upgrading from 12.2.1.2.0 to 12.2.1.3.0, it is acceptable to have the *EloquaForms* table because it is introduced in 12.2.1.1.0. However, the *CECSAudit* table is not expected to be in your schema before the upgrade.

List of tables that were added in 12.2.1.1.0:

- EloquaForm
- EloquaInstallations
- EloquaInstances
- AVISPORTS Sample
- FileResource
- FileResource_Dim
- FileResource_DimP
- FileResource_Rtgs

List of tables that were added in 12.2.1.3.0:

- ContentCloud
- ContentCloudAudit
- ContentCloudPubTargets
- ContentCloud_Dim

- ContentCloud_DimP
- ContentCloud_Q
- ContentCloud_Rtgs
- WCS_ContentCloudSubtype

Oracle recommends that you remove or rename these tables from the Sites schema before you start the Upgrade Assistant.

**Note:**

This list of tables is applicable only when you are upgrading Oracle WebCenter Sites from 12c (12.2.1.2) or earlier.

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 (12.2.1.4.0).
- [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.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

**Note:**

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 9-4 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 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 9-4 (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"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR <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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Product Schemas Using the Upgrade Assistant

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

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 **Individually Selected Schemas** or **All Schemas Used by a Domain** to upgrade the schemas for all the components that WebCenter Sites uses. Click **Next**.

The Upgrade Assistant identifies the components that are available for a schema upgrade. The components used by WebCenter Sites are:

- Oracle Audit Services
 - Oracle Platform Security Services
 - Common Infrastructure Services
 - Oracle WebLogicServer
 - Oracle WebCenter Sites
3. If you selected **Individually Selected Schemas**: On the Available Components screen, select Oracle WebCenter Sites and other components, as listed in step 2. Click **Next**. When you select a component, the schemas and any dependencies are automatically selected.
 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 WebCenter Sites Source Version screen, select **12.2.1.0.0 and Later** and click **Next**. This is the starting point of your upgrade.
6. On the WebCenter Sites Source Schema screen, select the database type from the **Database Type** drop-down list.

Specify the database connect string in the **Database Connect String** field in the following format:

- (Oracle Database) *host:port/service or host:port:SID or TNS connect string*
- (Microsoft SQL Server) *//host:port;DatabaseName=dbname*
- (IBM DB2) *//host:port;DatabaseName=dbname*

Specify the user name with DBA privileges in the **DBA User Name** field. Specify the DBA password in the **DBA Password** field.

Specify the user name and password for the schema in the **Schema User Name** and **Schema Password** fields, respectively.

 **Note:**

For the DB2 database schema upgrade, the Oracle WebCenter Sites component will not be listed if you select **All Schemas Used by a Domain** in the Selected Schemas screen because WebCenter Sites uses a different driver class from what WebLogic provides. Therefore, you must upgrade Oracle WebCenter Sites schema by selecting **Individually Selected Schemas** separately from the rest of the components that WebCenter Sites uses.

7. On the WebCenter Sites Location screen, specify the complete location of the existing Sites home and Sites shared directory, and location of the 12c configuration file: `wcs_properties.json`.

Click **Next**.

8. 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* 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.

9. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

10. 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**.

11. 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 `NEW_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.

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 12.2.1.4.0.

 **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.

About Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).

 **Note:**

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

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.

- If the installation that you're upgrading does not use Oracle Access Management (OAM), then you must edit two files to prevent the Reconfiguration Wizard from attempting to update the nonexistent OAM Infrastructure schema, which causes the upgrade to fail.

Comment out the lines in your `$DOMAIN/init-info/domain-info.xml` that are similar to this example:

```
<!--extention-template-ref name="Oracle Identity Navigator"
  version="11.1.1.3.0"
  location="/u01/app/oracle/product/fmw/iam111130/common/
templates/applications/
yourcompany.oinav_11.1.1.3.0_template.jar"
  symbol=""/-->

<!--install-comp-ref name="oracle.idm.oinav"
version="11.1.1.3.0"

symbol="yourcompany.idm.oinav_11.1.1.3.0_iam111130_ORACLE_HO
ME"
  product_home="/u01/app/oracle/product/fmw/iam111130"/-->
```

and similarly comment out the lines in `$DOMAIN/config/config.xml` that are similar to this example:

```
<!--app-deployment>
  <name>oinav#11.1.1.3.0</name>
  <target>AdminServer</target>
  <module-type>ear</module-type>

  <source-path>/u01/app/oracle/product/fmw/iam111130/oinav/
modules/oinav.ear_11.1.1.3.0/oinav.ear</source-path>
  <deployment-order>500</deployment-order>
  <security-dd-model>DDOnly</security-dd-model>
  <staging-mode>nostage</staging-mode>
</app-deployment-->
```

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:**

When the domain reconfiguration process starts, you can't undo the changes that it makes. 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. See *Reconfiguring WebLogic Domains in Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

- [Backing Up the Domain](#)
- [Starting the Reconfiguration Wizard](#)
- [Reconfiguring the WebCenter Sites Domain with the Reconfiguration Wizard](#)
Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

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.
(Windows) `copy C:\domains\mydomain to C:\domains\mydomain_backup.`
(UNIX) `cp mydomain /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.

Starting the Reconfiguration Wizard

 **Note:**

Shut down the administration server and all collocated managed servers before starting the reconfiguration process. See [Stopping Servers and Processes](#) .

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) `NEW_ORACLE_HOME/oracle_common/common/bin`
 - (Windows) `NEW_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
```

Reconfiguring the WebCenter Sites Domain with the Reconfiguration Wizard

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

Note:

Reconfiguration templates are automatically selected for every Oracle product that is installed, and are 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. If you see a template that is reported as missing, verify whether you have installed that respective Oracle product in your domain. For example, if Oracle HTTP Server is part of your existing domain, ensure that you install the 12c (12.2.1.4.0) Oracle HTTP Server product distribution.

Note:

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

To reconfigure the domain with the Reconfiguration Wizard:

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 (12.2.1.4.0) is 1.8.0_211 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 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:**

By default **Oracle's Driver (Thin) for Service connections; Versions: Any** is the selected driver. If you specified an instance name in your connection details — instead of the service name — you must select **Oracle's Driver (Thin) for pooled instance connections; Versions: Any** If you do not change the driver type, then the connection will fail.

 **Note:**

For any existing 12c (12.2.1.3.0) datasource, the reconfiguration will preserve the existing values. For new datasources where the schema was created for 12c (12.2.1.4.0) 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.

5. On the JDBC Component Schema screen, verify that the DBMS/Service and the Host name is correct for each component schema and click **Next**.
6. For DB2, Populate the DBMS/Service and HostName for the WCSITES Component Schema in the 'Component Datasources' screen for reconfig.
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.

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 (12.2.1.4.0).
- [Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.

- [Verifying the Domain-Specific-Component Configurations Upgrade](#)
To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:



Note:

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 9-5 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.

Table 9-5 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none">• TRACE• NOTIFICATION• WARNING• ERROR• INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 9-5 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant

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

When performing a reduced downtime upgrade for WebCenter Sites, you must run the Upgrade Assistant a second time to upgrade the component configurations. This step is not needed for the other WebCenter components.

To upgrade domain component configurations 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 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 WebCenter Sites Source Version screen, select **12.2.1.0.0 or Later** and click **Next**. This is the starting point of your upgrade.
6. (Clustered environment) If the Source environment is a Clustered environment, use the pack/unpack utility to apply the changes to other cluster members in the domain.

In Primary node, go to path of target environment and execute PACK command:

```
$ORACLE_HOME/oracle_common/common/bin
```

In Secondary cluster member nodes, go to target environment and execute UNPACK command:

```
$ORACLE_HOME/oracle_common/common/bin
```

- a. On each of the Secondary cluster member nodes, replace the Sites `config` folder with the one from the Primary node by copying the `$DOMAIN_HOME/wcsites/wcsites/config/` to each of the nodes from the Primary node.
- b. On each of the Secondary cluster member nodes, update the following files located at `DOMAIN_HOME/wcsites/wcsites/config/`:
 - host properties:
In this file, replace IP-Address details of Primary node with Secondary node details
 - `jbossTicketCacheReplicationConfig.xml`:
Update the `bind_addr` property with a valid host or IP address of Primary node with Secondary node details for this Secondary cluster node

 **Note:**

Oracle recommends changing the `multicastGroupPort` value to a unique value greater than 2048. Ensure that the multicast port used in `jbossTicketCacheReplicationConfig.xml` is the same on each node in the cluster but is different on other clusters running on the same network.

- `cas-cache.xml`:

If you are using IPv6 addressing, set `multicastGroupAddress` value to a valid IPv6 multicast address. This value must be the same for each node in the cluster. For example: `[ff0x:0:0:0:0:0:0:301]`.

Set the `timeToLive` parameter to a value appropriate for your environment (typically 1). The `timeToLive` field must be changed from the default value of 0 if the cluster members are not all collocated on the same machine. This field must be set based on the distribution of your clustered machines, as shown in the following table:

Table 9-6 Description of the different values of the `timeToLive` field

<code>timeToLive</code> Value	Description
1	Multicast packets restricted to the same subnet.
32	Multicast packets restricted to the same site.
64	Multicast packets restricted to the same geographical region.
128	Multicast packets restricted to the same continent.
256	No restriction.

Repeat this step for `cs-cache.xml`, `linked-cache.xml`, and `ss-cache.xml` files.

 **Note:**

For all these 4-xml files(`cas-cache.xml`, `cs-cache.xml`, `linked-cache.xml`, and `ss-cache.xml`) the values of “`multicastGroupAddress`”, “`timeToLive`”, “`multicastGroupPort`” should be appropriate as per the Primary node

- c. On each of the Secondary cluster member node go to path `EXISTING_DOMAIN_HOME/bin` and modify `setStartupEnv.sh` file
- Ensure `-Dsites.node=<Secondary cluster node name>`. If this parameter is not present then add this parameter
 - Ensure `-Dsites.config=<Folder Path containing wcs_properties.json file>`

 **Note:**

The `wcs_properties.json` file is shared among Primary and Secondary cluster member nodes, so the location path of this file should be the same for Primary and Secondary cluster member nodes.

7. 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* 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.

8. 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.

9. 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**.

10. If the configuration upgrade is successful, summary files are generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the source is a clustered environment, the summary details are generated for each cluster as follows:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

Verifying the Domain-Specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

To sign in to the Administration Console, go to: `http://administration_server_host:administration_server_port/console`

To sign in to Oracle Enterprise Manager Fusion Middleware Control Console, go to: `http://administration_server_host:administration_server_port/em`

Note:

After upgrade, make sure you run the administration tools from the new 12c (12.2.1.4.0) Oracle home directory and not from the previous Oracle home directory.

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.

If you created the FMW user to run the Upgrade Assistant, ensure that you delete the account after verifying your upgrade was successful.

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 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.

 **Note:**

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

Step 4: 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.

Post-Upgrade Validation Tasks

Oracle has provided validation scripts that you can run on your newly upgraded domain to ensure data integrity after a successful schema and configuration upgrade. You can review the validation summary report for any inconsistencies in data that may have occurred during the schema and configuration upgrade processes.

To run the validation script:

1. The validation script is available at the following locations in the new Oracle Home:
(UNIX) `Oracle_Home/wcsites/plugins/upgrade/`
(UNIX) `./validation.sh`
(Windows) `Oracle_Home\wcsites\plugins\upgrade\`
(Windows) `validation.bat`
2. When the validation check is complete, validation summary report: `Validation.txt` is generated. Save it at any location on your system.
3. Review the validation summary report to check if there is any inconsistency in the data between your existing domain and the newly configured 12.2.1.4.0 domain.

Post-Upgrade Tasks

The post-upgrade tasks include restoring any custom settings, starting Administration Server and Managed Servers, reconfiguring passwords, and other administrative tasks listed in this topic.

After upgrading to WebCenter Sites 12.2.1.4.0:

1. Re-enable Lucene search indexes.

Follow these steps after the upgrade process to re-enable Lucene search indexes to perform search operations in Contributor UI. Indexes need to be recreated as the Lucene version is now upgraded:

- a. Set the `ORACLE_HOME` environment variable to the directory where you have installed Oracle WebCenter Sites.
- b. Stop all servers and components including the Admin Server and all managed servers.
- c. Create a complete backup of the existing `<DOMAIN_HOME/wcsites/wcsites/lucene>` folder. The `/lucene` folder is located in the WebCenter Sites `/shared` folder.
- d. Set the following environment variables using a terminal window:
 - `JAVA_HOME` to the latest supported JDK version (currently JDK 1.8.0_211)
 - `LUCENEPATH` to the existing `<DOMAIN_HOME/wcsites/wcsites/lucene>` as shown in the following example:

```
export LUCENEPATH=/scratch/Sites12.2.1.4.0/DOMAIN_HOME/wcsites/wcsites/lucene>
```
- e. Download the Lucene jar files (JARS).

- f. Navigate to the folder where the Lucene JARs were downloaded and execute the following two commands:

 **Note:**

Make sure that there are no exceptions (errors) when executing these commands which migrate the indices from Lucene version 4.4 to 6.6 version.

On Linux operating systems:

```
find $LUCENEPATH -mindepth 1 -type d -exec java
  -cp lucene-core-5.5.5.jar:lucene-backward-codecs-5.5.5.jar
  org.apache.lucene.index.IndexUpgrader {} \;
```

```
find $LUCENEPATH -mindepth 1 -type d -exec java
  -cp lucene-core-6.6.0.jar:lucene-backward-codecs-6.6.0.jar
  org.apache.lucene.index.IndexUpgrader {} \;
```

On Windows operating systems (substitute your actual directory paths):

```
c:\LuceneJars>java -cp
  lucene-core-5.5.5.jar;lucene-backward-codecs-5.5.5.jar
  org.apache.lucene.index.IndexUpgrader
  <Path of \lucene folder present in Sites \shared folder>\<Flex
  or Basic Asset type
  Name (such as Flex_C11)>
```

```
c:\LuceneJars>java -cp
  lucene-core-6.6.0.jar;lucene-backward-codecs-6.6.0.jar
  org.apache.lucene.index.IndexUpgrader
  Path of \lucene folder present in Sites \shared folder>\<Flex
  or Basic Asset type
  Name (such as Flex_C11)>
```

2. Restore or re-deploy the custom settings from your existing environment to your 12.2.1.4.0 environment.

These include custom changes made to Java libraries, static web resources, or element changes.

To restore changes made to the Java libraries or static web pages, see [Migrating Custom Java Libraries or Static Web Resources](#).

3. Start Administration Server and Managed Servers. See [Starting Servers and Processes](#).

 **Note:**

Before you start the Administration Server and Managed Servers, clear the cached images and files in the browser.

4. Reconfigure passwords for the publishing process.
 - a. Sign in to the Administration Server URL as the Administrator.
 - b. Go to **Admin** menu and click **Destinations** under **Publishing**.
 - c. Update the publishing destination URL, Port, Username, and Password.
5. If external WebRoots are configured, update WebRoots from Sites Admin user interface.
6. If your source was a clustered environment, copy the config directory xml file settings from your source environment on which you run the Upgrade Assistant, to all other nodes on your upgraded environment.

These include the following:

- cs-cache.xml
 - cas-cache.xml
 - ss-cache.xml
 - linked-cache.xml
 - MobilityServices.xml
 - Custom/RestResources.xml
 - wcs_properties_bootstrap.ini
7. (Applicable only if you are using SQL server) Fusion Middleware Infrastructure Release 12c requires the SQL Server database to be configured in a case sensitive mode. As a result, ics:sql jsp tag provided by WebCenter Sites require the table value to be in the same case as stated in the database.

Following is the syntax of the ics:sql statement:

```
<ics:sql
  sql="sql commands"
  listname="list name"
  table="name of table"
  [limit="max number of results"]/>
```

You must provide the name of the table in the same case as specified in the SQL Server database.

8. The following properties are reset to the application Admin user account values provided during Sites Configuration Setup process:
 - xcelerate.batchuser and password
 - cs.emailpassword

You must update these properties with their appropriate values using the Property Management Tool.

9. After WCC integration, reset the wcc.server.password in WCC Configuration to view all the mapped rules.

10. If the instance is delivery and has any of the Sample Sites published, then you must republish the Sample Sites to the delivery instance from upgraded development instance.
11. **(If you are upgrading from a previous 12c release only and if Sites is installed with RSS and Site Capture on same domain)**
 - a. If you are upgrading Sites with RSS and Site Capture to 12c (12.2.1.4.0) from 12.2.1.0 or a later release, you must create a new domain and install RSS and Site Capture again.
 - b. If you are not installing Site Capture on the same port, perform the following:
 - i. Change the Site Capture port in the FW_View and FW_Application tables for Site Capture in Sites
 - ii. Change the port number in the valid.urls property
 - iii. Change the port number in other properties under the *SiteCapture* category
 - c. After installing RSS, change the RSS port in the SystemSatellite table, unless RSS is installed on same port.

Migrating Custom Java Libraries or Static Web Resources

Perform this optional step only if custom Java libraries or static web resources were added to the web application in your pre-upgrade environment and you want to continue to use them in the upgraded environment.

If the web application includes custom Java libraries (jar files) or custom static web resources, such as css, js, or images, then you will have to manually migrate them to the upgraded environment after the upgrade. If you do not migrate these resources, you will not be able to access the functionality in the upgraded environment.

The WebCenter Sites web application is shipped as a WAR file. The web application is deployed during Config Wizard process initially and can be redeployed multiple times during the application lifecycle. Oracle recommends that you do not include any implementation-specific customizations to the Sites WAR file as the changes will be overwritten during the upgrade process.

When extending the WebLogic Server Shared Libraries framework, Sites provides `extend.sites.webapp-lib.war` as a shared library. This file is located in `NEW_ORACLE_HOME/wcsites/webcentersites/sites-home/` directory. Any implementation-specific customizations, such as static web resources or JAVA libraries, can be included in this WAR file. This shared library gets deployed during application lifecycle and shares the same context root as sites (`/sites/`). The contents of this shared library will not be overwritten during patching process.

Additionally, if the Sites UI has been customized, the code changes must also be migrated to the upgraded environment.

Upgrading Oracle WebCenter Content

The process of upgrading Oracle WebCenter Content from a supported 11g or previous 12c environment to an Oracle WebCenter Content 12c (12.2.1.4.0) environment includes some restrictions, prerequisites, and post upgrade tasks to be performed.

- [Understanding an Upgrade to Oracle WebCenter Content 12c](#)
An upgrade of Oracle WebCenter Content domain to 12c can include WebCenter Content, WebCenter Enterprise Capture, WebCenter Content Imaging, and WebCenter Content Web UI.
- [Performing Pre-Upgrade Tasks for WebCenter Content](#)
You may need perform additional Content-specific pre-upgrade tasks before you can upgrade WebCenter Content to 12c (12.2.1.4.0)
- [Performing Pre-Upgrade Tasks for Oracle WebCenter Enterprise Capture](#)
You must perform pre-upgrade tasks in order to upgrade WebCenter Enterprise Capture.
- [Performing an Upgrade of Oracle WebCenter Content](#)
WebCenter Content can be upgraded after performing the required pre-configuration tasks.
- [Performing Post Upgrade Tasks for WebCenter Content](#)
There are a few post upgrade tasks to be performed in order to successfully complete the WebCenter Content.

Understanding an Upgrade to Oracle WebCenter Content 12c

An upgrade of Oracle WebCenter Content domain to 12c can include WebCenter Content, WebCenter Enterprise Capture, WebCenter Content Imaging, and WebCenter Content Web UI.

What's New in WebCenter Content 12c

WebCenter Content 12c now supports a single WebLogic Server domain for all WebCenter Content and Capture components. It does not, however, support a direct upgrade of the domain hosting the Oracle WebCenter Content - Web UI from Release 11g to 12c. You will need to decommission the existing 11g Web UI domain and then extend the target upgraded WebCenter Content 12c domain with the Web UI component.

Performing Pre-Upgrade Tasks for WebCenter Content

You may need perform additional Content-specific pre-upgrade tasks before you can upgrade WebCenter Content to 12c (12.2.1.4.0)

The following tasks must be completed before you can upgrade your existing Oracle WebCenter Content and Content server environment:



Note:

You must complete all of the required Oracle WebCenter pre-upgrade tasks before performing the WebCenter Content-specific tasks. See [Performing the Oracle WebCenter Pre-Upgrade Tasks](#)

Performing Pre-Upgrade Tasks for Oracle WebCenter Enterprise Capture

You must perform pre-upgrade tasks in order to upgrade WebCenter Enterprise Capture.

Before upgrading Oracle WebCenter Enterprise Capture, review the following and complete all applicable tasks.

Once you have completed the Oracle WebCenter Enterprise Capture pre-upgrade tasks, go to section [Upgrading an Oracle WebCenter Domain](#) .

- Upgrade only standard (non Fusion Application) environments already running Oracle WebCenter Enterprise Capture.
- Upgrade all Oracle WebCenter Enterprise Capture systems within a clustered environment simultaneously. You can upgrade independent Oracle WebCenter Enterprise Capture systems separately.
- Identify a time to perform the updates that will not interfere with operations. The services will be unavailable while the update is being performed.
- Stop the Oracle WebCenter Enterprise Capture server before upgrading.
- [Verify the Batch Processing has Completed and Capture JMS Queues are Empty](#)

Verify the Batch Processing has Completed and Capture JMS Queues are Empty

Verify all batch processing completes and ensure that the Capture JMS queues are empty.

1. Open the Administration Console for this domain.
`http://<AdminServerName>:7001/console`
Where:
`<AdminServerName>` = is the name or IP address of the administration server associated with the Capture domain
7001 = the communication port associated with the administration server
2. In the "Domain Structure" navigation panel on the left, expand "Services".
3. Expand the "Messaging" node.
4. Select the "JMS Servers" item in the tree list.
5. Select the "capture-jms-server" item in the "JMS Servers" list in the main panel.

6. Select the "Monitoring" tab.
7. Select the "Monitoring" sub-tab.
8. Verify that the "Messages Current" and "Messages Pending" values in the table are both "0".

If either of these values is greater than zero, indicating pending jobs, wait until all jobs have been processed and these counters show "0" before proceeding.

Performing an Upgrade of Oracle WebCenter Content

WebCenter Content can be upgraded after performing the required pre-configuration tasks.

Once all of the pre-upgrade configuration tasks are complete, you can upgrade the WebCenter Content domain using the standard Fusion Middleware procedures described in [Upgrading an Oracle WebCenter Domain](#).

After the upgrade you will need to perform additional post-upgrade configuration tasks as described in [Performing Post Upgrade Tasks for WebCenter Content](#)

Performing Post Upgrade Tasks for WebCenter Content

There are a few post upgrade tasks to be performed in order to successfully complete the WebCenter Content.

Complete these tasks after you have upgraded Oracle WebCenter Content.



Note:

These post-upgrade tasks should be done in addition to the general WebCenter post-upgrade tasks in [Performing Post-Upgrade Configuration Tasks](#).

- [Configuring the Oracle WebCenter Content Server Domain to Include WebCenter Content - Web UI](#)
- [Configuring E-Business Suite AXF Schema After an Upgrade](#)
After the upgrade you will need to run a script to update the endpoint configuration of the AXF schema.
- [Updating the WccAdf.ear File \(Optional\)](#)
- [Migrating Custom Skins for WebCenter Content Web UI](#)
- [Upgrading Oracle Application Adapters for Oracle WebCenter Content](#)
- [Configuring the Report Library for Records Management in Content Server](#)
- [Using Fusion Middleware Control to Monitor IBR](#)
- [Starting Oracle WebCenter Content Server with SOA or BAM](#)

Configuring the Oracle WebCenter Content Server Domain to Include WebCenter Content - Web UI

Extending the upgraded WebCenter Content Server domain to include the WebCenter Content Web UI components follows the standard WebLogic Server configuration procedures.

See Extending WebLogic Domains for detailed information about extending the domain with the Fusion Middleware Configuration Wizard.

To launch the Configuration Wizard:

On UNIX Operating Systems:

```
cd /12c_Oracle_Home/oracle_common/common/bin
./config.sh
```

On Windows Operating Systems:

```
cd \12c_Oracle_Home\oracle_common\common\bin
```

When prompted, select the **WebCenter Content - Web UI - 12.2.1.4.0** template.

Configuring E-Business Suite AXF Schema After an Upgrade

After the upgrade you will need to run a script to update the endpoint configuration of the AXF schema.

After the upgrade, Oracle E-Business Suite (EBS) users can run the following script to update the Endpoint in the E-Business Suite Application Extension Framework (AXF) schema.

1. Navigate to the Universal Content Management (Oracle UCM) 12c (12.2.1.4.0) installation directory:

```
cd /12cOracle_HOME/wccontent/ucm/Distribution/
EBSIntegration/R12
```

2. Copy the following files to the /bin directory of the database hosting the EBS AXF schema

```
EbsUpdateScript.sh and EbsUpdateTables.sql
```

3. Run the script from the /bin directory and when prompted provide the following information:

```
"Enter AXF User name on EBS Schema "
```

```
"Enter AXF Password on EBS Schema "
```

```
"Enter HostName where UCM is running "
```

```
"Enter Port where UCM is running "
```

Once you have provided this information, the EBS AXF schema will be updated.

Updating the WccAdf.ear File (Optional)

After the domain has been upgraded, you can manually modify the `wccadf.ear` file with the correct MDS partition details (those provided during the 11g installation.)

To update the `wccadf.ear` file, navigate to the following 11g directory and launch WLST in OFFLINE mode:

```
cd /<11g_MW_HOME>/oracle_common/common/bin/
./wlst.sh

wls:/offline> archive = getMDSArchiveConfig ('/ <12.2.1 wccadf.ear location>')

wls:/offline> archive.setAppMetadataRepository(repository='mds-<mds_repo_name>',
partition='<11g_partition_name>', type='DB', jndi='jdbc/mds/<mds_repo_name>')

wls:/offline> archive.save()
```

For example:

```
archive = getMDSArchiveConfig('/12.2.1_Oracle_Home/wccontent/wccadf/
WccAdf.ear')
archive.setAppMetadataRepository(repository='mds-WCCUIMDSREPO',
partition='11.1.1.9.0_MDS_PARTITION', type='DB', jndi='jdbc/mds/
WCCUIMDSREPO')
archive.save()
```

Migrating Custom Skins for WebCenter Content Web UI

If you applied a custom skin to the WebCenter Content - Web UI in 11g, then you will need to migrate to the new 12c deployment, the custom skins JAR file after the upgrade.

1. Uninstall the Oracle WebCenter Content -Web UI application from the 12.2.1 deployment. Use the Oracle Universal Installer (OUI) in -deinstall mode.
2. Delete the 12.2.1 `oracle.wcc.adf.skin.custom` library.
3. Deploy the 11g custom skin JAR file, `oracle.wcc.adf.skin.custom (11.1, 11.1.1.8.1)`, to the 12.2.1 environment.
4. Reinstall the Oracle WebCenter Content - Web UI 12c application to pick up the new custom skin JAR file contents.

Upgrading Oracle Application Adapters for Oracle WebCenter Content

The Oracle WebCenter Content application adapters as described in *Oracle Fusion Middleware Administering the Application Adapters for Oracle WebCenter* contain manual steps for installing the adapters to their respective ERP system (EBS and PeopleSoft). In order to upgrade to from any previous release, these adapters must be reinstalled.

To reinstall the EBS adapter:

1. Follow the instructions in *Compiling Oracle E-Business Suite Forms in Oracle Fusion Middleware Administering the Application Adapters for Oracle WebCenter* to upgrade the `AXF_CUSTOM.PLL` module.

2. If you are configured for SSL, follow the instructions in Configuring the Integration for SSL in *Oracle Fusion Middleware Administering the Application Adapters for Oracle WebCenter*.

To reimport the PeopleSoft project, follow the instructions (steps 1-6) in Importing the Oracle PeopleSoft Project in *Oracle Fusion Middleware Administering the Application Adapters for Oracle WebCenter*.

Configuring the Report Library for Records Management in Content Server

If you plan to configure the Records Management feature in Content Server, you need to configure the report library for Records Management after creating the domain that includes the WebCenter Content Managed Server, before starting it for the first time. Without this library, you cannot check in any templates to Content Server.

For more information on configuring the report library for Records Management, see Configuring the Report Library for Records Management in Content Server in the *Oracle Fusion Middleware Installing and Configuring Oracle WebCenter Content*.

Using Fusion Middleware Control to Monitor IBR

If Inbound Refinery (IBR) is used, then the domain must be expanded to use the Oracle Enterprise Manager Plug-in for IBR template with Enterprise Manager Fusion Middleware Control to monitor IBR.



Note:

Inbound Refinery (IBR) 11g cannot be upgraded to 12c. You must install a new IBR to be used with your 12c environment.

The steps below describe how to expand the domain to include the Oracle Enterprise Manager Plug-in for IBR template.

1. Navigate to `ECM_Home/common/bin/`
2. Execute `config.sh`

```
./config.sh
```
3. Select **Extend an existing Weblogic domain**
4. Select the domain to be extended.
5. In the next screen, select **Oracle Enterprise Manager Plugin for IBR**
6. Click **Extend** to extend the domain with the IBR template.

Starting Oracle WebCenter Content Server with SOA or BAM

When WebCenter Content is integrated with Oracle SOA or Oracle Business Activity Monitoring (BAM), you must start SOA and BAM before starting Oracle WebCenter Content or Oracle Inbound Refinery (IBR).

For more information on launching WebCenter Content server from Fusion Middleware Control, see *Getting Started with Administering Oracle WebCenter Content* in *Oracle Fusion Middleware Administering Oracle WebCenter Content*

If you attempt to start the WebCenter Content server or IBR before starting Oracle SOA or BAM servers, then you may see the following error:

```
oracle.wsm.policymanager.PolicyManagerException:  
WSM-02120 : Unable to connect to the policy access service.
```

Upgrading WebCenter Portal from a Previous 12c Release

Use this procedure to upgrade WebCenter Portal from 12c (12.2.1.2 or 12.2.1.3) to 12c (12.2.1.4).

Follow the steps in the following topics to perform the upgrade:

- [Creating a Complete Backup](#)
Before you start an upgrade, back up all system-critical files, including the databases that host your Oracle Fusion Middleware schemas.
- [Installing the Product Distribution](#)
Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Portal 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 you run the Upgrade Assistant to upgrade your schemas and configurations, you must shut down all of the pre-upgrade processes and servers, including the Administration Server and any managed servers.
- [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.
- [About Reconfiguring the Domain](#)
Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).
- [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 Servers and Processes](#)
After a successful upgrade, restart all processes and servers, including the Administration Server and any Managed Servers.

Creating a Complete Backup

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

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

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

See:

- Backing Up Your Environment in *Oracle Fusion Middleware Administering Oracle Fusion Middleware*
- Upgrading and Preparing Your Oracle Databases for 12c (12.2.1.4.0) in *Oracle Fusion Middleware Planning an Upgrade of Oracle Fusion Middleware*

Installing the Product Distribution

Before beginning your upgrade, download the 12c (12.2.1.4.0) Oracle Fusion Middleware Infrastructure and Oracle WebCenter Portal distributions on the target system and install them using Oracle Universal Installer.

Note:

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

Ensure that you download and install all the Oracle products that are part of your domain, for example Oracle HTTP Server. You must install the 12.2.1.4.0 binaries into a new Oracle home. It should be on the same host as the existing Oracle home.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the following from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (fmw_12.2.1.4.0_infrastructure_generic.jar)
 - Oracle WebCenter Portal (fmw_12.2.1.4.0__wcportal.jar)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:
 - (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
 - (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`
5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

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

9. On the Installation Type screen, select the following:
 - For Infrastructure, select **Fusion Middleware Infrastructure**
 - For Oracle WebCenter Portal select **WebCenter Portal**

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

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

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

Click **Install** to begin the installation.

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

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

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

(UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_wcportal.jar`

(Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_wcportal.jar`

 **Note:**

After installing the product distributions, you have to apply the applicable bundle patches. Ensure that the Oracle Home contains the binaries for both WebCenter Content and WebCenter Portal so that all the required patches are applied to the same Oracle Home.

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 `vnccconfig`. 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 Parameters](#)

Upgrade Assistant Parameters

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

Table 11-1 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 11-1 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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**.

 **Note:**

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** option and specify the **Schema Password**.

 **Note:**

The Upgrade Assistant automatically enables default credentials. If you are unable to connect, make sure that you manually enter the credentials for your schema before you continue.

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

4. On the Readiness Summary screen, review the summary of the readiness checks that will be 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 11-2 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /oracle_common/upgrade/ logs	The directory location of the generated readiness report.	No action required.

Table 11-2 (Cont.) Readiness Report Elements

Report Information	Description	Required Action
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, 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, 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, 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 not include all of these checks.

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

```
This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
Log file is located at: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/
oracle_common/upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain
```

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

```
Oracle Platform Security Services
Starting readiness check of Oracle Platform Security Services.
Schema User Name: DEV3_OPSS
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0.
Readiness checks will now be performed.
```

```
Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
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 that the schema does not contain any
unexpected tables TEST_UNEXPECTED_TABLES
Completed schema test: Test that the schema does not contain any
unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema does
not contain any unexpected tables
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 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: SEQUENCE_TEST Test that the Oracle Platform
Security Services schema sequence and its properties are valid
Completed schema test: SEQUENCE_TEST --> Test that the Oracle Platform
Security Services schema sequence and its properties are valid +++ PASS
Finished readiness check of Oracle Platform Security Services with
status: SUCCESS.
```

Oracle Audit Services

```
Starting readiness check of Oracle Audit Services.
Schema User Name: DEV3_IAU
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0. Readiness
checks will now be performed.
Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
```

```
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_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_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 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_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_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 OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table WS_POLICYATTACHMENT:
```

```

TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper
datatypes +++ PASS
    Starting datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
    Completed datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
    Starting schema test: SEQUENCE_TEST Test that the audit schema sequence
and its properties are valid
    Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
    Starting schema test: SYNONYMS_TEST Test that the audit schema required
synonyms are present
    Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
    Finished readiness check of Oracle Audit Services with status: FAILURE.

```

Common Infrastructure Services

```

Starting readiness check of Common Infrastructure Services.
    Schema User Name: DEV3_STB
    Database Type: Oracle Database
    Database Connect String:
    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
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test that
the schema contains all the required tables
    Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does
not contain any unexpected tables
    Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test
that the schema does not contain any unexpected tables
    Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains
all the required database views
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test that
the schema contains all the required database views
    Starting schema test: TEST_MISSING_COLUMNS Test that tables and views
are not missing any required columns
    Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test that
tables and views are not missing any required columns
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options

```

```
Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS
Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++
Test that the database server version number is supported for upgrade
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Oracle JRF

```
Starting readiness check of Oracle JRF.
Finished readiness check of Oracle JRF with status: SUCCESS.
```

System Components Infrastructure

```
Starting readiness check of System Components Infrastructure.
Starting config test: TEST_SOURCE_CONFIG Checking the source
configuration.
INFO /oracle/work/middleware_1212/user_projects/domains/
jrf_domain/opmn/topology.xml was not found. No upgrade is needed.
Completed config test: TEST_SOURCE_CONFIG --> Checking the source
configuration. +++ PASS
Finished readiness check of System Components Infrastructure with
status: ALREADY_UPGRADED.
```

Common Infrastructure Services

```
Starting readiness check of Common Infrastructure Services.
Starting config test: CIEConfigPlugin.readiness.test This tests
the readiness of the domain from CIE side.
Completed config test: CIEConfigPlugin.readiness.test --> This
tests the readiness of the domain from CIE side. +++ PASS
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Finished readiness check of components.

Stopping Servers and Processes

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

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

 **Note:**

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

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

Step 1: Stop the Managed Servers

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

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

When prompted, enter your user name and password.

Step 2: Stop System Components

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

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

You can stop system components in any order.

Step 3: Stop the Administration Server

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

To stop the Administration Server, use the `stopWebLogic` script:

- (UNIX) `EXISTING_DOMAIN_HOME/bin/stopWebLogic.sh`
- (Windows) `EXISTING_DOMAIN_HOME\bin\stopWebLogic.cmd`

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

Step 4: Stop Node Manager

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

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

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.

- [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.
- [Starting the Upgrade Assistant](#)
Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).
- [Upgrading Oracle WebCenter 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.

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

- Note the schema prefix name that was used for your existing schemas. You will use the same prefix when you create new 12c (12.2.1.4.0) schemas.

 **Notes:**

- If your existing schemas are not from a supported version, then you must upgrade them to a supported version before using the 12c (12.2.1.4.0) upgrade procedures. Refer to your pre-upgrade version documentation for more information.
- Some components, such as Oracle Enterprise Data Quality, Oracle GoldenGate Monitor, and Oracle GoldenGate Veridata, support an upgrade from versions other than the standard Oracle Fusion Middleware supported versions.
- If you used an OID-based policy store in the earlier versions, make sure to create a new OPSS schema before you perform the upgrade. After the upgrade, the OPSS schema remains an LDAP-based store.
- You can only upgrade schemas for products that are available for upgrade in Oracle Fusion Middleware release 12c (12.2.1.4.0). Do not attempt to upgrade a domain that includes components that are not yet available for upgrade to 12c (12.2.1.4.0).

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

 **Note:**

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

- Go to the `oracle_common/upgrade/bin` directory:
 - (UNIX) `ORACLE_HOME/oracle_common/upgrade/bin`
 - (Windows) `ORACLE_HOME\oracle_common\upgrade\bin`
- 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 Parameters](#)

Upgrade Assistant Parameters

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

Table 11-3 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.
-logLevel <i>attribute</i>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> TRACE NOTIFICATION WARNING ERROR INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 11-3 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant

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

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 the schema upgrade operation that you want to perform:
 - **Individually Selected Schemas** if you want to select individual schemas for upgrade and you do not want to upgrade all of the schemas used by the domain.

 **Caution:**

Upgrade only those schemas that are used to support your 12c (12.2.1.4.0) components. Do not upgrade schemas that are currently being used to support components that are not included in Oracle Fusion Middleware 12c (12.2.1.4.0).

- **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.

 **Note:**

Oracle recommends that you select **All Schemas Used by a Domain** for most upgrades to ensure all of the required schemas are included in the upgrade.

Click **Next**.

3. If you selected **Individually Selected Schemas**: On the Available Components screen, select the components for which you want to upgrade schemas. When you select a component, the schemas and any dependencies are automatically selected.
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 Schema Credentials screen(s), specify the database connection details for each schema you are upgrading (the screen name changes based on the schema selected):
 - Select the database type from the **Database Type** drop-down menu.
 - Enter the database connection details, and click **Connect**.
 - Select the schema you want to upgrade from the **Schema User Name** drop-down menu, and then enter the password for the schema. Be sure to use the correct schema prefix for the schemas you are upgrading.

 **Note:**

The component ID or schema name is changed for UCSUMS schema as of release 12.1.2, which means the Upgrade Assistant does not automatically recognize the possible schemas and display them in a drop-down list. You must manually enter the name in a text field. The name can be either `prefix_ORASDPM` or `prefix_UMS`, depending on the starting point for the upgrade.

6. 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* 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.

7. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

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 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**.

9. 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 `NEW_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.

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 12.2.1.4.0.

 **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.

About Reconfiguring the Domain

Run the Reconfiguration Wizard to reconfigure your domain component configurations to 12c (12.2.1.4.0).

 **Note:**

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only.

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.

- If the installation that you're upgrading does not use Oracle Access Management (OAM), then you must edit two files to prevent the Reconfiguration Wizard from attempting to update the nonexistent OAM Infrastructure schema, which causes the upgrade to fail.

Comment out the lines in your `$DOMAIN/init-info/domain-info.xml` that are similar to this example:

```
<!--extention-template-ref name="Oracle Identity Navigator"
  version="11.1.1.3.0"
  location="/u01/app/oracle/product/fmw/iam111130/common/
templates/applications/
yourcomany.oinav_11.1.1.3.0_template.jar"
  symbol=""/-->

<!--install-comp-ref name="oracle.idm.oinav"
version="11.1.1.3.0"

symbol="yourcompany.idm.oinav_11.1.1.3.0_iam111130_ORACLE_HO
ME"
  product_home="/u01/app/oracle/product/fmw/iam111130"/-->
```

and similarly comment out the lines in `$DOMAIN/config/config.xml` that are similar to this example:

```
<!--app-deployment>
  <name>oinav#11.1.1.3.0</name>
  <target>AdminServer</target>
  <module-type>ear</module-type>

  <source-path>/u01/app/oracle/product/fmw/iam111130/oinav/
modules/oinav.ear_11.1.1.3.0/oinav.ear</source-path>
  <deployment-order>500</deployment-order>
  <security-dd-model>DDOnly</security-dd-model>
  <staging-mode>nostage</staging-mode>
</app-deployment-->
```

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:**

When the domain reconfiguration process starts, you can't undo the changes that it makes. 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. See *Reconfiguring WebLogic Domains in Oracle Fusion Middleware Upgrading Oracle WebLogic Server*.

- [Backing Up the Domain](#)
- [Starting the Reconfiguration Wizard](#)
- [Reconfiguring the Domain with the Reconfiguration Wizard](#)
Navigate through the screens in the Reconfiguration Wizard to reconfigure your existing domain.

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.
(Windows) `copy C:\domains\mydomain to C:\domains\mydomain_backup.`
(UNIX) `cp mydomain /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.

Starting the Reconfiguration Wizard

Note:

Shut down the administration server and all collocated managed servers before starting the reconfiguration process. See [Stopping Servers and Processes](#) .

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) `NEW_ORACLE_HOME/oracle_common/common/bin`
 - (Windows) `NEW_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
```

Reconfiguring the Domain with the Reconfiguration Wizard

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



Note:

If the source is a clustered environment, run the Reconfiguration Wizard on the primary node only. Use the pack/unpack utility to apply the changes to other cluster members in the domain.

To reconfigure the domain with the Reconfiguration Wizard:

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 (12.2.1.4.0) is 1.8.0_211 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 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:**

By default **Oracle's Driver (Thin) for Service connections; Versions: Any** is the selected driver. If you specified an instance name in your connection details — instead of the service name — you must select **Oracle's Driver (Thin) for pooled instance connections; Versions: Any** if you do not change the driver type, then the connection will fail.

 **Note:**

For any existing 12c (12.2.1.3.0) datasource, the reconfiguration will preserve the existing values. For new datasources where the schema was created for 12c (12.2.1.4.0) 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.

5. On the JDBC Component Schema screen, verify that the DBMS/Service and the Host name is correct for each component schema and click **Next**.
6. 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**.

7. 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**.

8. 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.

9. 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**.

10. 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.

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 (12.2.1.4.0).
- [Upgrading Domain Component Configurations Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.
- [Verifying the Domain-Specific-Component Configurations Upgrade](#)
To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

Starting the Upgrade Assistant

Run the Upgrade Assistant to upgrade product schemas, domain component configurations, or standalone system components to 12c (12.2.1.4.0).

To start the Upgrade Assistant:

 **Note:**

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

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 Parameters](#)

Upgrade Assistant Parameters

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

Table 11-4 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-readiness</code>	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <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.

Table 11-4 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<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 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.
<code>-logLevel attribute</code>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none">• TRACE• NOTIFICATION• WARNING• ERROR• INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

Table 11-4 (Cont.) Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

Upgrading Domain Component Configurations 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 (12.2.1.4.0), you must run the Upgrade Assistant to upgrade the domain *component* configurations to match the updated domain configuration.

To upgrade domain component configurations 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 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 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* 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.

6. 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.

7. 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**.

8. 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.

Verifying the Domain-Specific-Component Configurations Upgrade

To verify that the domain-specific-component configurations upgrade was successful, sign in to the Administration console and the Oracle Enterprise Manager Fusion Middleware Control and verify that the version numbers for each component is 12.2.1.4.0.

To sign in to the Administration Console, go to: `http://administration_server_host:administration_server_port/console`

To sign in to Oracle Enterprise Manager Fusion Middleware Control Console, go to: `http://administration_server_host:administration_server_port/em`

 **Note:**

After upgrade, make sure you run the administration tools from the new 12c (12.2.1.4.0) Oracle home directory and not from the previous Oracle home directory.

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.

If you created the FMW user to run the Upgrade Assistant, ensure that you delete the account after verifying your upgrade was successful.

Starting Servers and Processes

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

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

 **Note:**

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

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

Step 1: Start the Administration Server

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

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

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

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

Step 2: Start Node Manager

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

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

Step 3: Start the Managed Servers

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

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

When prompted, enter your user name and password.



Note:

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

Step 4: Start System Components

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

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

You can start system components in any order.

A

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

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

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

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

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

For example, consider that you installed Oracle Fusion Middleware Infrastructure with the JDK version 8u191. So while configuring the WebLogic domain with the Configuration Assistant, you can select the path to the newer JDK on the Domain Mode and JDK screen of the Configuration Wizard. Example: `/scratch/jdk/jdk1.8.0_211`.

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



Note:

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

- [Updating the JDK Location in an Existing Oracle Home](#)

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

- [Updating the JDK Location in an Existing Domain Home](#)

You must search the references to the current JDK, for example `1.8.0_191` manually, and replace those instances with the location of the new JDK.

Updating the JDK Location in an Existing Oracle Home

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

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

(UNIX) `ORACLE_HOME/oui/bin`

(Windows) `ORACLE_HOME\oui\bin`

Where, `ORACLE_HOME` is the directory that contains the products using the current version of the JDK, such as `1.8.0_191`.

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

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

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

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

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

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

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

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

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

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

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

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

After you run this command, the `JAVA_HOME` variable in the `.globalEnv.properties` file now contains the path to the new JDK, such as `jdk1.8.0_211`.

Updating the JDK Location in an Existing Domain Home

You must search the references to the current JDK, for example `1.8.0_191` manually, and replace those instances with the location of the new JDK.

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

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

(UNIX) *DOMAIN_HOME*/bin/setNMJavaHome.sh

(Windows) *DOMAIN_HOME*\bin\setNMJavaHome.cmd

(UNIX) *DOMAIN_HOME*/nodemanager/nodemanager.properties

(Windows) *DOMAIN_HOME*\nodemanager\nodemanager.properties

(UNIX) *DOMAIN_HOME*/bin/setDomainEnv.sh

(Windows) *DOMAIN_HOME*\bin\setDomainEnv.cmd

B

About the Reduced Downtime Upgrade Process

Review the flowchart and roadmap for an overview of the upgrade process for Oracle Fusion Middleware if you are performing a reduced downtime upgrade.

A reduced downtime upgrade process is different from a standard Fusion Middleware upgrade process. This type of upgrade requires at least a two-node cluster environment and is performed in a rolling fashion so that one node is always up to accomplish the reduced downtime upgrade. In the standard upgrade flow, all servers and processes are stopped prior to initiating the upgrade.

Before you begin the reduced downtime upgrade:

- Back up the database schemas.
- Back up the domain directory and the application directory.
- Back up the UI /similar customizations.

For details about backing up, see [Creating a Complete Backup](#).

After taking the required back ups, uninstall the previous version of the software to ensure that an empty Oracle Home is available to install the new product distributions. This is the key difference between the two upgrade processes. In addition, if your product requires a schema and/or a config upgrade, you will need to run the Upgrade Assistant twice, once each for schema upgrade and for config upgrade.

Note:

Oracle Fusion Middleware 12c (12.2.1.3) is the only supported starting point for a reduced downtime upgrade. You cannot perform a reduced downtime upgrade if you are upgrading from a supported Fusion Middleware 11g or 12c (12.2.1.2.0 or earlier) release, or if you do not have a multi-node environment. To perform a reduced downtime upgrade from 12c (12.1.3 or 12.2.1.2), you must first upgrade to 12.2.1.3 using the standard upgrade process. See [Upgrading Oracle WebCenter from a Previous 12c Release](#).

Figure B-1 Process Flowchart for a Reduced Downtime Upgrade

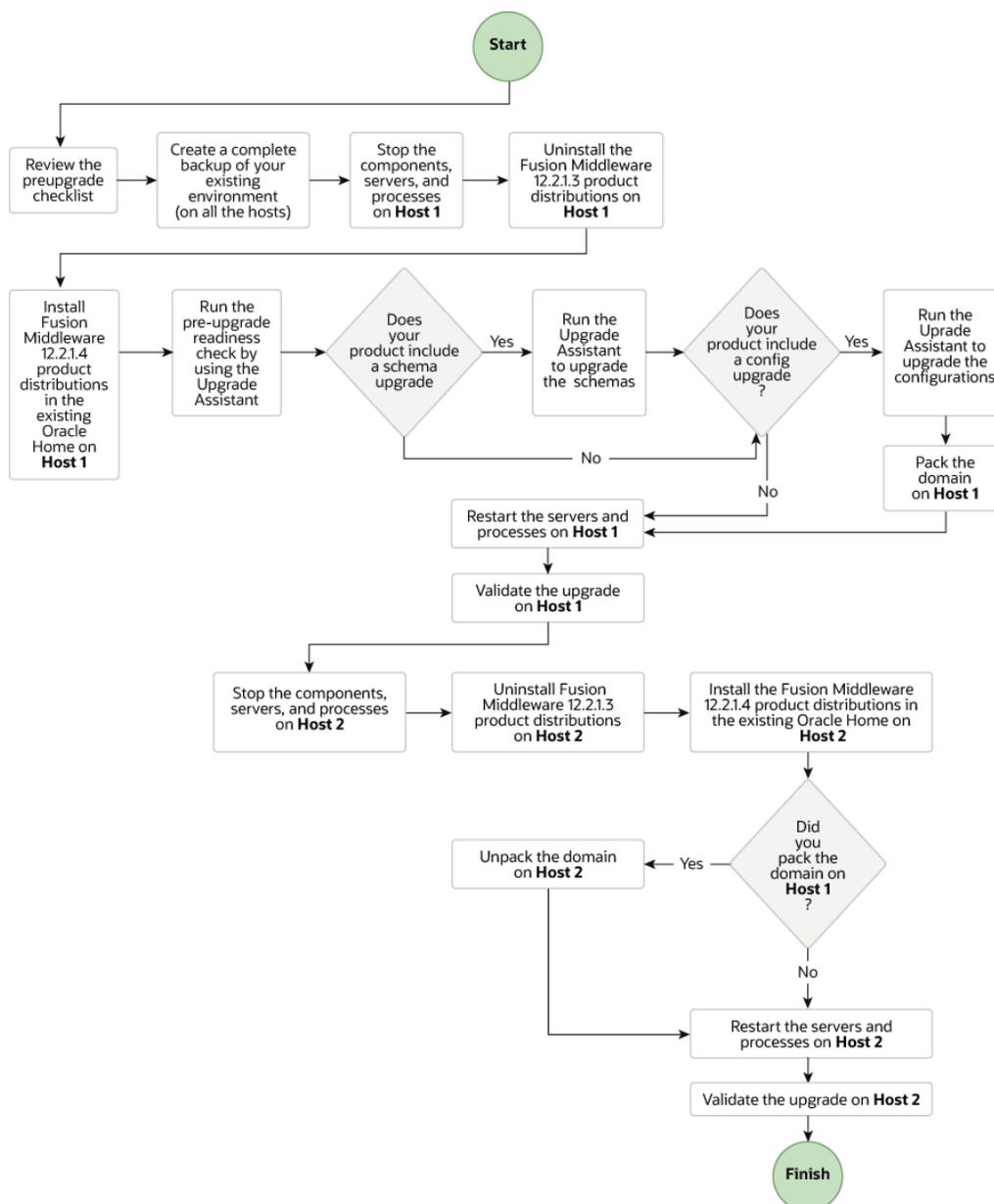


Table B-1 lists the high-level steps that you need to perform for a reduced downtime upgrade of the Oracle Fusion Middleware 12c (12.2.1.3.0) release. You must repeat these steps for each additional host.

Table B-1 Tasks for Performing a Reduced Downtime Upgrade of Oracle Fusion Middleware 12c (12.2.1.3.0) Release

Task	Description
<p>Required</p> <p>Before you begin a reduced downtime upgrade, you must complete the required pre-upgrade tasks.</p>	<p>The pre-upgrade tasks include reviewing the pre-upgrade checklists; backing up the Oracle home, domain directory, and component schemas; and using the appropriate JDK version.</p> <p>For a complete list of the pre-upgrade tasks, see Required Tasks that Must be Completed Before You Begin.</p>
<p>Required</p> <p>Create a complete backup of your existing environment, on all hosts.</p>	<p>See Creating a Complete Backup.</p>
<p>Required</p> <p>Stop the servers and processes on Host 1.</p>	<p>Before starting the upgrade process, stop all the servers, components, and processes on Host 1.</p> <p>See Stopping Components, Servers and Processes on Host 1.</p>
<p>Required</p> <p>Uninstall the Fusion Middleware 12c (12.2.1.3.0) product distributions on Host 1.</p>	<p>Uninstall the Fusion Middleware 12c (12.2.1.3.0) product distributions from the existing <code>ORACLE_HOME</code> so you can install the Fusion Middleware Infrastructure 12c (12.2.1.4.0) into the same directory.</p> <p>See Uninstalling the Software.</p>
<p>Required</p> <p>Install 12c (12.2.1.4.0) product distributions into the existing Oracle Home on Host 1.</p>	<p>Install Oracle Fusion Middleware Infrastructure 12c (12.2.1.4.0) by using the Oracle Universal Installer. You must install 12c (12.2.1.4.0) product distributions into the same <code>ORACLE_HOME</code>.</p> <p>See Installing the 12c (12.2.1.4.0) Product Distributions for Oracle WebCenter.</p>
<p>Optional</p> <p>Run the Readiness Check.</p>	<p>Running the Readiness Check by using the Upgrade Assistant helps you determine whether your pre-upgrade environment is ready for upgrade.</p> <p>See Running a Pre-Upgrade Readiness Check.</p>
<p>Required</p> <p>If applicable to your product, perform the schema and config upgrade separately on Host 1, by using the Upgrade Assistant.</p>	<p>See the following topics:</p> <ul style="list-style-type: none"> • Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant • Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant • Upgrading WebCenter Portal Domain Components <p>For the list of schemas and component configuration that you can upgrade to 12c (12.2.1.4.0), see the following sections of <i>Oracle Fusion Middleware Upgrading with the Upgrade Assistant</i></p> <ul style="list-style-type: none"> • Identifying Schemas that Can Be Upgraded to 12c (12.2.1.4.0) • Identifying Configurations That Can Be Upgraded with the Upgrade Assistant
<p>Required</p> <p>If your product included a configuration upgrade, pack the domain on Host 1.</p>	<p>See Packing the Domain and Updating the Domain Properties.</p>

Table B-1 (Cont.) Tasks for Performing a Reduced Downtime Upgrade of Oracle Fusion Middleware 12c (12.2.1.3.0) Release

Task	Description
Required Restart the servers and processes on Host 1.	The upgrade process is complete. You can now restart the servers, components, and processes. See Restarting Node Manager, Administration Server, Managed Servers and Components on Host 1 .
Required Validate the upgrade on Host 1.	After you complete the upgrade, perform the upgrade validation tasks. See Validating the Upgrade .
Required Stop the servers and processes on Host 2.	Before starting the upgrade, you must stop the system components, managed servers and node manager on Host 2. See Stopping the Components, Servers and Processes on Host 2 .
Required Uninstall Fusion Middleware Infrastructure 12 c (12.2.1.3.0) on Host 2.	Uninstall Fusion Middleware Infrastructure 12c (12.2.1.3.0) from the existing ORACLE_HOME so you can install the Fusion Middleware Infrastructure 12c (12.2.1.4.0) into the same directory. See Uninstalling the Software .
Required Install Fusion Middleware Infrastructure 12c (12.2.1.4.0) and any other product distributions that you run in your domain on Host 2.	See Installing the Software into the Existing Middleware Home .
Required If you have packed the domain on Host 1, unpack the domain on Host 2.	See Unpacking the Domain on Each Additional Host .
Required Restart the servers and processes on Host 2.	After the upgrade is complete, restart the servers and processes. See Restarting the Managed Servers and Processes .
Required Validate the upgrade on Host 2.	After restarting the servers and processes, perform the upgrade validation tasks. See Validating the Upgrade .

- [Performing a Reduced Downtime Upgrade](#)
If you are upgrading from Fusion Middleware 12c (12.2.1.3) release, you can use this process to upgrade your multi-node domain without shutting down all of the servers at the same time.

Performing a Reduced Downtime Upgrade

If you are upgrading from Fusion Middleware 12c (12.2.1.3) release, you can use this process to upgrade your multi-node domain without shutting down all of the servers at the same time.

The procedures described in this section are based on the Oracle Fusion Middleware Standard Installation Topology (SIT) and require that you have a multi-node environment. The standard installation topology for Oracle Fusion Middleware Infrastructure has a standard WebLogic Server domain that contains an Administration

Server and a cluster containing two Managed Servers. **Host 1** is used to describe the procedures performed on the host with the Administration server and **Host 2** is used to describe the procedures performed on the other managed server host(s). If you have more than two hosts in your environment, be sure to complete the procedures on each additional node.

Required Tasks that Must be Completed Before You Begin

Review the following before you begin a reduced downtime upgrade:

- Review the preupgrade checklists for the components in your deployment. The checklists are found in each of the component-specific upgrade guides. Some products may require additional steps before performing the upgrade.
- Create a complete backup of the Oracle home (on all of the nodes), the entire domain directory (on all of the nodes) and component schemas before performing the upgrade. In addition, Oracle recommends that you create a backup of UI customizations and the applications directory, in addition to domain directory. See [Creating a Complete Backup](#).
- Make sure that you are using the appropriate JDK version for this release. For this release the correct version is `jdk1.8.0_211`
- If you are upgrading a shared component directory, back up the contents of the shared directory before the upgrade. The configuration upgrade makes changes to these directories.
- Make sure that your backups include any modified scripts, such as `setStartupEnv.sh`, for example. The upgrade will overwrite any customized files and you will lose your changes.
- [Performing the Upgrade on Host 1](#)
- [Performing the Upgrade on Host 2](#)
- [Validating the Upgrade](#)
After you have completed the upgrade on all hosts, complete the standard upgrade verification tasks to ensure that all components will continue to work as expected.

Performing the Upgrade on Host 1

Perform the following tasks on the machine that hosts the Administration server and serves as the primary machine for your deployment.

- [Stopping Components, Servers and Processes on Host 1](#)
You must shut down all of the system components, processes, servers (including the Administration Server and any managed servers), and the node manager (if running).
- [Uninstalling the Software](#)
When performing a rolling upgrade, an empty directory is required for installing the new binaries prior to upgrading.
- [Installing the 12c \(12.2.1.4.0\) Product Distributions for Oracle WebCenter](#)
Before starting your upgrade, uninstall the software from the existing Oracle home, then use the Oracle Universal Installer to install the 12c (12.2.1.4.0) product distributions into the same Oracle home on the target system. You must install the product distributions on each host during the upgrade.
- [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.

- [Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade the product schemas.
- [Upgrading WebCenter Portal Domain Components](#)
- [Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant](#)
Navigate through the screens in the Upgrade Assistant to upgrade component configurations in the WebLogic domain.
- [Packing the Domain and Updating the Domain Properties](#)
If you are upgrading WebCenter Sites or WebCenter Portal as part of your reduced downtime upgrade, then you will need to pack the domain from Host 1 and unpack it during the upgrade on Host 2. You will also need to update the configuration properties before you start the servers.
- [Restarting Node Manager, Administration Server, Managed Servers and Components on Host 1](#)
After the upgrade, you must restart the components, servers, and processes in the correct order.

Stopping Components, Servers and Processes on Host 1

You must shut down all of the system components, processes, servers (including the Administration Server and any managed servers), and the node manager (if running).

Note:

The procedures in this section describe how to stop components, servers, and processes using the WLST command line or a script. You can also use the Oracle Fusion Middleware Control and the Oracle WebLogic Server Administration Console.

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 following order:

- System Components (if any)
- Managed Server(s)
- Administration Server
- Node Manager

Stopping 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
```

Stopping the Managed Servers

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

1. Enter the following command:

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

2. When prompted, enter your user name and password.

Stopping 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:

1. Enter the following command:

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

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

Stopping the Node Manager

To stop Node Manager, close the command shell/prompt 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.

Uninstalling the Software

When performing a rolling upgrade, an empty directory is required for installing the new binaries prior to upgrading.

Note:

You must deinstall the upperstack components first, then deinstall JRF. After deinstalling the JRF, back up any remaining files and then delete all files in the directory. The installation directory must be empty.

Follow the instructions in this section to remove the software from the existing `ORACLE_HOME`. You will reinstall the new software into this same directory.

To start the Oracle Universal Installer in deinstallation mode, execute the following command:

UNIX: `ORACLE_HOME/oui/bin/deinstall.sh`

Windows: `ORACLE_HOME\oui\bin\deinstall.cmd`

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

Installing the 12c (12.2.1.4.0) Product Distributions for Oracle WebCenter

Before starting your upgrade, uninstall the software from the existing Oracle home, then use the Oracle Universal Installer to install the 12c (12.2.1.4.0) product distributions into the same Oracle home on the target system. You must install the product distributions on each host during the upgrade.



Note:

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

Before you begin, note the following:

- Ensure that you install only those product binaries that you have uninstalled. For example, if your 12c (12.2.1.3) Oracle home has WebCenter Content (WCC) and WebCenter Portal (WCP), uninstall them and install the product binaries for both 12c (12.2.1.4) WCC and WCP. Likewise, if the 12c (12.2.1.3) Oracle home has only WCC, uninstall and install only 12c (12.2.1.4) WCC.
- Use the same install path (Oracle home) for the installation of the new distributions that you used for the previous distributions that you uninstalled.

To install the 12c (12.2.1.4.0) distributions:

1. Sign in to the target system.
2. Download the applicable product distributions from [Oracle Technology Network](#) or [Oracle Software Delivery Cloud](#) to your target system:
 - Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.4.0_infrastructure.jar`)
 - Oracle WebCenter Content (`fmw_12.2.1.4.0_wccontent.jar`)
 - Oracle WebCenter Portal (`fmw_12.2.1.4.0_wcportal.jar`)
 - Oracle WebCenter Sites (`fmw_12.2.1.4.0_wcsites.jar`)
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. Start the installation program for Oracle Fusion Middleware Infrastructure:

- (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_infrastructure.jar`
- (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_infrastructure.jar`

After your Infrastructure installation is complete, you will install the remaining distributions the same way using the correct distribution names. For example, to start the installation program for Oracle WebCenter Content, use `fmw_12.2.1.4.0_wccontent_generic.jar` as the distribution name

5. On UNIX operating systems, the Installation Inventory Setup screen appears if this is the first time you are installing an Oracle product on this host.

Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location, and click **Next**.

 **Note:**

The Installation Inventory Setup screen does not appear on Windows operating systems.

6. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
7. On the Auto Updates screen, select an option:
 - **Skip Auto Updates:** If you do not want your system to check for software updates at this time.
 - **Select patches from directory:** To navigate to a local directory if you downloaded patch files.
 - **Search My Oracle Support for Updates:** To automatically download software updates if you have a My Oracle Support account. You must enter Oracle Support credentials then click **Search**. To configure a proxy server for the installer to access My Oracle Support, click **Proxy Settings**. Click **Test Connection** to test the connection.

Click **Next**.

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

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

9. On the Installation Type screen, select the products to install.

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

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

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

Click **Install** to begin the installation.

12. On the Installation Progress screen, when the progress bar displays 100%, click **Finish** to dismiss the installer, or click **Next** to see a summary.
13. The Installation Complete screen displays the Installation Location and the Feature Sets that are installed. Review this information and click **Finish** to close the installer.
14. After you have installed Oracle Fusion Middleware Infrastructure, repeat the steps above to install the other product distributions.

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 whether you need to take any action for a successful upgrade.

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 check during off-peak hours.

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 Parameters](#)

Upgrade Assistant Parameters

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

Table B-2 Upgrade Assistant Command-Line Parameters

Parameter	Required or Optional	Description
-readiness	Required for readiness checks Note: Readiness checks cannot be performed on standalone installations (those not managed by the WebLogic Server).	Performs the upgrade readiness check without performing an actual upgrade. Schemas and configurations are checked. Do not use this parameter if you have specified the <code>-examine</code> parameter.
-threads	Optional	Identifies the number of threads available for concurrent schema upgrades or readiness checks of the schemas. The value must be a positive integer in the range 1 to 8. The default is 4.
-response	Required for silent upgrades or silent readiness checks	Runs the Upgrade Assistant using inputs saved to a response file generated from the data that is entered when the Upgrade Assistant is run in GUI mode. Using this parameter runs the Upgrade Assistant in <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 <code>-readiness</code> parameter.
-logLevel <i>attribute</i>	Optional	Sets the logging level, specifying one of the following attributes: <ul style="list-style-type: none"> • TRACE • NOTIFICATION • WARNING • ERROR • INCIDENT_ERROR The default logging level is NOTIFICATION. 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.

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

Parameter	Required or Optional	Description
<code>-logDir <i>location</i></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 creates log files and temporary files.</p> <p>The default locations are:</p> <p>(UNIX)</p> <pre>ORACLE_HOME/ oracle_common/upgrade/ logs ORACLE_HOME/ oracle_common/upgrade/ temp</pre> <p>(Windows)</p> <pre>ORACLE_HOME\oracle_commo n\upgrade\logs ORACLE_HOME\oracle_commo n\upgrade\temp</pre>
<code>-help</code>	Optional	Displays all of the command-line options.

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 selected **Domain Based**: On the Component List screen, review the list of components that are present in your domain 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**.

 **Note:**

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** option and specify the **Schema Password**.

 **Note:**

The Upgrade Assistant automatically enables default credentials. If you are unable to connect, make sure that you manually enter the credentials for your schema before you continue.

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

4. On the Readiness Summary screen, review the summary of the readiness checks that will be 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.

Understanding the Readiness Report

After performing a readiness check for your domain, review the report to determine whether 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 B-3 Readiness Report Elements

Report Information	Description	Required Action
Overall Readiness Status: SUCCESS or FAILURE	The top of the report indicates whether the 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.
Log file location /oracle_common/upgrade/ logs	The directory location of the generated log file.	No action required.
Domain Directory	Displays the domain location	No action required.
Readiness report location /oracle_common/upgrade/ logs	The directory location of the generated readiness report.	No action required.

Table B-3 (Cont.) Readiness Report Elements

Report Information	Description	Required Action
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, 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, 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, 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 not include all of these checks.

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

```
This readiness check report was created on Fri Aug 16 13:29:41 PDT 2019
Log file is located at: /oracle/work/middleware_latest/oracle_common/
upgrade/logs/ua2019-08-16-13-23-36PM.log
Readiness Check Report File: /oracle/work/middleware_latest/
oracle_common/upgrade/logs/readiness2019-08-16-13-29-41PM.txt
Domain Directory: /oracle/work/middleware_1212/user_projects/domains/
jrf_domain
```

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

```
Oracle Platform Security Services
Starting readiness check of Oracle Platform Security Services.
Schema User Name: DEV3_OPSS
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_OPSS is currently at version 12.1.2.0.0.
Readiness checks will now be performed.
```

```

Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS
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 that the schema does not contain any
unexpected tables TEST_UNEXPECTED_TABLES
Completed schema test: Test that the schema does not contain any
unexpected tables --> TEST_UNEXPECTED_TABLES +++ Test that the schema does
not contain any unexpected tables
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 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: SEQUENCE_TEST Test that the Oracle Platform
Security Services schema sequence and its properties are valid
Completed schema test: SEQUENCE_TEST --> Test that the Oracle Platform
Security Services schema sequence and its properties are valid +++ PASS
Finished readiness check of Oracle Platform Security Services with
status: SUCCESS.

```

Oracle Audit Services

```

Starting readiness check of Oracle Audit Services.
Schema User Name: DEV3_IAU
Database Type: Oracle Database
Database Connect String:
VERSION Schema DEV3_IAU is currently at version 12.1.2.0.0. Readiness
checks will now be performed.
Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
Completed schema test: TEST_DATABASE_VERSION --> Test that the database
server version number is supported for upgrade +++ PASS

```

```
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_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_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 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_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_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 OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table OIDCOMPONENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_CUSTOM_01:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table IAU_BASE:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes +++ PASS
Starting datatype test for table WS_POLICYATTACHMENT:
TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the
proper datatypes
Completed datatype test for table WS_POLICYATTACHMENT:
```

```

TEST_COLUMN_DATATYPES_V2 --> Test that all table columns have the proper
datatypes +++ PASS
    Starting datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table OWSM_PM_EJB: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes
    Completed datatype test for table XMLPSEVER: TEST_COLUMN_DATATYPES_V2 --
> Test that all table columns have the proper datatypes +++ PASS
    Starting datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes
    Completed datatype test for table SOA_HCFP: TEST_COLUMN_DATATYPES_V2 -->
Test that all table columns have the proper datatypes +++ PASS
    Starting schema test: SEQUENCE_TEST Test that the audit schema sequence
and its properties are valid
    Completed schema test: SEQUENCE_TEST --> Test that the audit schema
sequence and its properties are valid +++ PASS
    Starting schema test: SYNONYMS_TEST Test that the audit schema required
synonyms are present
    Completed schema test: SYNONYMS_TEST --> Test that the audit schema
required synonyms are present +++ PASS
    Finished readiness check of Oracle Audit Services with status: FAILURE.
  
```

Common Infrastructure Services

```

    Starting readiness check of Common Infrastructure Services.
    Schema User Name: DEV3_STB
    Database Type: Oracle Database
    Database Connect String:
    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
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_TABLES +++ Test that
the schema contains all the required tables
    Starting schema test: TEST_UNEXPECTED_TABLES Test that the schema does
not contain any unexpected tables
    Completed schema test: ALL_TABLES --> TEST_UNEXPECTED_TABLES +++ Test
that the schema does not contain any unexpected tables
    Starting schema test: TEST_REQUIRED_VIEWS Test that the schema contains
all the required database views
    Completed schema test: ALL_TABLES --> TEST_REQUIRED_VIEWS +++ Test that
the schema contains all the required database views
    Starting schema test: TEST_MISSING_COLUMNS Test that tables and views
are not missing any required columns
    Completed schema test: ALL_TABLES --> TEST_MISSING_COLUMNS +++ Test that
tables and views are not missing any required columns
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    Starting schema test: TEST_DATABASE_VERSION Test that the database
server version number is supported for upgrade
    INFO Database product version: Oracle Database 12c Enterprise Edition
Release 12.1.0.2.0 - 64bit Production
    With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options
  
```

```
Completed schema test: TEST_DATABASE_VERSION --> Test that the
database server version number is supported for upgrade +++ PASS
Completed schema test: ALL_TABLES --> TEST_DATABASE_VERSION +++
Test that the database server version number is supported for upgrade
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Oracle JRF

```
Starting readiness check of Oracle JRF.
Finished readiness check of Oracle JRF with status: SUCCESS.
```

System Components Infrastructure

```
Starting readiness check of System Components Infrastructure.
Starting config test: TEST_SOURCE_CONFIG Checking the source
configuration.
INFO /oracle/work/middleware_1212/user_projects/domains/
jrf_domain/opmn/topology.xml was not found. No upgrade is needed.
Completed config test: TEST_SOURCE_CONFIG --> Checking the source
configuration. +++ PASS
Finished readiness check of System Components Infrastructure with
status: ALREADY_UPGRADED.
```

Common Infrastructure Services

```
Starting readiness check of Common Infrastructure Services.
Starting config test: CIEConfigPlugin.readiness.test This tests
the readiness of the domain from CIE side.
Completed config test: CIEConfigPlugin.readiness.test --> This
tests the readiness of the domain from CIE side. +++ PASS
Finished readiness check of Common Infrastructure Services with
status: SUCCESS.
```

Finished readiness check of components.

Upgrading Oracle WebCenter Schemas Using the Upgrade Assistant

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

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 the schema upgrade operation that you want to perform:

- **Individually Selected Schemas** if you want to select individual schemas for upgrade and you do not want to upgrade all of the schemas used by the domain.

 **Caution:**

Upgrade only those schemas that are used to support your 12c (12.2.1.4.0) components. Do not upgrade schemas that are currently being used to support components that are not included in Oracle Fusion Middleware 12c (12.2.1.4.0).

- **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.

 **Note:**

Oracle recommends that you select **All Schemas Used by a Domain** for most upgrades to ensure all of the required schemas are included in the upgrade.

Click **Next**.

3. If you selected **Individually Selected Schemas**: On the Available Components screen, select the components for which you want to upgrade schemas. When you select a component, the schemas and any dependencies are automatically selected.
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 Schema Credentials screen(s), specify the database connection details for each schema you are upgrading (the screen name changes based on the schema selected):
 - Select the database type from the **Database Type** drop-down menu.
 - Enter the database connection details, and click **Connect**.
 - Select the schema you want to upgrade from the **Schema User Name** drop-down menu, and then enter the password for the schema. Be sure to use the correct schema prefix for the schemas you are upgrading.

 **Note:**

The component ID or schema name is changed for UCSUMS schema as of release 12.1.2, which means the Upgrade Assistant does not automatically recognize the possible schemas and display them in a drop-down list. You must manually enter the name in a text field. The name can be either *prefix_ORASDPM* or *prefix_UMS*, depending on the starting point for the upgrade.

6. 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* 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.

7. On the Upgrade Summary screen, review the summary of the schemas that will be upgraded and/or created.

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 **Next**.

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 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**.

9. 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 `NEW_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.

Upgrading WebCenter Portal Domain Components

You can upgrade the WebCenter Portal domain components by using the Upgrade Assistant. For instructions, see Understanding the Component Configurations Upgrade in *Oracle Fusion Middleware Upgrading with the Upgrade Assistant*.

 **Note:**

Configuration upgrade is not applicable for WebCenter Content.

Upgrading WebCenter Sites Domain Components Using the Upgrade Assistant

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

When performing a reduced downtime upgrade for WebCenter Sites, you must run the Upgrade Assistant a second time to upgrade the component configurations. This step is not needed for the other WebCenter components.

To upgrade domain component configurations 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 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 WebCenter Sites Source Version screen, select **12.2.1.0.0 or Later** and click **Next**. This is the starting point of your upgrade.
6. (Clustered environment) If the Source environment is a Clustered environment, use the pack/unpack utility to apply the changes to other cluster members in the domain.

In Primary node, go to path of target environment and execute PACK command:

```
$ORACLE_HOME/oracle_common/common/bin
```

In Secondary cluster member nodes, go to target environment and execute UNPACK command:

```
$ORACLE_HOME/oracle_common/common/bin
```

- a. On each of the Secondary cluster member nodes, replace the Sites `config` folder with the one from the Primary node by copying the `$DOMAIN_HOME/wcsites/wcsites/config/` to each of the nodes from the Primary node.
- b. On each of the Secondary cluster member nodes, update the following files located at `DOMAIN_HOME/wcsites/wcsites/config/`:
 - host properties:
In this file, replace IP-Address details of Primary node with Secondary node details
 - `jbossTicketCacheReplicationConfig.xml`:

Update the `bind_addr` property with a valid host or IP address of Primary node with Secondary node details for this Secondary cluster node

 **Note:**

Oracle recommends changing the `multicastGroupPort` value to a unique value greater than 2048. Ensure that the multicast port used in `jbossTicketCacheReplicationConfig.xml` is the same on each node in the cluster but is different on other clusters running on the same network.

- `cas-cache.xml`:
If you are using IPv6 addressing, set `multicastGroupAddress` value to a valid IPv6 multicast address. This value must be the same for each node in the cluster. For example: `[ff0x:0:0:0:0:0:301]`.

Set the `timeToLive` parameter to a value appropriate for your environment (typically 1). The `timeToLive` field must be changed from the default value of 0 if the cluster members are not all collocated on the same machine. This field must be set based on the distribution of your clustered machines, as shown in the following table:

Table B-4 Description of the different values of the `timeToLive` field

<code>timeToLive</code> Value	Description
1	Multicast packets restricted to the same subnet.
32	Multicast packets restricted to the same site.
64	Multicast packets restricted to the same geographical region.
128	Multicast packets restricted to the same continent.
256	No restriction.

Repeat this step for `cs-cache.xml`, `linked-cache.xml`, and `ss-cache.xml` files.

 **Note:**

For all these 4-xml files(`cas-cache.xml`, `cs-cache.xml`, `linked-cache.xml`, and `ss-cache.xml`) the values of “`multicastGroupAddress`”, “`timeToLive`”, “`multicastGroupPort`” should be appropriate as per the Primary node

- On each of the Secondary cluster member node go to path `EXISTING_DOMAIN_HOME/bin` and modify `setStartupEnv.sh` file
 - Ensure `-Dsites.node=<Secondary cluster node name>`. If this parameter is not present then add this parameter
 - Ensure `-Dsites.config=<Folder Path containing wcs_properties.json file>`

 **Note:**

The `wcs_properties.json` file is shared among Primary and Secondary cluster member nodes, so the location path of this file should be the same for Primary and Secondary cluster member nodes.

7. 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* 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.

8. 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.

9. 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**.

10. If the configuration upgrade is successful, summary files are generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the source is a clustered environment, the summary details are generated for each cluster as follows:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs/
```

If the schema upgrade fails, you can review the logs for possible errors. The log file is generated at the following location:

```
NEW_ORACLE_HOME/oracle_common/upgrade/logs
```

Click **Close** to close the Upgrade Assistant.

Packing the Domain and Updating the Domain Properties

If you are upgrading WebCenter Sites or WebCenter Portal as part of your reduced downtime upgrade, then you will need to pack the domain from Host 1 and unpack it during the upgrade on Host 2. You will also need to update the configuration properties before you start the servers.

1. Pack the domain on the host where admin server resides (Host 1)
After you have completed a successful upgrade on Host 1, use the following command to pack the domain. Later you will unpack the domain to use on Host 2.

```
cd ORACLE_HOME/common/bin
```

```
./pack.sh -managed=true -domain=DOMAIN_HOME -template=wcdomaintemplate.jar -  
template_name=wc_domain_template
```

2. Update the `setStartupEnv.sh` with the appropriate WebCenter Sites configuration properties.

The `setStartupEnv.sh` is located in `DOMAIN_HOME\bin`.

Open the `setStartupEnv.sh` file in `"%STARTUP_GROUP%"=="WCSITES-MGD-SVR"` and update `SERVER_SYSTEM_PROPERTIES`.

For example, `:-Dsites.config=/u01/shared/wcsites/wcsites/config`

Make sure that the `WebCenter Sites.configuration` parameter is updated with appropriate value

Restarting Node Manager, Administration Server, Managed Servers and Components on Host 1

After the upgrade, you must restart the components, servers, and processes in the correct order.

Note:

The procedures in this section describe how to start servers and processes 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 Starting Administration and Managed Servers and Node Manager* in *Oracle Fusion Middleware Administering Oracle Fusion Middleware*.

The components must be started in the following order:

- Node Manager
- Administration Server
- Managed Server(s)
- System Components

Note:

If you are unable to successfully start any of the following components on Host 1, do not proceed with the upgrade on the remaining Hosts. You must first resolve the issues with the components on Host 1.

Note:

Windows Users Only: When restarting the servers on a Windows operating system, the upgraded domain might fail with a parsing exception. To fix this parsing error, add the property `"-Doracle.xml.schema/Ignore_Duplicate_components=true"` to the server startup script `setDomainEnv.cmd`.

Starting the Node Manager

To start Node Manager:

- Enter the following command:

(UNIX) `DOMAIN_HOME/bin/startNodeManager.sh`

(Windows) `DOMAIN_HOME\bin\startNodeManager.cmd`

Starting the Administration Server

To start the Administration Server:

1. Enter the following command:

(UNIX) `DOMAIN_HOME/bin/startWebLogic.sh`

(Windows) `DOMAIN_HOME\bin\startWebLogic.cmd`

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

Starting the Managed Servers

To start the Managed Servers:

1. Enter the following command:

(UNIX) `DOMAIN_HOME/bin/startManagedWebLogic.sh managed_server_name admin_url`

(Windows) `DOMAIN_HOME\bin\startManagedWebLogic.cmd managed_server_name admin_url`

2. When prompted, enter your user name and password.

Starting Component Processes

When you stopped the Administration Server, you also stopped the processes running in the Administration Server, including the WebLogic Server Administration Console and Fusion Middleware Control. After the upgrade, you will need to restart all of these processes.

1. Navigate to the `DOMAIN_HOME\bin` directory.
2. Execute the following script for each component

`/startComponent.sh component_name`

Performing the Upgrade on Host 2

Once you have completed the upgrade on host 1, perform the following steps on each additional host in your environment. Our standard topology example includes only two hosts, but you may have more.

- [Stopping the Components, Servers and Processes on Host 2](#)
You must stop the system components, managed servers and node manager running on Host 2.
- [Uninstalling the Software](#)
When performing a rolling upgrade, an empty directory is required for installing the new binaries prior to upgrading.
- [Installing the Software into the Existing Middleware Home](#)
Install the software into the empty Middleware home.
- [Unpacking the Domain on Each Additional Host](#)
After you have installed the new 12c (12.2.1.4.0) binaries into the same Fusion Middleware home on Host 2, you must copy the domain directory for the applicable

product (WebCenter Sites or WebCenter Portal) that you packed during the upgrade on Host 1.

- [Restarting the Managed Servers and Processes](#)
After the upgrade is complete on Host 2, restart the managed servers.

Stopping the Components, Servers and Processes on Host 2

You must stop the system components, managed servers and node manager running on Host 2.

Stop the system components first, followed by the managed server(s) and then the node manager. Failure to stop the components in the correct order may result in a failed upgrade.

Stopping System Components

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

```
DOMAIN_HOME\bin  
  
./stopComponent.sh component_name
```

Stopping the Managed Servers

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

1. Enter the following command:

```
(UNIX) DOMAIN_HOME/bin/stopManagedWebLogic.sh managed_server_name  
admin_url
```

```
(Windows)DOMAIN_HOME\bin\stopManagedWebLogic.cmd managed_server_name  
admin_url
```

2. When prompted, enter your user name and password.

Stop SOA servers and processes in this order:

Stopping the Node Manager

To stop Node Manager, close the command shell/prompt 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.

Uninstalling the Software

When performing a rolling upgrade, an empty directory is required for installing the new binaries prior to upgrading.



Note:

You must deinstall the upperstack components first, then deinstall JRF. After deinstalling the JRF, back up any remaining files and then delete all files in the directory. The installation directory must be empty.

Follow the instructions in this section to remove the software from the existing `ORACLE_HOME`. You will reinstall the new software into this same directory.

To start the Oracle Universal Installer in deinstallation mode, execute the following command:

UNIX: `ORACLE_HOME/oui/bin/deinstall.sh`

Windows: `ORACLE_HOME\oui\bin\deinstall.cmd`

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

Installing the Software into the Existing Middleware Home

Install the software into the empty Middleware home.

Uninstall the software from the existing Oracle home before installing the 12c (12.2.1.4.0) product distributions. Install the software using the same process you used to install on Host 1.

When upgrading Oracle WebCenter Sites, unpack the domain and copy the config directory from Host 1 to Host 2.

Unpacking the Domain on Each Additional Host

After you have installed the new 12c (12.2.1.4.0) binaries into the same Fusion Middleware home on Host 2, you must copy the domain directory for the applicable product (WebCenter Sites or WebCenter Portal) that you packed during the upgrade on Host 1.

```
cd ORACLE_HOME/common/bin
```

```
./unpack.sh -domain=DOMAIN_HOME -template=wcdomaintemplate.jar -  
overwrite_domain=true
```

Restarting the Managed Servers and Processes

After the upgrade is complete on Host 2, restart the managed servers.

To start the Managed Servers:

1. Enter the following command:

```
(UNIX) DOMAIN_HOME/bin/startManagedWebLogic.sh  
managed_server_name admin_url
```

```
(Windows) DOMAIN_HOME\bin\startManagedWebLogic.cmd  
managed_server_name admin_url
```

2. When prompted, enter your user name and password.

Validating the Upgrade

After you have completed the upgrade on all hosts, complete the standard upgrade verification tasks to ensure that all components will continue to work as expected.

See [Tasks to Perform After Upgrade](#).

Note:

Only perform those tasks that pertain to your environment, configuration and preferences. These tasks are meant to assist you in verifying that the upgrade was successful. You may need to perform additional testing based on your configuration.

Recovering from a Failed Upgrade

If your upgrade is unsuccessful, you will need to restore your environment from backup. Make sure that you include your backed up configuration and script files. Restore the backup of the Oracle home (on all of the nodes), the entire domain directory (on all of the nodes) and component schemas. In addition, you will need to restore any UI customizations and the applications directory, in addition to domain directory.