

# Oracle® Fusion Middleware

## Upgrading Oracle Access Manager



12c (12.2.1.4.0)

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The Oracle logo, consisting of the word "ORACLE" in white, uppercase letters, centered within a solid red square.

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Oracle Fusion Middleware Upgrading Oracle Access Manager, 12c (12.2.1.4.0)

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# Contents

## Preface

---

Audience	vi
Documentation Accessibility	vi
Diversity and Inclusion	vi
Related Documents	vii
Conventions	vii

## 1 Introduction to Upgrading Oracle Access Manager to 12c (12.2.1.4.0)

---

About the Starting Points for a Oracle Access Manager Upgrade	1-2
About the Oracle Access Manager Upgrade Scenarios	1-2
About the New Features for Oracle Access Manager 12c (12.2.1.4.0)	1-3
About Upgrade Restrictions	1-3
Terminology Used in this Guide	1-4
How to Use This Guide	1-5

## 2 Pre-Upgrade Requirements

---

Oracle Fusion Middleware Pre-Upgrade Checklist	2-1
Creating a Complete Backup	2-2
Maintaining Customized Domain and Environment Settings	2-2
Validating the Keystore Files	2-3
Shutting Down the Node Managers	2-4

## Part I In-Place Upgrade of Oracle Access Manager

---

### 3 Upgrading Oracle Access Manager Single Node Environments

---

About the Oracle Access Manager Single Node Upgrade Process	3-1
Completing the Pre-Upgrade Tasks for Oracle Access Manager	3-2
Checking the Supported Starting Point for Oracle Access Manager Upgrade	3-2
Stopping Servers and Processes	3-3

Uninstalling the Software	3-5
Starting the Uninstall Wizard	3-5
Selecting the Product to Uninstall	3-5
Navigating the Uninstall Wizard Screens	3-6
Installing Product Distributions	3-7
Reconfiguring a WebLogic Domain	3-9
Starting the Servers on an OAMHOST	3-10
Starting Servers and Processes	3-10

## 4 Upgrading Oracle Access Manager Highly Available Environments

---

About the Oracle Access Manager Multinode Upgrade Process	4-1
Backing up the 12c (12.2.1.3.0) Middleware Home Folder on OAMHOSTs	4-3
Stopping Servers and Processes	4-4
Uninstalling the Software on an OAMHOST	4-6
Starting the Uninstall Wizard	4-6
Selecting the Product to Uninstall	4-6
Navigating the Uninstall Wizard Screens	4-7
Installing Product Distributions on OAMHOSTs	4-8
Installing Product Distributions	4-9
Starting the Servers on OAMHOSTs	4-11
Starting Servers and Processes	4-12

## 5 Upgrading Oracle Access Manager Multi-Data Center Environments

---

About the Oracle Access Manager Multi-Data Center Topology	5-2
Roadmap for Upgrading Oracle Access Manager MDC Setup	5-3
Backing Up the Existing MDC Environment	5-4
Enabling Write Permission to Primary and Clones (If Necessary)	5-4
Disabling and Deleting All Replication Agreements Between Primary and Clone	5-5
Redirecting Traffic to Primary Data Center	5-5
Upgrading Oracle Access Manager on Clone Data Center	5-5
Redirecting Traffic to Clone Data Center	5-5
Upgrading Oracle Access Manager on Primary Data Center	5-5
Freezing all Changes to Clones (if Necessary)	5-6
Syncing Access Metadata	5-6
Creating Replication Agreement	5-6
Bringing up the Primary and Clone Data Centers Online	5-7

## Part II Out-of-Place Cloned Upgrade of Oracle Access Manager

---

## 6 Cloning Oracle Access Manager Environment

---

Cloning the Database	6-1
Cloning the Database Using the Export/Import Method	6-1
Cloning the 11g Environment Using the Test-To-Production (T2P) Process	6-4
Cloning the Oracle Binaries	6-5
Using Backup/Restore Tools to Clone the Access Domain	6-5
Cloning the Access Domain	6-7
Using Backup/Restore Tools to Clone the Access Domain	6-7
Starting the OAM Domain	6-9
Cloning Using the Test-To-Production (T2P) Process	6-9

## 7 Upgrading OAM Using the Snapshot Tool

---

### A Troubleshooting the Oracle Access Manager Upgrade

---

Troubleshooting OAM During the Upgrade	A-1
Load Balancer Value Changes During the Upgrade	A-1
Troubleshooting OAM After the Upgrade	A-1
OAM Version Shows 12.2.1.3 in the Config.xml File	A-1
OAM Version Shows 12.2.1.3 in the EM Console	A-2

### B Upgrade Scenarios for OAM

---

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

---

About Updating the JDK Location After Installing an Oracle Fusion Middleware Product	C-1
Updating the JDK Location in an Existing Oracle Home	C-2
Updating the JDK Location in an Existing Domain Home	C-3

# Preface

This document describes how to upgrade the 12c (12.2.1.3.0) Oracle Access Manager 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](#)
- [Conventions](#)  
Learn about the conventions used in this document.

## Audience

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

This document is intended for system administrators who are responsible for installing, maintaining, and upgrading Oracle Access Manager. 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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initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

## Related Documents

Refer to the Oracle Fusion Middleware Library for additional information.

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

## Conventions

Learn about the conventions used in this document.

This document uses the following text conventions:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	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 Upgrading Oracle Access Manager to 12c (12.2.1.4.0)

Before you begin, review all introductory information to understand the standard upgrade topologies and upgrade paths for Oracle Access Manager 12c (12.2.1.4.0).



### Note:

The product Oracle Identity Manager is referred to as Oracle Identity Manager (OIM) and Oracle Identity Governance (OIG) interchangeably in the guide.



### Note:

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

- [Planning an Upgrade to Oracle Fusion Middleware 12c \(12.2.1.4.0\)](#)
- [Understanding In-Place versus Out-of-Place Upgrades](#)
- [Understanding the Basic Upgrade Tasks](#)

The following topics describe the concepts related to upgrading Oracle Access Manager:

- [About the Starting Points for a Oracle Access Manager Upgrade](#)  
You can upgrade to Oracle Access Manager 12c (12.2.1.4.0) from a supported 12c release.
- [About the Oracle Access Manager Upgrade Scenarios](#)  
The steps to upgrade Oracle Access Manager to 12c (12.2.1.4.0) depend on the existing 12c (12.2.1.3.0) production topology.
- [About the New Features for Oracle Access Manager 12c \(12.2.1.4.0\)](#)  
Several changes have been made to Oracle Access Manager between 12c (12.2.1.3.0) and 12c (12.2.1.4.0).
- [About Upgrade Restrictions](#)  
If you are using two or more Oracle Fusion Middleware products of the same or different versions in a single, supported, Oracle Fusion Middleware configuration, you must consider the interoperability and compatibility factors before planning the upgrade.
- [Terminology Used in this Guide](#)  
For consistency, the following terminology is used in this guide.
- [How to Use This Guide](#)  
This guide covers various upgrade scenarios.



## About the Starting Points for a Oracle Access Manager Upgrade

You can upgrade to Oracle Access Manager 12c (12.2.1.4.0) from a supported 12c release.

The supported starting point for upgrading Oracle Access Manager to 12c (12.2.1.4.0) is Oracle Access Manager 12c (12.2.1.3.0).

If you are not using the 12c (12.2.1.3.0) version of Oracle Access Manager, you must upgrade to 12c (12.2.1.3.0) before you move to 12c (12.2.1.4.0). For instructions to upgrade Oracle Access Manager 12c (12.2.1.3.0) from a supported 11g release, see [Introduction to Upgrading Oracle Access Manager to 12c \(12.2.1.3.0\)](#).

### Note:

The upgrade of an SSL enabled installation of Oracle Access Manager 12c (12.2.1.3.0) to Oracle Access Manager 12c (12.2.1.4.0) is not supported in this release.

The upgrade procedures in this guide explain how to upgrade an existing Oracle Access Manager 12c domain to Oracle Access Manager 12c (12.2.1.4.0). If your domain contains other components, you will have to upgrade those components as well.

## About the Oracle Access Manager Upgrade Scenarios

The steps to upgrade Oracle Access Manager to 12c (12.2.1.4.0) depend on the existing 12c (12.2.1.3.0) production topology.

Oracle Access Manager can be deployed in a number of different ways. This upgrade documentation provides instructions for the common deployment topologies. However, it can be used as a guide for the less common deployment topologies as well.

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

### Note:

For additional information about the upgrade process and planning resources to ensure your upgrade is successful, see [Preparing to Upgrade in \*Planning an Upgrade of Oracle Fusion Middleware\*](#).

You can upgrade the following topologies or deployments using the procedure described in this guide:

- [Single node environments](#)
- [Highly available \(multinode\) environments](#)

- [Oracle Access Manager Multi-data center setup](#)



**Note:**

If you are using Oracle Access Manager Mobile and Social, read about the features not supported in this release of OAM before considering an upgrade to 12c (12.2.1.4.0). See [Features Not Supported in Access Manager 12.2.1.4.0](#).

## About the New Features for Oracle Access Manager 12c (12.2.1.4.0)

Several changes have been made to Oracle Access Manager between 12c (12.2.1.3.0) and 12c (12.2.1.4.0).

To understand what's new in general in 12c (12.2.1.4.0), see [New and Changed Features in Understanding Oracle Fusion Middleware](#).

If your environment includes Oracle WebLogic Server with Oracle ADF, see [Key Differences Between Application Developer 11g and Infrastructure 12c \(12.2.1.4.0\)](#).

For information about Oracle Access Manager 12c (12.2.1.4.0), and its features, see the following topics in [Administering Oracle Identity Governance](#):

- [Understanding Oracle Access Management Services](#)
- [Understanding Oracle Access Management Access Manager](#)

For more information about new features in Oracle Access Manager 12c (12.2.1.4.0), see [What's New in Oracle Access Management in the Release Notes for Oracle Identity Management](#).

## About Upgrade Restrictions

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

### Interoperability

In the context of Oracle Fusion Middleware products, Interoperability is defined as the ability of two Oracle Fusion Middleware products or components of the same version (or release) to work together (interoperate) in a supported Oracle Fusion Middleware configuration. Specifically, interoperability applies when the first 4 digits of the release or version number are the same. For example, Oracle Fusion Middleware 12c (12.2.1.4.0) components are generally interoperable with other 12c (12.2.1.4.0) components. See [Interoperability with Oracle Identity Management Products](#).

**Note:**

Exporting and importing OAM policies from other releases by using tools such as `exportPolicy`, `importPolicy`, and so on, is not certified. An upgrade is the only supported path to move policies from one release to another.

**Compatibility**

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

For a list of products and features available in Oracle Fusion Middleware Release 12.2.1.4.0, see Products and Features Available in Oracle Fusion Middleware 12c (12.2.1.4.0) in *Understanding Interoperability and Compatibility*.

## Terminology Used in this Guide

For consistency, the following terminology is used in this guide.

**Table 1-1 Terminology**

Information	Example Value	Description
<code>JAVA_HOME</code>	<code>/home/Oracle/Java/jdk1.8.0_211</code>	Environment variable that points to the Java JDK home directory.
Database host	<code>examplehost.exampledomain</code>	Name and domain of the host where the database is running.
Database port	1521	Port number that the database listens on. The default Oracle database listen port is 1521.
Database service name	<code>orcl.exampledomain</code>	Oracle databases require a unique service name. The default service name is <code>orcl</code> .
DBA username	FMW	Name of user with database administration privileges. The default DBA user on Oracle databases is <code>SYS</code> .
DBA password	<code>&lt;dba_password&gt;</code>	Password of the user with database administration privileges.
<code>ORACLE_HOME</code>	<code>/u01/app/fmw/</code> <code>ORACLE_HOME</code>	12c directory in which you will install your software. This directory will include Oracle Fusion Middleware Infrastructure and Oracle Access Manager, as needed.
Console port	7001	Port for Oracle WebLogic Server and Oracle Access Manager consoles.

**Table 1-1 (Cont.) Terminology**

Information	Example Value	Description
<i>DOMAIN_HOME</i>	/home/Oracle/config/ domains/idm_domain	Location in which your domain data is stored. <b>Note:</b> This is the domain where the primary Administration server is configured.
<i>APPLICATION_HOME</i>	/home/Oracle/config/ applications/idm_domain	Location in which your application data is stored.
Administrator user name for your WebLogic domain	weblogic	Name of the user with Oracle WebLogic Server administration privileges. The default administrator user is weblogic.
Administrator user password	<admin_password>	Password of the user with Oracle WebLogic Server administration privileges.
RCU	ORACLE_HOME/ oracle_common/bin	Path to the Repository Creation Utility (RCU).
RCU schema prefix	oam	Prefix for names of database schemas used by Oracle Access Manager.
RCU schema password	<rcu_password>	Password for the database schemas used by Oracle Access Manager.
Configuration utility	ORACLE_HOME/ oracle_common/ common/bin	Path to the Configuration Wizard for domain creation and configuration.

## How to Use This Guide

This guide covers various upgrade scenarios.

Depending on your existing 12c (12.2.1.3.0) deployment, refer to the respective topics for upgrading Oracle Identity and Access Management to 12c (12.2.1.4.0):

- **Single Node Environments**  
For upgrading single node Oracle Access Manager (OAM) setup, see [Upgrading Oracle Access Manager Single Node Environments](#).
- **Multi-node or Highly Available Environments**
  - For upgrading multi-node Oracle Access Manager setup, see [Upgrading Oracle Access Manager Highly Available Environments](#).
  - For upgrading Oracle Access Manager multi-data center setup, see [Upgrading Oracle Access Manager Multi-Data Center Environments](#).

 **Note:**

Before you begin the upgrade, ensure that you review the [Pre-Upgrade Requirements](#) and perform necessary pre-upgrade tasks.

# 2

## Pre-Upgrade Requirements

Before you begin to upgrade Oracle Access Manager 12c (12.2.1.4.0), you must perform pre-upgrade tasks such as backing up, creating a replica of your current environment, and verifying that your system meets certified requirements.

- [Oracle Fusion Middleware Pre-Upgrade Checklist](#)  
Perform the tasks in this checklist before you begin any upgrade to ensure 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 Oracle home, Domain home, and databases that host your Oracle Fusion Middleware schemas.
- [Validating the Keystore Files](#)
- [Shutting Down the Node Managers](#)  
Ensure that you have shut down all the local and remote Node Managers before starting the upgrade process.

### Oracle Fusion Middleware Pre-Upgrade Checklist

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

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

#### Note:

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

Ensure that Oracle Identity Manager and Oracle Access Manager are in different domains. If they are in the same domain, then you need to separate them into multiple domains. For more information, see [Separating Oracle Identity Management Applications Into Multiple Domains](#).

**Table 2-1 Tasks to Perform Before You Upgrade to Oracle Fusion Middleware 12c (12.2.1.4.0)**

Task	Description
<b>Required</b> Create a complete backup of your existing environment.	Back up all system-critical files and database(s) that contain any schemas that are to be upgraded. If the upgrade fails, you must restore your pre-upgrade environment and begin the upgrade again.  See <a href="#">Creating a Complete Backup</a> .  If you modified any of the startup scripts in your existing domain, you will need to copy them to temporary directory location (outside of the existing domain) during the upgrade and redeploy them after the upgrade. See <a href="#">Maintaining Customized Domain and Environment Settings</a> .
<b>Required</b> Ensure that the keystore files are valid.	See <a href="#">Validating the Keystore Files</a> .
<b>Optional</b> Shut down all the local and remote Node Managers before starting the upgrade process.	See <a href="#">Shutting Down the Node Managers</a> .

## Creating a Complete Backup

Before you start an upgrade, back up all system-critical files, including the Oracle home, Domain home, and 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.

See:

- [Backing Up Your Environment in \*Administering Oracle Fusion Middleware\*](#)
- [Upgrading and Preparing Your Oracle Databases for 12c \(12.2.1.4.0\) in \*Planning an Upgrade of Oracle Fusion Middleware\*](#)
- [Oracle Database Documentation](#) for information about upgrading to Oracle Database 18c and 19c.
- [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, and reconfiguration operations. Oracle recommends you to take a backup of the the customized files to a shared library location. In case of any failure or issues during the upgrade process, you can restore these files, if required.

## 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, and reconfiguration operations. Oracle recommends you to take a backup of the the customized files to a shared library location. In case of

any failure or issues during the upgrade process, you can restore these files, if required.

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.

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 `DOMAIN_HOME/bin` directory.



#### Note:

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

## Validating the Keystore Files

Before performing the upgrade, ensure that the following keystore files are valid and are not in a corrupted state:

- `oamkeystore.jks`  
Use this command to validate the file:

```
keytool -list -keystore $DOMAIN_HOME/config/fmwconfig/.oamkeystore -
storepass
xxx -storetype jceks
```

- `Default-keystore.jks`



Use this command to validate the file:

```
keytool -list -keystore $DOMAIN_HOME/config/fmwconfig/default-  
keystore.jks  
-storepass xxx -storetype jceks
```



**Note:**

Do not start the upgrade if there is an issue in any of these keystore files.

## Shutting Down the Node Managers

Ensure that you have shut down all the local and remote Node Managers before starting the upgrade process.

The Node Managers should remain shut down until you start the WebLogic Administration Server after completing the upgrade. When the WebLogic Administration Server is up and running, start the Node Managers, followed by the Managed Servers.

# Part I

## In-Place Upgrade of Oracle Access Manager

You can perform an in-place upgrade of Oracle Access Manager single node deployments, highly available environments, and Oracle Access Manager in a Multi-Data Center setup by using the procedures described in this part.

This part contains the following topics:

- [Upgrading Oracle Access Manager Single Node Environments](#)  
You can upgrade Oracle Access Manager from Release 12c (12.2.1.3.0) to Oracle Access Manager 12c (12.2.1.4.0) .
- [Upgrading Oracle Access Manager Highly Available Environments](#)  
Describes the process of upgrading an Oracle Access Manager highly available environments from 12c (12.2.1.3.0) to 12c (12.2.1.4.0).
- [Upgrading Oracle Access Manager Multi-Data Center Environments](#)  
You can upgrade Oracle Access Manager deployed across multi-data centers (MDC) from 12c (12.2.1.3.0) to 12c (12.2.1.4.0).

# 3

## Upgrading Oracle Access Manager Single Node Environments

You can upgrade Oracle Access Manager from Release 12c (12.2.1.3.0) to Oracle Access Manager 12c (12.2.1.4.0) .



### Note:

If you are using an earlier version of Oracle Access Manager, you must upgrade to Oracle Access Manager 12c (12.2.1.3.0) first, and then to 12c (12.2.1.4.0).

Complete the steps in the following topics to perform the upgrade:

- [About the Oracle Access Manager Single Node Upgrade Process](#)  
Review the roadmap for an overview of the upgrade process for Oracle Access Manager single node deployments.
- [Completing the Pre-Upgrade Tasks for Oracle Access Manager](#)  
Complete the pre-upgrade tasks described in this section before you upgrade Oracle Access Manager.
- [Stopping Servers and Processes](#)  
Before you upgrade the configurations, you must shut down all of the pre-upgrade processes and servers, including the Weblogic Admin, Managed, and Node Manager servers that are running on the intended OAMHOST.
- [Uninstalling the Software](#)  
Follow the instructions in this section to start the Uninstall Wizard and remove the software.
- [Installing Product Distributions](#)
- [Reconfiguring a WebLogic Domain](#)  
To reconfigure a domain using the Reconfiguration Wizard, you first launch it from a DOS command prompt or UNIX shell, and then provide the required upgrade details in a sequence of screens that are displayed.
- [Starting the Servers on an OAMHOST](#)  
After you upgrade Oracle Access Manager on an OAMHOST, start the servers.

## About the Oracle Access Manager Single Node Upgrade Process

Review the roadmap for an overview of the upgrade process for Oracle Access Manager single node deployments.

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

**Table 3-1 Tasks for Upgrading Single Node Oracle Access Manager Deployments**

Task	Description
<p><b>Required</b> If you have not done so already, review the introductory topics in this guide and complete the required pre-upgrade tasks.</p>	<p>See:</p> <ul style="list-style-type: none"> <li>• <a href="#">Introduction to Upgrading Oracle Access Manager to 12c (12.2.1.4.0)</a></li> <li>• <a href="#">Pre-Upgrade Requirements</a></li> </ul>
<p><b>Required</b> Complete the necessary pre-upgrade tasks specific to Oracle Access Manager.</p>	<p>See <a href="#">Completing the Pre-Upgrade Tasks for Oracle Access Manager</a>.</p>
<p><b>Required</b> Shut down the 12c environment (stop all Administration and Managed Servers). Ensure that the Database is up during the upgrade.</p>	<p><b>WARNING:</b> Failure to shut down your servers during an upgrade may lead to data corruption. See <a href="#">Stopping Servers and Processes</a>.</p>
<p><b>Required</b> Uninstall Oracle Fusion Middleware Infrastructure and Oracle Access Manager 12c (12.2.1.3.0) in the existing Oracle home.</p>	<p>See <a href="#">Uninstalling the Software</a>.</p>
<p><b>Required</b> Install Fusion Middleware Infrastructure and Oracle Access Manager 12c (12.2.1.4.0) in the existing Oracle home.</p>	<p>Install Fusion Middleware Infrastructure and Oracle Access Manager in the same Oracle home on the same host as the 12c (12.2.1.3.0) production deployment before you begin the upgrade. In 12c (12.2.1.4.0), Oracle home is used to describe the 12c Middleware home. See <a href="#">Installing Product Distributions</a>.</p>
<p><b>Required</b> Start the node manager, administration server, and managed servers.</p>	<p>See <a href="#">Starting the Servers on an OAMHOST</a>.</p>

## Completing the Pre-Upgrade Tasks for Oracle Access Manager

Complete the pre-upgrade tasks described in this section before you upgrade Oracle Access Manager.

- [Checking the Supported Starting Point for Oracle Access Manager Upgrade](#)  
The Oracle Access Manager version that is supported for upgrade is 12c (12.2.1.3.0).

### Checking the Supported Starting Point for Oracle Access Manager Upgrade

The Oracle Access Manager version that is supported for upgrade is 12c (12.2.1.3.0).

If you are using an earlier version of Oracle Access Manager, you must upgrade to Oracle Access Manager 12c (12.2.1.3.0) first, and then to 12c (12.2.1.4.0).

# Stopping Servers and Processes

Before you upgrade the configurations, you must shut down all of the pre-upgrade processes and servers, including the Weblogic Admin, Managed, and Node Manager servers that are running on the intended OAMHOST.

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.
- Stop all of the servers in your deployment, except for the Database. The Database must be up during the upgrade process.

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

Depending on the method you followed to start the managed servers, follow one of the following methods to stop the WebLogic Managed Server:

**Method 1:** To stop a WebLogic Server Managed Server not managed by Node Manager:

- (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.

**Method 2:** To stop a WebLogic Server Managed Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required managed server.
- Click **Shutdown**.

**Method 3:** To stop a WebLogic Server Managed Server using node manager, run the following commands:

```
wls:/offline>nmConnect('nodemanager_username','nodemanager_password',  
                      'AdminServerHostName','5556','domain_name',
```

```
'DOMAIN_HOME','nodemanager_type')
```

```
wls:/offline>nmKill('ManagedServerName')
```

## Step 2: 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.

Follow one of the these methods to stop the Administration Server:

**Method 1:** To stop the Administration Server not managed by Node Manager:

- (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.

**Method 2:** To stop the Administration Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required admin server.
- Click **Shutdown**.

**Method 3:** To stop a WebLogic Server Managed Server using Node Manager, run the following commands:

```
wls:/offline>nmConnect('nodemanager_username','nodemanager_password',  
    'AdminServerHostName','5556','domain_name',  
    'DOMAIN_HOME','nodemanager_type')
```

```
wls:/offline>nmKill('AdminServer')
```

## Step 3: Stop Node Manager

To stop Node Manager, run the following command:

```
kill $(ps -ef | grep nodemanager | awk '{print $2}')
```

## Step 4: Validate if any WLS components are running

To validate if any WLS components, like, Administration Server, Managed Server, or Node Manager are running, run the following command:

```
$ ps -ef |grep java
```

The output must return only the grep process.

For example:

```
oracle  14709 14410  0 19:07  
pts/0   00:00:00 grep --color=auto java
```

If any other java process is listed other than the above grep command, they identify and stop the listed java process.

## Uninstalling the Software

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

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

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

## Starting the Uninstall Wizard

Start the Uninstall Wizard:

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

## Selecting the Product to Uninstall

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

After you run the Uninstall Wizard, the Distribution to Uninstall screen opens.

From the drop-down menu, select the **Oracle Fusion Middleware 12c (12.2.1.3.0) Identity and Access Management** product and click **Uninstall**.

### Note:

The Uninstall Wizard displays the Distribution to Uninstall screen only if it detects more than one product distribution in the Oracle home from where you initiate the wizard. If only **Oracle Fusion Middleware 12c (12.2.1.3.0) Identity and Access Management** product distribution is available, the Uninstall Wizard will display the Deinstallation Summary screen.

### Note:

Do not select **Weblogic Server for FMW 12.2.1.3.0**.

The uninstallation program shows the screens listed in [Navigating the Uninstall Wizard Screens](#).

 **Note:**

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

## Navigating the Uninstall Wizard Screens

The Uninstall Wizard shows a series of screens to confirm the removal of the software.

If you need help on screen listed in the following table, click **Help** on the screen.

**Table 3-2 Uninstall Wizard Screens and Descriptions**

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

 **Note:**

- Repeat these steps for uninstalling **Weblogic Server for FMW 12.2.1.3.0**. You will be reinstalling the Oracle binaries into the same `ORACLE_HOME` location.
- After the product is uninstalled, ensure that the `ORACLE_HOME` folder exists. During the initial 12.2.1.3.0 install, if the default location was `ORACLE_HOME`, that is `/user_projects`, then the `domain-registry.xml` file will reside in `ORACLE_HOME`.

Complete the following steps to clean this directory:



1. After both OAM and WLS are uninstalled, run the following command:

```
$ ls -al
```

Following is an example of the output:

```
total 28
drwxr-x---. 6 <USER> <GROUP> 4096 Apr  2 20:27 .
drwxr-x---. 6 <USER> <GROUP> 4096 Jul  9 2019 ..
drwxr-x---. 5 <USER> <GROUP> 4096 Mar 23 17:48 cfgtoollogs
-rw-r-----. 1 <USER> <GROUP>  225 Jul  9 2019 domain-registry.xml
drwxr-x---. 7 <USER> <GROUP> 4096 Mar 26 17:12 .patch_storage
drwxr-x---. 4 <USER> <GROUP> 4096 Jul  9 2019 user_projects
drwxr-x---. 3 <USER> <GROUP> 4096 Apr  2 20:26 wlserver
```

2. Go to the `ORACLE_HOME` location. If the `user_projects` directory and the `domain-registry.xml` file are present, take their backup. They need to be restored after the upgrade is complete. After taking the backup, delete all the files in `ORACLE_HOME`.

## Installing Product Distributions

### 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:
  - If you not yet installed Oracle Fusion Middleware Infrastructure, then download Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.4.0_infrastructure.jar`)
  - Oracle Identity and Access Management 12cPS4 (`fmw_12.2.1.4.0_idm_Disk1_lofl.zip`, which contains `fmw_12.2.1.4.0_idm.jar`) from OTN or Oracle Fusion Middleware 12c (12.2.1.4.0) Identity and Access Management from Oracle Software Delivery Cloud.
  - Any additional distributions for your pre-upgrade environment
3. Change to the directory where you downloaded the 12c (12.2.1.4.0) product distribution.
4. If you have already installed Oracle Fusion Middleware Infrastructure (`fmw_12.2.1.4.0_infrastructure.jar`), go to [step 15](#).
5. Start the installation program for Oracle Fusion Middleware Infrastructure.

Run the following commands:

- (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`

 **Note:**

Restore the `user_projects` directory and the `domain-registry.xml` file from the backup taken during the cleaning up of the *Oracle\_Home* directory, as part of the 12c (12.2.1.3.0) OAM uninstallation process.

6. If your existing 12c (12.2.1.3.0) `DOMAIN_HOME` resides within the 12c (12.2.1.3.0) Oracle home directory, do the following:
  - a. Go to the 12c (12.2.1.3.0) Oracle home backup location.  
For example: `/u01/app/fmw/ORACLE_HOME_old/`
  - b. Copy the `user_projects` folder.
  - c. Go to the new installed 12c (12.2.1.4.0) Oracle home location.  
For example: `/u01/app/fmw/ORACLE_HOME/`
  - d. Paste the copied `user_projects` folder.
7. 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.

8. On the Welcome screen, review the information to make sure that you have met all the prerequisites. Click **Next**.
9. 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**.
10. 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*.
11. On the Installation Type screen, select **Fusion Middleware Infrastructure**.  
  
Click **Next**.

12. 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).

13. 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.

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

15. 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.

16. After you have installed Oracle Fusion Middleware Infrastructure, enter the following command to start the installer for Oracle Access Manager 12c (12.2.1.4.0) and repeat the steps above to navigate through the installer screens:

 **Note:**

On the Installation Type screen, for Oracle Access Manager, select **Collocated Oracle Identity and Access Manager**.

- (UNIX) `JDK_HOME/bin/java -jar fmw_12.2.1.4.0_idm.jar`
- (Windows) `JDK_HOME\bin\java -jar fmw_12.2.1.4.0_idm.jar`

 **Note:**

For more information about installing Oracle Access Manager 12c (12.2.1.4.0), see *Installing and Configuring the Oracle Access Manager Software in the Installing and Configuring Oracle Identity and Access Management*.

## Reconfiguring a WebLogic Domain

To reconfigure a domain using the Reconfiguration Wizard, you first launch it from a DOS command prompt or UNIX shell, and then provide the required upgrade details in a sequence of screens that are displayed.

To start the Reconfiguration Wizard in graphical mode from a Windows command prompt or on UNIX systems:

1. Log in to the system on which the domain resides.
2. Open an MS-DOS command prompt window (on Windows) or a command shell (on UNIX).

3. Go to the following directory, where `ORACLE_HOME` is your Oracle home directory:  
On Windows: `ORACLE_HOME\oracle_common\common\bin`  
On UNIX: `ORACLE_HOME/oracle_common/common/bin`
4. Run the following commands:  
On Windows: `reconfig.cmd`  
On UNIX: `sh reconfig.sh`

The Reconfiguration Setup Progress screen appear. Click **Cancel** when the progress bar reaches 100%. At this stage the `config.xml` file is updated though the **Finish** button is not enabled.

## Starting the Servers on an OAMHOST

After you upgrade Oracle Access Manager on an OAMHOST, start the servers.

You must start the servers in the following order:



### Note:

Prior to starting the Administration Server, download Patch 30729380 from My Oracle Support and apply using OPatch, to the OAM node and any other WLS node in the cluster.

1. Start the Node Manager on the required OAMHOST.
  2. Start the Administration Server on the required OAMHOST.
  3. Start the Oracle Access Manager Managed Servers on the required OAMHOST.
- [Starting Servers and Processes](#)  
After a successful upgrade, start all processes and servers, including the Administration Server and any Managed Servers.

## Starting Servers and Processes

After a successful upgrade, start 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 Node Manager

Starting the Node Manager in the Administration Server domain home:

- (UNIX) `nohup ./startNodeManager.sh > DOMAIN_HOME/nodemanager/nodemanager.out 2>&1 &`
- (Windows) `nohup .\startNodeManager.sh > DOMAIN_HOME\nodemanager\nodemanager.out 2>&1 &`

### Step 2: 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 3: Start the Managed Servers

**Method 1:** Start a WebLogic Server Managed Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required managed server.
- Click **Start**.

**Method 2:** Start a WebLogic Server Managed Server by using 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.
- The Mobile Security Manager (MSM) servers are not supported in 12c. After restarting the servers, the 11g configurations of MSM servers, like `omsm_server1` or `WLS_MSM1`, might remain. Ignore these configurations and do not restart the MSM servers.

# 4

## Upgrading Oracle Access Manager Highly Available Environments

Describes the process of upgrading an Oracle Access Manager highly available environments from 12c (12.2.1.3.0) to 12c (12.2.1.4.0).

### Topics

- [About the Oracle Access Manager Multinode Upgrade Process](#)  
Review the topology and the roadmap for an overview of the upgrade process for Oracle Access Manager highly available environments.
- [Backing up the 12c \(12.2.1.3.0\) Middleware Home Folder on OAMHOSTs](#)  
Backup the 12c (12.2.1.3.0) Middleware Home on both OAMHOST1 and OAMHOST2.
- [Stopping Servers and Processes](#)  
Before you upgrade the configurations, you must shut down all of the pre-upgrade processes and servers, including the Weblogic Admin, Managed, and Node Manager servers that are running on the intended OAMHOST.
- [Uninstalling the Software on an OAMHOST](#)  
Follow the instructions in this section to start the Uninstall Wizard and remove the software.
- [Installing Product Distributions on OAMHOSTs](#)  
Install the binaries on an OAMHOST.
- [Starting the Servers on OAMHOSTs](#)  
After you upgrade Oracle Access Manager on an OAMHOST, start the servers.

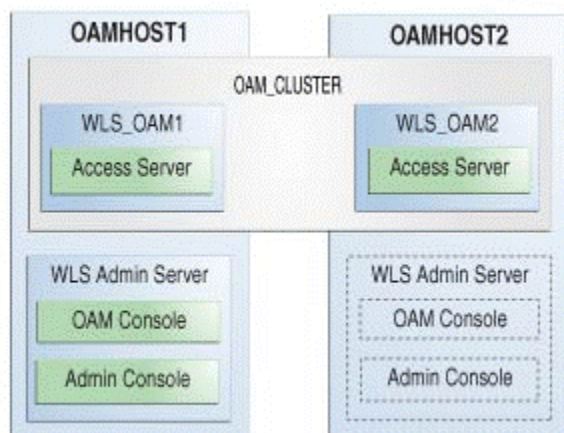
## About the Oracle Access Manager Multinode Upgrade Process

Review the topology and the roadmap for an overview of the upgrade process for Oracle Access Manager highly available environments.

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

### Upgrade Topology

The following topology shows the Oracle Access Manager cluster set up that can be upgraded to 12c (12.2.1.4.0) by following the procedure described in this chapter.

**Figure 4-1 Oracle Access Manager High Availability Upgrade Topology**

On OAMHOST1, the following installations have been performed:

- An Oracle Access Server has been installed in the WLS\_OAM1 Managed Server.
- A WebLogic Server Administration Server has been installed. Under normal operations, this is the active Administration Server.

On OAMHOST2, the following installations have been performed:

- An Oracle Access Server has been installed in the WLS\_OAM2 Managed Server.
- A WebLogic Server Administration Server has been installed. Under normal operations, this is the passive Administration Server. You make this Administration Server active if the Administration Server on OAMHOST1 becomes unavailable.

The instances in the WLS\_OAM1 and WLS\_OAM2 Managed Servers on OAMHOST1 and OAMHOST2 are configured in a cluster named OAM\_CLUSTER.

 **Note:**

This topology diagram is only for illustration purposes. Typical customer topologies may have more than two OAM server nodes in their cluster. They may also have a separate cluster of OAM Policy Manager server nodes.

**Table 4-1 Tasks for Upgrading Oracle Access Manager Highly Available Environments**

Task	Description
<b>Required</b> If you have not done so already, review the introductory topics in this guide and complete the required pre-upgrade tasks.	See: <ul style="list-style-type: none"> <li>• <a href="#">Introduction to Upgrading Oracle Identity and Access Management to 12c (12.2.1.4.0)</a></li> <li>• <a href="#">Pre-Upgrade Requirements</a></li> </ul>
<b>Required</b> Create backup of the existing 12c (12.2.1.3.0) Middleware home folders on OAMHOSTs	See <a href="#">Backing up the 12c (12.2.1.3.0) Middleware Home Folder on OAMHOSTs</a> .

**Table 4-1 (Cont.) Tasks for Upgrading Oracle Access Manager Highly Available Environments**

Task	Description
<b>Required on OAMHOST1</b> Shut down the 12c environment (stop all Administration and Managed Servers) on OAMHOST1. Ensure that the Database is up during the upgrade.	<b>WARNING:</b> Failure to shut down your servers during an upgrade may lead to data corruption. See <a href="#">Stopping Servers and Processes</a> .
<b>Required on OAMHOST1</b> On OAMHOST1, uninstall Oracle Fusion Middleware Infrastructure and Oracle Access Manager 12c (12.2.1.3.0) in the existing Oracle home.	See <a href="#">Uninstalling the Software on an OAMHOST</a> .
<b>Required on OAMHOST1</b> On OAMHOST1, install Infrastructure (JRF) 12c (12.2.1.4.0) and Oracle Access Manager 12c (12.2.1.4.0) in the existing Oracle home.	See <a href="#">Installing Product Distributions on OAMHOSTs</a> .
<b>Required on OAMHOST1</b> Start the servers on OAMHOST1.	See <a href="#">Starting the Servers</a> .
<b>Required on OAMHOST2</b> Shut down the 12c environment (stop all Managed Servers) on OAMHOST2. Ensure that the Database is up during the upgrade.	<b>WARNING:</b> Failure to shut down your servers during an upgrade may lead to data corruption. See <a href="#">Stopping Servers and Processes</a> .
<b>Required on OAMHOST2</b> On OAMHOST2, uninstall Oracle Fusion Middleware Infrastructure and Oracle Access Manager 12c (12.2.1.3.0) in the existing Oracle home.	See <a href="#">Uninstalling the Software on an OAMHOST</a> .
<b>Required on OAMHOST2</b> On OAMHOST2, install Infrastructure (JRF) 12c (12.2.1.4.0) and Oracle Access Manager 12c (12.2.1.4.0) in the existing Oracle home.	See <a href="#">Installing Product Distributions on OAMHOSTs</a> .
<b>Required on OAMHOST2</b> Start the node manager and managed servers on OAMHOST2.	See <a href="#">Starting the Servers</a> .

## Backing up the 12c (12.2.1.3.0) Middleware Home Folder on OAMHOSTs

Backup the 12c (12.2.1.3.0) Middleware Home on both OAMHOST1 and OAMHOST2.

As a backup, copy and rename the 12.2.1.3.0 Middleware home folder on OAMHOST1 and OAMHOST2.

For example:

From `/u01/app/fmw/ORACLE_HOME` to `/u01/app/fmw/ORACLE_HOME_old`



## Stopping Servers and Processes

Before you upgrade the configurations, you must shut down all of the pre-upgrade processes and servers, including the Weblogic Admin, Managed, and Node Manager servers that are running on the intended OAMHOST.

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.
- Stop all of the servers in your deployment, except for the Database. The Database must be up during the upgrade process.

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

Depending on the method you followed to start the managed servers, follow one of the following methods to stop the WebLogic Managed Server:

**Method 1:** To stop a WebLogic Server Managed Server not managed by Node Manager:

- (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.

**Method 2:** To stop a WebLogic Server Managed Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required managed server.
- Click **Shutdown**.

**Method 3:** To stop a WebLogic Server Managed Server using node manager, run the following commands:

```
wls:/offline>nmConnect('nodemanager_username','nodemanager_password',
                      'AdminServerHostName','5556','domain_name',
                      'DOMAIN_HOME','nodemanager_type')

wls:/offline>nmKill('ManagedServerName')
```

### Step 2: 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.

Follow one of the these methods to stop the Administration Server:

**Method 1:** To stop the Administration Server not managed by Node Manager:

- (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.

**Method 2:** To stop the Administration Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required admin server.
- Click **Shutdown**.

**Method 3:** To stop a WebLogic Server Managed Server using Node Manager, run the following commands:

```
wls:/offline>nmConnect('nodemanager_username','nodemanager_password',
                      'AdminServerHostName','5556','domain_name',
                      'DOMAIN_HOME','nodemanager_type')

wls:/offline>nmKill('AdminServer')
```

### Step 3: Stop Node Manager

To stop Node Manager, run the following command:

```
kill $(ps -ef | grep nodemanager | awk '{print $2}')
```

### Step 4: Validate if any WLS components are running

To validate if any WLS components, like, Administration Server, Managed Server, or Node Manager are running, run the following command:

```
$ ps -ef |grep java
```

The output must return only the grep process.

For example:

```
oracle 14709 14410 0 19:07
pts/0 00:00:00 grep --color=auto java
```

If any other java process is listed other than the above grep command, they identify and stop the listed java process.

## Uninstalling the Software on an OAMHOST

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

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

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

### Starting the Uninstall Wizard

Start the Uninstall Wizard:

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

### Selecting the Product to Uninstall

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

After you run the Uninstall Wizard, the Distribution to Uninstall screen opens.

From the drop-down menu, select the **Oracle Fusion Middleware 12c (12.2.1.3.0) Identity and Access Management** product and click **Uninstall**.

#### Note:

The Uninstall Wizard displays the Distribution to Uninstall screen only if it detects more than one product distribution in the Oracle home from where you initiate the wizard. If only **Oracle Fusion Middleware 12c (12.2.1.3.0) Identity and Access Management** product distribution is available, the Uninstall Wizard will display the Deinstallation Summary screen.

**Note:**

Do not select **Weblogic Server for FMW 12.2.1.3.0**.

The uninstallation program shows the screens listed in [Navigating the Uninstall Wizard Screens](#).

**Note:**

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

## Navigating the Uninstall Wizard Screens

The Uninstall Wizard shows a series of screens to confirm the removal of the software.

If you need help on screen listed in the following table, click **Help** on the screen.

**Table 4-2 Uninstall Wizard Screens and Descriptions**

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

 **Note:**

- Repeat these steps for uninstalling **WebLogic Server for FMW 12.2.1.3.0**. You will be reinstalling the Oracle binaries into the same *ORACLE\_HOME* location.
- After the product is uninstalled, ensure that the *ORACLE\_HOME* folder exists. During the initial 12.2.1.3.0 install, if the default location was *ORACLE\_HOME*, that is */user\_projects*, then the *domain-registry.xml* file will reside in *ORACLE\_HOME*.

Complete the following steps to clean this directory:

1. After both OAM and WLS are uninstalled, run the following command:

```
$ ls -al
```

Following is an example of the output:

```
total 28
drwxr-x---. 6 <USER> <GROUP> 4096 Apr  2 20:27 .
drwxr-x---. 6 <USER> <GROUP> 4096 Jul  9 2019 ..
drwxr-x---. 5 <USER> <GROUP> 4096 Mar 23 17:48 cfgtoollogs
-rw-r-----. 1 <USER> <GROUP>  225 Jul  9 2019 domain-registry.xml
drwxr-x---. 7 <USER> <GROUP> 4096 Mar 26 17:12 .patch_storage
drwxr-x---. 4 <USER> <GROUP> 4096 Jul  9 2019 user_projects
drwxr-x---. 3 <USER> <GROUP> 4096 Apr  2 20:26 wlserver
```

2. Go to the *ORACLE\_HOME* location. If the *user\_projects* directory and the *domain-registry.xml* file are present, take their backup. They need to be restored after the upgrade is complete. After taking the backup, delete all the files in *ORACLE\_HOME*.

## Installing Product Distributions on OAMHOSTs

Install the binaries on an OAMHOST.

Complete the following steps:

1. After uninstalling the 12c (12.2.1.3.0) product on an OAMHOST, install the following products on the OAMHOST.
  - Oracle Fusion Middleware Infrastructure 12c (12.2.1.4.0)
  - Oracle Identity and Access Management 12c (12.2.1.4.0)
  - Any additional distributions for your pre-upgrade environment

For more information, see [Installing Product Distributions](#).

 **Note:**

In 12c (12.2.1.4.0), there is no requirement to perform schema upgrade or configurations, so the domain remain the same. As a result, we do not have to perform the pack and unpack operations on OAMHOST1 and OAMHOST2.

- [Installing Product Distributions](#)  
Before beginning your upgrade, download Oracle Fusion Middleware Infrastructure and Oracle Access Manager 12c (12.2.1.4.0) distributions on the target system and install them using Oracle Universal Installer.

## Installing Product Distributions

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

 **Note:**

- The 12c binaries are installed in a different location from the previous 11g binaries. You can install 12c binaries before any planned downtime for upgrade.
- If you are using Redundant binary locations, ensure that you install the software into each of those redundant locations.

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 Access Manager (fmw\_12.2.1.4.0\_idm.jar)
  - Any additional distributions for your pre-upgrade environment

 **Note:**

If you are upgrading an integrated environment that was set up using Life Cycle Management (LCM) tool, that includes Oracle Access Manager, Oracle Identity Manager, and WebGates, then you must install the respective 12c Web Server (Oracle HTTP Server or Oracle Traffic Director) binaries in the same Oracle Home.

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 Access Manager, select **Collocated Oracle Identity and Access Manager**.

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) JAVA_HOME/bin/java -jar fmw_12.2.1.4.0_idm.jar
```

```
(Windows) JAVA_HOME\bin\java -jar fmw_12.2.1.4.0_idm.jar
```

#### Note:

- If your 11.1.2.3.0 setup was deployed using Life Cycle Management (LCM) tool, you must install Oracle HTTP Server 12c (12.2.1.4.0) in the 12c Middleware home. See *Preparing to Install and Configure Oracle HTTP Server in Installing and Configuring Oracle HTTP Server*.
- By using the opatch tool, apply the latest recommended patchsets from Oracle Support. Complete only the binary installation of patchsets and follow any post-patch steps after the upgrade process is complete. This provides the latest known fixes for upgrade process, if any.

## Starting the Servers on OAMHOSTs

After you upgrade Oracle Access Manager on an OAMHOST, start the servers.

You must start the servers in the following order:

#### Note:

Prior to starting the Administration Server, download Patch 30729380 from My Oracle Support and apply using OPatch, to the OAM node and any other WLS node in the cluster.

1. Start the Node Manager on the required OAMHOST.
  2. Start the Administration Server on the required OAMHOST.
  3. Start the Oracle Access Manager Managed Servers on the required OAMHOST.
- [Starting Servers and Processes](#)  
After a successful upgrade, start all processes and servers, including the Administration Server and any Managed Servers.



## Starting Servers and Processes

After a successful upgrade, start 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 Node Manager

Start the Node Manager in the Administration Server domain home.

Go to the `WLS_HOME/server/bin` directory and run the following command:

Where, `WLS_HOME` is the top-level directory for the WebLogic Server installation.

- (UNIX) `nohup ./startNodeManager.sh > DOMAIN_HOME/nodemanager/nodemanager.out 2>&1 &`
- (Windows) `nohup .\startNodeManager.sh > DOMAIN_HOME\nodemanager\nodemanager.out 2>&1 &`

Where, `DOMAIN_HOME` is the Administration server domain home.

### Step 2: 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.

**Method 1:** To start a Administration Server, run the following command:

```
nohup DOMAIN_HOME/bin/startWeblogic.sh &
```

**Method 2:** To start a Administration Server by using node manager, run the following commands:

```
cd ORACLE_COMMON_HOME/common/bin
./wlst.sh
wlst offline> nmConnect('nodemanager_username','nodemanager_password',
                        'ADMINVHN','5556','domain_name',
                        'DOMAIN_HOME')
nmStart('AdminServer')
```

### Step 3: Start the Managed Servers



#### Note:

In an HA environment, it is preferred to use the console or node manager to start servers.

Start a WebLogic Server Managed Server by using the Weblogic Console:

- Log into Weblogic console as a `weblogic Admin`.
- Go to **Servers > Control** tab.
- Select the required managed server.
- Click **Start**.

# 5

## Upgrading Oracle Access Manager Multi-Data Center Environments

You can upgrade Oracle Access Manager deployed across multi-data centers (MDC) from 12c (12.2.1.3.0) to 12c (12.2.1.4.0).



### Note:

To upgrade Oracle Access Manager MDC environments to 12c (12.2.1.4.0), ensure that all of the data centers (DC) are at the same Patch Set level.

When you plan to upgrade to 12c (12.2.1.4.0), you can choose to have zero down time by stopping the data center that needs to be upgraded, and routing all the traffic to the other data centers. Once the upgrade has been completed on one data center, it can start and function as an independent data center. You can then redirect all the traffic to the upgraded data center.

- [About the Oracle Access Manager Multi-Data Center Topology](#)  
The sample Oracle Access Manager Multi-Data Center topology has two data centers — Primary data center and Clone data center.
- [Roadmap for Upgrading Oracle Access Manager MDC Setup](#)  
Use the upgrade roadmap to upgrade your Oracle Access Manager multi-data center setup to 12c (12.2.1.4.0).
- [Backing Up the Existing MDC Environment](#)  
Before you begin with the upgrade, take a back up of your existing environment.
- [Enabling Write Permission to Primary and Clones \(If Necessary\)](#)  
Before you start the upgrade, you must enable modifications to the system and policy configurations on both Primary and Clones.
- [Disabling and Deleting All Replication Agreements Between Primary and Clone](#)  
Disable all replication agreements between the Primary and the Clone data centers.
- [Redirecting Traffic to Primary Data Center](#)  
An in-line upgrade procedure is used to upgrade the Clone data center which requires downtime. Therefore, all traffic must be rerouted to the Primary data center.
- [Upgrading Oracle Access Manager on Clone Data Center](#)  
Upgrade Oracle Access Manager on Clone data center to 12c (12.2.1.4.0) after you redirect the traffic to Primary data center.
- [Redirecting Traffic to Clone Data Center](#)  
An in-line upgrade procedure is used to upgrade the Primary data center which requires downtime. Therefore, all traffic must be rerouted to the Clone data centers (also referred to as, the backup data centers or the secondary data centers).

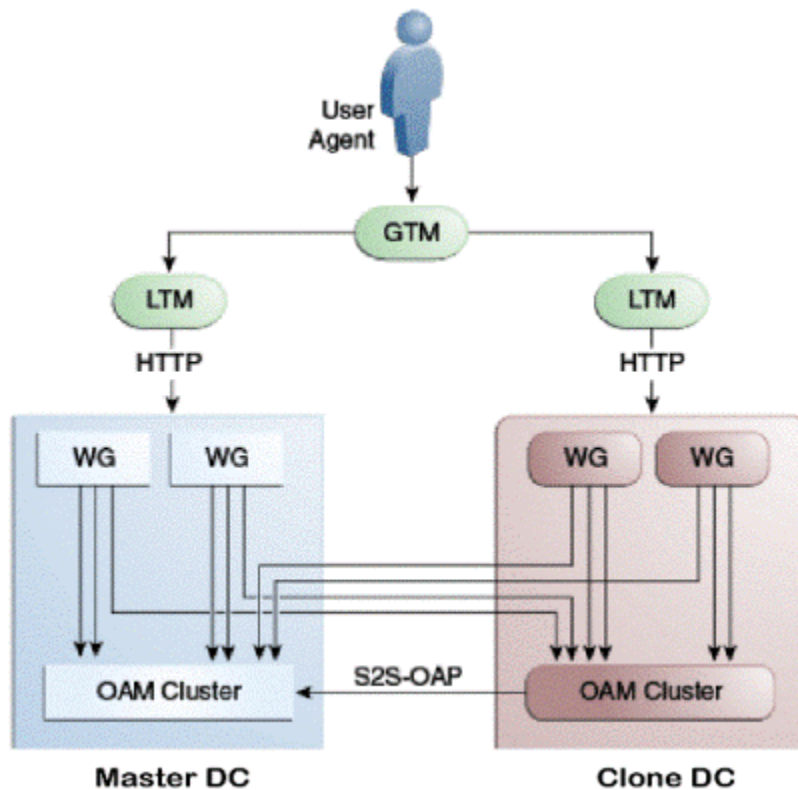
- [Upgrading Oracle Access Manager on Primary Data Center](#)  
Upgrade Oracle Access Manager on Primary data center to 12c (12.2.1.4.0) after you redirect the traffic to clone data center.
- [Freezing all Changes to Clones \(if Necessary\)](#)  
After you upgrade Oracle Access Manager on all of the Clone data center(s), it is recommended that you freeze the changes to the Clone data center(s). This is to avoid any inadvertent writes.
- [Syncing Access Metadata](#)  
Oracle Access Manager metadata stored in Unified Data Model (UDM) needs to be synced from Primary to Clone.
- [Creating Replication Agreement](#)  
Create the replication agreement again after upgrading the Primary and the Clone data centers.
- [Bringing up the Primary and Clone Data Centers Online](#)  
After successful upgrade, both Primary and Clone data centers can be brought up online. Traffic can be routed to both data centers based on existing routing rules.

## About the Oracle Access Manager Multi-Data Center Topology

The sample Oracle Access Manager Multi-Data Center topology has two data centers — Primary data center and Clone data center.

The procedure in this chapter describes how to upgrade Oracle Access Manager in a MDC setup similar to the reference topology provided in this section. You can use this upgrade procedure to upgrade your environment with any number of data centers.

Figure 5-1 Oracle Access Manager in Multi—Data Center Setup



This figure shows a Primary data center and a Clone data center, each of them including a full Access Manager installation. In this topology, GTM refers to the global load balancer, LTM refers to the local load balancer, and WG refers to the WebGate. The S2S OAP is the Oracle Access Protocol.

## Roadmap for Upgrading Oracle Access Manager MDC Setup

Use the upgrade roadmap to upgrade your Oracle Access Manager multi-data center setup to 12c (12.2.1.4.0).

Table 5-1 Oracle Access Manager MDC Upgrade Roadmap

Task	For More Information
Review the Oracle Access Manager multi-data center topology.	See <a href="#">About the Oracle Access Manager Multi-Data Center Topology</a>
Back up your existing environment.	See <a href="#">Backing Up the Existing MDC Environment</a>
Enable write permission to Primary and Clone data centers, if not already done.	See <a href="#">Enabling Write Permission to Primary and Clones (If Necessary)</a>
Disable and delete all replication agreements between Primary and Clone data centers.	See <a href="#">Disabling and Deleting All Replication Agreements Between Primary and Clone</a>
Redirect the traffic to the Primary data center.	See <a href="#">Redirecting Traffic to Primary Data Center</a>

**Table 5-1 (Cont.) Oracle Access Manager MDC Upgrade Roadmap**

Task	For More Information
Upgrade Oracle Access Manager on Clone data center.	See <a href="#">Upgrading Oracle Access Manager on Clone Data Center</a>
Redirect the traffic to the Clone data center.	See <a href="#">Redirecting Traffic to Clone Data Center</a>
Upgrade Oracle Access Manager on Primary data center.	See <a href="#">Upgrading Oracle Access Manager on Primary Data Center</a>
Freeze all changes to the Primary and Clones, if required.	See <a href="#">Freezing all Changes to Clones (if Necessary)</a>
Sync the access UDM data by exporting the access store data from Primary data center and importing it on the Clone data center.	See <a href="#">Syncing Access Metadata</a>
Create the replication agreement again.	See <a href="#">Creating Replication Agreement</a>
Bring up the Primary and Clone data centers online.	See <a href="#">Bringing up the Primary and Clone Data Centers Online</a>

## Backing Up the Existing MDC Environment

Before you begin with the upgrade, take a back up of your existing environment.

After stopping all the servers, you must back up the following on every data center before proceeding with the upgrade process:

- `ORACLE_HOME`: the Oracle Home directory.
- Oracle Access Manager Domain Home directory on all OAM hosts.
- Following Database schemas:
  - Oracle Access Manager schema
  - Audit and any other dependent schema

For more information about backing up schemas, see *Oracle Database Backup and Recovery User's Guide*.

## Enabling Write Permission to Primary and Clones (If Necessary)

Before you start the upgrade, you must enable modifications to the system and policy configurations on both Primary and Clones.

Complete the following:

1. Go to the `ORACLE_HOME/common/bin` directory.  
For example: `ORACLE_HOME/oracle_common/common/bin`

2. Run the following command on the Primary and Clone data centers:

```
cd ORACLE_HOME/oracle_common/common/bin
./wlst.sh
setMultiDataCenterWrite (WriteEnableFlag="true")
```

## Disabling and Deleting All Replication Agreements Between Primary and Clone

Disable all replication agreements between the Primary and the Clone data centers.

See [Disabling Automated Policy Synchronization](#) in the *Administrator's Guide for Oracle Access Manager*.

## Redirecting Traffic to Primary Data Center

An in-line upgrade procedure is used to upgrade the Clone data center which requires downtime. Therefore, all traffic must be rerouted to the Primary data center.

This is usually achieved by directing your load balancer to send all requests to the Primary Site. Contact your network administrator to perform this task.

## Upgrading Oracle Access Manager on Clone Data Center

Upgrade Oracle Access Manager on Clone data center to 12c (12.2.1.4.0) after you redirect the traffic to Primary data center.

To upgrade Oracle Access Manager on Primary data center, follow the instructions described in [Upgrading Oracle Access Manager Highly Available Environments](#).

## Redirecting Traffic to Clone Data Center

An in-line upgrade procedure is used to upgrade the Primary data center which requires downtime. Therefore, all traffic must be rerouted to the Clone data centers (also referred to as, the backup data centers or the secondary data centers).

Consult your network infrastructure team or refer to the network infrastructure documentation to accomplish the traffic re-routing.

For more information, see [Updating the JDK After Installing and Configuring an Oracle Fusion Middleware Product](#).

## Upgrading Oracle Access Manager on Primary Data Center

Upgrade Oracle Access Manager on Primary data center to 12c (12.2.1.4.0) after you redirect the traffic to clone data center.

To upgrade Oracle Access Manager on Primary data center, follow the instructions described in [Upgrading Oracle Access Manager Highly Available Environments](#).

## Freezing all Changes to Clones (if Necessary)

After you upgrade Oracle Access Manager on all of the Clone data center(s), it is recommended that you freeze the changes to the Clone data center(s). This is to avoid any inadvertent writes.

To freeze the changes, complete the following on the Clone data center(s):

1. Go to `ORACLE_HOME/common/bin`.
2. Run the following command:

```
ORACLE_HOME/oracle_common/common/bin/wlst.sh  
SetMultiDataCenterWrite (WriteEnableFlag="false")
```

## Syncing Access Metadata

Oracle Access Manager metadata stored in Unified Data Model (UDM) needs to be synced from Primary to Clone.

You can sync the access metadata using the WLST commands - `exportAccessStore` and `importAccessStore`. These commands need to be executed after you upgrade all of the data centers and before creating the new replication agreement. This exports the UDM artifacts created till that point, from the Primary data center and imports them in the Clone data center(s).

To sync the UDM metadata, complete the following steps:

1. Go to the `ORACLE_HOME/common/bin` directory.  
For example: `/home/oracle/oam/ORACLE_IDM/common/bin`
2. Run the following WLST command on the Primary data center to create a ZIP file containing the UDM metadata:

```
ORACLE_HOME/oracle_common/common/bin/wlst.sh  
exportAccessStore (toFile="/primary/location/dclmetadata.zip",  
namePath="/")
```

3. Copy `dclmetadata.zip` to each of the upgraded Clone data centers.
4. Run the following WLST command on the each of the Clone data centers to import the UDM metadata:

```
importAccessStore (fromFile="/clone/location/dclmetadata.zip",  
namePath="/")
```

## Creating Replication Agreement

Create the replication agreement again after upgrading the Primary and the Clone data centers.

To create the replication agreement, run the following command:





**Note:**

Ensure that Primary and Clone data centers REST endpoints are up and running, before you run this command.

```
curl -u <repluser> -H 'Content-Type: application/json' -X POST 'https://  
supplier.example.com/oam/services/rest/_replication/setup' -d  
'{"name":"DC12DC2", "source":"DC1","target":"DC2","documentType":"ENTITY"}'
```

For more information about creating a replication agreement, see [Creating a Replication Agreement](#) in the *Administrator's Guide for Oracle Access Manager*.

## Bringing up the Primary and Clone Data Centers Online

After successful upgrade, both Primary and Clone data centers can be brought up online. Traffic can be routed to both data centers based on existing routing rules.

Consult your network infrastructure team or refer to the network infrastructure documentation to accomplish the traffic re-routing.

# Part II

## Out-of-Place Cloned Upgrade of Oracle Access Manager

An out-of-place cloned upgrade is described as creating a copy of your existing system on a new hardware, and then performing an in-place upgrade on the clone.

This part contains the following chapters:

- [Cloning Oracle Access Manager Environment](#)  
The out-of-place upgrade procedure discussed in this guide explains how to perform a cloned upgrade of Oracle Access Manager 11g to Oracle Access Manager 12c.
- [Upgrading OAM Using the Snapshot Tool](#)  
You can use the OAM Snapshot tool to upgrade from OAM 12c (12.2.1.3) to OAM 12c (12.2.1.4). The tool performs the out-of-place upgrade by cloning the OAM environment.

# 6

## Cloning Oracle Access Manager Environment

The out-of-place upgrade procedure discussed in this guide explains how to perform a cloned upgrade of Oracle Access Manager 11g to Oracle Access Manager 12c.

This chapter includes the following topics:

- [Cloning the Database](#)
- [Cloning the Oracle Binaries](#)
- [Cloning the Access Domain](#)

### Cloning the Database

You can take a copy of your existing environment and then upgrade that copy. If you encounter issues during the upgrade, you will have the existing environment as a fallback.

For more information, see [Performing an Upgrade via a Cloned Environment](#).

- [Cloning the Database Using the Export/Import Method](#)
- [Cloning the 11g Environment Using the Test-To-Production \(T2P\) Process](#)

### Cloning the Database Using the Export/Import Method

On your 11g environment, export the data from your database to an export file.

To export the data, do the following:

1. Install an Oracle database of the version you want to use. This database can be a single instance database, a real applications cluster (RAC) database, a standard database, or a container database with OAM in a separate pluggable database (PDB).
2. Make a directory on the source and the destination OCI hosts.
3. Create a database directory object pointing to this location on the source and destination databases.
4. Export the source database.

 **Note:**

If you are using a RAC database, make sure you have a TNS connection which is forced to a specific instance/PDB unless you want to create the directories on each node. IADUPG is an example of a RCU prefix.

5. Copy the generated file to the destination database host.
6. Extract DDL from the source database. The import will only import the data you have extracted from the source database, it will not create any tablespaces or users, and not

having those present will cause the import to fail. This can be resolved by extracting the DDL for these objects from the database. To do this:

- a. Create a file called `extract_ddl.sql` using an editor of your choice, with the following content:

```
set pages 0
set feedback off
set heading off
set long 5000
set longchunksize 5000
set lines 200
set verify off
exec dbms_metadata.set_transform_param
(dbms_metadata.session_transform, 'SQLTERMINATOR', true);
exec dbms_metadata.set_transform_param
(dbms_metadata.session_transform, 'PRETTY', true);
accept PREFIX char prompt 'Enter RCU Prefix:'
accept PDBNAME char prompt 'Enter PDB:'
spool ddl.sql
select 'alter session set container=##PDBNAME;'
from dual
/
SELECT DBMS_METADATA.GET_DDL('TABLESPACE',Tablespace_name)
from dba_tablespaces
where tablespace_name like '##PREFIX%'
/
set lines 600
SELECT DBMS_METADATA.GET_DDL('USER',USERNAME)
from DBA_USERS
where USERNAME like '##PREFIX%'
/
set lines 200
SELECT DBMS_METADATA.GET_GRANTED_DDL ('SYSTEM_GRANT',USERNAME)

from DBA_USERS
where USERNAME like '##PREFIX%'
and USERNAME NOT LIKE '%_IAU_APPEND'
and USERNAME NOT LIKE '%_IAU_VIEWER'
/
SELECT DBMS_METADATA.GET_GRANTED_DDL ('OBJECT_GRANT',USERNAME)

from DBA_USERS
where USERNAME like '##PREFIX%'
and USERNAME NOT LIKE '%TLOGS'
and USERNAME NOT LIKE '%JMS'
/

spool off
set pages 0
set feedback off
set heading off
set long 5000
set longchunksize 5000
set lines 200
```

```

set verify off
exec dbms_metadata.set_transform_param
(dbms_metadata.session_transform, 'SQLTERMINATOR', true);
exec dbms_metadata.set_transform_param
(dbms_metadata.session_transform, 'PRETTY', true);
accept PREFIX char prompt 'Enter RCU Prefix:'
accept PDBNAME char prompt 'Enter PDB:'
spool ddl.sql
select 'alter session set container=##PDBNAME;'
from dual
/
SELECT DBMS_METADATA.GET_DDL('TABLESPACE',Tablespace_name)
from dba_tablespaces
where tablespace_name like '##PREFIX%'
/
set lines 600
SELECT DBMS_METADATA.GET_DDL('USER',USERNAME)
from DBA_USERS
where USERNAME like '##PREFIX%'
/
set lines 200
SELECT DBMS_METADATA.GET_GRANTED_DDL ('SYSTEM_GRANT',USERNAME)

from DBA_USERS
where USERNAME like '##PREFIX%'
and USERNAME NOT LIKE '%_IAU_APPEND'
and USERNAME NOT LIKE '%_IAU_VIEWER'
/
SELECT DBMS_METADATA.GET_GRANTED_DDL ('OBJECT_GRANT',USERNAME)

from DBA_USERS
where USERNAME like '##PREFIX%'
and USERNAME NOT LIKE '%TLOGS'
and USERNAME NOT LIKE '%JMS'
/

spool off

```

 **Note:**

The lines in **Bold** are applicable only if your target database is a PDB. This SQL assumes that all the objects are created using the RCU prefix. If you have created objects without the prefix (for example tablespaces/users for JMS or TLogs), you will need to add these manually.

**b.** Execute the file in SQL Plus:

```
SQL> @extract_ddl
```

7. Copy the generated file to the destination database host.
8. Create TNS entry for the Pluggable Database in OCI, if necessary.

9. Validate that the target database meets all of the criteria of Oracle Access Manager. For more information, see *Installing and Configuring the Oracle Access Management Software in Installing and Configuring Oracle Identity and Access Management*.
10. Create a database restore point to roll back the transaction, if required.
11. Create the Tablespaces/Users for Oracle Access Manager.

To do this execute the script (`ddl.sql`) you generated earlier (in step 6).

Execute the file in SQL Plus:

```
SQL> @ddl
```

Carefully review the output and correct errors, if any.

12. Import the data into the destination database. This database need not be at the same database version as the source.

```
export ORACLE_BASE=/u01/app/oracle
export ORACLE_HOME=${ORACLE_BASE}/product/12.2.0.1/dbhome_1
export GRID_HOME=/u01/app/12.2.0.1/grid
export PATH=$PATH:$ORACLE_HOME/bin:$ORACLE_HOME/OPatch
export DB_NAME=iamcdb_phxlg8
export ORACLE_SID=iamcdb

impdp \"SYS/Password@IADPDB AS SYSDBA\" DIRECTORY=orcl_full
DUMPFIL=iam_system.dmp LOGFILE=iam_system_imp.log FULL=YES;
impdp \"SYS/Password@IADPDB AS SYSDBA\" DIRECTORY=orcl_full
DUMPFIL=full_oam.dmp LOGFILE=full_oam_imp.log FULL=YES;
```

13. Create a database service in OCI with the same name as the primary.

```
srvctl add service -db iamcdb_phxlg8 -service onpremservice -
rlbgoal SERVICE_TIME -clbgoal SHORT -pdb iadpdb
srvctl start service -db iamcdb_phxlg8 -service onpremservice
srvctl status service -db iamcdb_phxlg8 -service onpremservice
```

After you have imported the schemas, it is important to check that the following query returns rows that are consistent with your deployment. This table should have been imported as part of the steps above. If it fails to do so, you must populate the table with values from your source system.

```
set linesize 100
col comp_id for a10
col comp_name for a50
col version for a10
select comp_id, comp_name, version, status, upgraded from
system.schema_version_registry;
```

## Cloning the 11g Environment Using the Test-To-Production (T2P) Process

Complete the following steps to move the installations from a source environment to a target environment:

- Prepare your source environment. See [Preparing the Source Environment](#).
- Prepare your target environment. See [Preparing the Target Environment](#).
- Install Oracle database software on the target environment, but do not create a database. See [Installing the Database on the Target Environment](#).
- Clone the database from the Source Environment to the Target Environment using RMAN. See [Installing the Database on the Target Environment](#).
- Move Oracle Access Manager to the target environment. See [Moving Identity Management Components to a Target Environment](#).
- Move a copy of the Middleware home for the component or suite from the source environment to the target environment using the `copyBinary` and `pasteBinary` scripts. See [Moving the Middleware Home and the Binary Files](#).
- Move a copy of the configuration of components. In most cases, you use the `copyConfig`, `extractMovePlan`, and `pasteConfig` scripts such as UMS user messaging preferences, data for Oracle WebCenter Portal applications, or Oracle Web Cache configuration files. Modify any information that is specific to the new environment such as host name or ports. See [Moving Oracle Fusion Middleware Components](#).

 **Note:**

Before running `pasteConfig` on the target, connect to the cloned database and verify that all the schemas/data from the source environment are present.

## Cloning the Oracle Binaries

Following options are available for cloning the Oracle binaries:

- Use the preferred backup/restore tools to archive and transfer the MW\_HOME binaries and OraInventory directories.
- Use the Oracle FMW T2P process. See [Cloning the 11g Environment Using the Test-To-Production \(T2P\) Process](#).

This section includes the following topics:

- [Using Backup/Restore Tools to Clone the Access Domain](#)

## Using Backup/Restore Tools to Clone the Access Domain

 **Note:**

You can take a back up with the domain and NodeManagers online or offline. However, Oracle recommends to execute the backup with all FMW processes shutdown.

**Take a backup:**

Complete the following steps to take a backup of your source environment binaries and Oracle Inventory:

1. Using your preferred backup tool, take a backup of the following locations on the source site:

- oraInventory
- MW\_HOME

For example, a command on OAMHOST1 may appear as follows:

```
tar cfzP /u01/oracle/backups/oamhost1_binaries.tar.gz /u01/oracle/
oraInventory MW_HOME
```

2. Repeat the command on any supplementary nodes using the separate product binary volumes.

 **Note:**

When using the shared filesystem volumes for the Oracle products MW\_HOME locations, you should **take** only the binary backups from one host per volume.

For example, a command on OAMHOST2 may appear as follows:

```
tar cfzP /u01/oracle/backups/oamhost2_binaries.tar.gz /u01/oracle/
oraInventory MW_HOME
```

3. Copy the resulting backup files to their appropriate target environment hosts.

### Restore the backup

Using your preferred extraction tool, extract the backup to your target environment nodes.

 **Note:**

When using the shared filesystem volumes for the Oracle products MW\_HOME locations, you should **restore** only the binary backups to one host per volume.

For example:

On OAMHOST1, run the following command:

```
tar xvfzP oamhost1.tar.gz
```

On OAMHOST2, run the following command:

```
tar xvfzP oamhost2.tar.gz
```



## Cloning the Access Domain

Following options are available for cloning the Access domain:

- Use your preferred backup/restore tools to archive and transfer the `DOMAIN_HOME`, `NodeManager`, and other necessary directories.
- Use the Oracle FMW T2P process. See [Cloning the 11g Environment Using the Test-To-Production \(T2P\) Process](#).

This section contains the following topics:

- [Using Backup/Restore Tools to Clone the Access Domain](#)
- [Starting the OAM Domain](#)
- [Cloning Using the Test-To-Production \(T2P\) Process](#)

## Using Backup/Restore Tools to Clone the Access Domain



### Note:

You can take a back up with the domain and Node Managers online or offline. However, Oracle recommends to execute the backup with all FMW processes shutdown.

### Take a backup:

Following steps are available to take a backup of the source environment binaries and Oracle Inventory:

1. Using your preferred backup tool, take a backup of the following locations on the source site:
  - `ASERVER_HOME`
  - `MSERVER_HOME`
  - Keystores
  - `Nodemanager`



### Note:

If you have a combined `DOMAIN_HOME` rather than a segregated one, as described in the [Enterprise Deployment Guide](#), include `DOMAIN_HOME` rather than `ASERVER_HOME` and `MSERVER_HOME`.

For example, a command on `OAMHOST1` may appear as follows:

```
tar cfvzP /u01/oracle/config/backups/oamhost1_accessdomain.tar.gz \  
ASERVER_HOME \  
MSERVER_HOME \  
Keystores \  
Nodemanager
```

```
MSERVER_HOME \
/u01/oracle/config/keystores \
/u01/oracle/config/nodemanager/OAMHOST1 \
/u01/oracle/config/nodemanager/OAMHOST2 \
/u01/oracle/config/nodemanager/IADADMINVHN \
/u01/oracle/runtime/domains/IAMAccessDomain
```

2. Repeat the command on any supplementary nodes. For example, a command on OAMHOST2 may appear as follows:

```
tar cfzP /u01/oracle/backups/oamhost2_accessdomain.tar.gz /u02/
private/oracle/config/domains/IAMAccessDomain
```

3. Copy the resulting backup files to their appropriate target environment hosts.
4. Delete any lock and log files in the domain that have been replicated from the source environment.
  - Remove any lock files for all `NodeManager` folders on the appropriate cloned environment hosts by running the following command:

```
find /u01/oracle/config/nodemanager -type f -name "*.lck" -exec rm
-f {} \;
```

- Remove any lock files from the `ASERVER_HOME` and `MSERVER_HOME` folders on the appropriate cloned environment hosts by running the following command:

#### Note:

If you have a combined `DOMAIN_HOME` rather than a segregated one as described in the *Enterprise Deployment Guide*, include `DOMAIN_HOME` rather than `ASERVER_HOME` and `MSERVER_HOME`.

For example, on OAMHOST1, run the following command:

```
find ASERVER_HOME \
-type f \( -name "*.lck" -or -name "*.lok" \) -print -exec
rm -f {} \;
find MSERVER_HOME \
-type f \( -name "*.lck" -or -name "*.lok" \) -print -exec
rm -f {} \;
```

For example, on OAMHOST2, run the following command:

```
find MSERVER_HOME \
-type f \( -name "*.lck" -or -name "*.lok" \) -print -exec
rm -f {} \;
```

- Optionally, remove the old log files from the `NodeManager` and `Managed Server` folders in the cloned domain:

For example, on OAMHOST1, run the following command:

```
find /u01/oracle/config/nodemanager/OIMHOST1 \
    -type f \( -name '*.log' -or -name '*.out' \) -print -exec rm -f
{} \;
find /u01/oracle/config/nodemanager/OIMHOST2 \
    -type f \( -name '*.log' -or -name '*.out' \) -print -exec rm -f
{} \;

find /u01/oracle/config/nodemanager/IGDADMINVHN \
    -type f \( -name '*.log' -or -name '*.out' \) -print -exec rm -f
{} \;

find ASERVER_HOME/servers/AdminServer/logs \
    -type f ! -size 0c -print -exec rm -f {} \+

find MSERVER_HOME/servers/*/logs \
    -type f ! -size 0c -print -exec rm -f {} \+
```

For example, on OAMHOST2, run the following command:

```
find MSERVER_HOME/servers/*/logs \ -type f ! -size 0c -print -exec rm -f
{} \+
```

### Restore the Access Domain in the Cloned Environment

Using your preferred extraction tool, extract the backup to your target environment nodes.

For example:

On OAMHOST1, run the following command:

```
tar xvfzP oamhost1_accessdomain.tar.gz
```

On OAMHOST2, run the following command:

```
tar xvfzP oamhost2_accessdomain.tar.gz
```

## Starting the OAM Domain

After successfully restoring the backup to the target environment instances, do the following to start the domain:

- Start the Node Manager for the ASERVER\_HOME.
- Start the Node Manager for the MSERVER\_HOME.
- Start the administration server.
- Start the OAM managed servers.
- Start the policy manager managed servers.

## Cloning Using the Test-To-Production (T2P) Process

Perform the cloning using the T2P process. See [Cloning the 11g Environment Using the Test-To-Production \(T2P\) Process](#).

# 7

## Upgrading OAM Using the Snapshot Tool

You can use the OAM Snapshot tool to upgrade from OAM 12c (12.2.1.3) to OAM 12c (12.2.1.4). The tool performs the out-of-place upgrade by cloning the OAM environment.

For more information about the tool and upgrade instructions, see Upgrading OAM Using Snapshot Tool in *Administering Oracle Access Management*.

# A

## Troubleshooting the Oracle Access Manager Upgrade

If you encounter errors during or after the upgrade of Oracle Access Manager to 12.2.1.4, review the following troubleshooting procedures.

- [Troubleshooting OAM During the Upgrade](#)  
This section describes the troubleshooting procedures for issues that you may encounter during the OAM upgrade process.
- [Troubleshooting OAM After the Upgrade](#)  
This section describes the troubleshooting procedures for issues that you may encounter after the OAM upgrade process.

### Troubleshooting OAM During the Upgrade

This section describes the troubleshooting procedures for issues that you may encounter during the OAM upgrade process.

- [Load Balancer Value Changes During the Upgrade](#)  
During the upgrade, the load balancer value changes from its original machine details and displays different values.

### Load Balancer Value Changes During the Upgrade

During the upgrade, the load balancer value changes from its original machine details and displays different values.

The values are as follows:

- Host name = oam-host
- Port= 8002

To resolve this issue, manually change the host name and port number to the original value.

### Troubleshooting OAM After the Upgrade

This section describes the troubleshooting procedures for issues that you may encounter after the OAM upgrade process.

- [OAM Version Shows 12.2.1.3 in the Config.xml File](#)
- [OAM Version Shows 12.2.1.3 in the EM Console](#)

### OAM Version Shows 12.2.1.3 in the Config.xml File

The OAM version continues to show as 12.2.1.3 within the `config.xml` file, even after the upgrade to 12c (12.2.1.4)

The `config.xml` file is located in: `<OAM Home>/user_projects/domains/<WLS_OAM_DOMAIN_NAME>/config/`.

The content appears as follows:

```
<name>oam_domain</name>
<domain-version>12.2.1.3.0</domain-version>
<security-configuration>
  <name>oam_domain</name>
  <realm>
```

This is an expected behavior and there is no known functional loss due to this parameter being set to 12.2.1.3.0. However, Oracle recommends that you should not use the `config.xml` file to validate the success of the upgrade process. To validate the upgrade, see [Doc ID 2564763.2](#) and follow the steps in tab 4 **Configure > Post Upgrade > Validation Check Point**.

## OAM Version Shows 12.2.1.3 in the EM Console

After upgrading the OAM to 12c (12.2.1.4), the Application Server Fusion Middleware Control (EM) console still shows the version as 12.2.1.3.

The **About Fusion Middleware Control** screen shows the version as 12.2.1.3.0 and the **Runtime Version** appears as 12.2.1.4.0.

This is an expected behavior and there is no known functional loss due to this parameter being set to 12.2.1.3.0. The EM builds the version information from the `<DOMAIN>/config/config.xml` file. Since, the OAM upgrade does not modify the domain configuration details, the version remains at 12.2.1.3.0.

To change this value from 12.2.1.3.0 to 12.2.1.4.0, see [Doc ID 2736986.1](#).

# B

## Upgrade Scenarios for OAM

An upgraded OAM environment can result in the following cases:

- If WebGate is upgraded and the OAM Server is not, then SSL communication between them uses TLSv1 with MD5 certificates.
- If OAM Server is upgraded and WebGate is not, then SSL communication between them fails, as the OAM Server rejects MD5 certificates and doesn't support TLSv1. In this case, you need to modify the Java security policy to enable TLSv1, TLSv1.1 and MD5.
- If both OAM Server and WebGate are upgraded, edit the WebGate profile and copy the WebGate artifacts to the WebGate config folder. SSL communication between the OAM Server and WebGates will use TLSv1.2 with SHA-2 certificates.

### WebGates

12c (12.2.1.4.0) WebGates that employ version 4 of the OAP protocol will continue to work with OAM 12c (12.2.1.4.0). However, these WebGates must be upgraded to leverage the full capability of 12c (12.2.1.4.0). To upgrade the WebGates:

1. Stop the WebGates (OHS/OTD)
2. Upgrade WebGate binaries to 12c (12.2.1.4.0)
3. Edit WebGate profile and register the updated profile
4. Copy the WebGate artifacts to the WebGate config folder
5. Start the WebGates (OHS/OTD)

### Multi-Data Center

If an upgrade results in a 12c (12.2.1.4.0) Primary server and an 12c (12.2.1.3.0) Clone server (or vice versa), then SSL communication between the servers fails. To enable communication between these servers, modify the java.security policy to enable TLSv1, TLSv1.1, and MD5 as suggested above.

### Client Certificates

OAM Server 12c (12.2.1.4.0) rejects older client/user X.509 certificates that don't adhere to JDK 8 security requirements. See [Release Notes for JDK 8 and JDK 8 Update Releases](#) for MD5- and TLS-related restrictions for the JDK 8 update specific to the system. This behavior is governed by the JDK 8 java.security policy. To ensure acceptance of older client/user X.509 certificates, modify the java.security policy to enable TLSv1, TLSv1.1, and MD5 as described above.

### Federation

For scenarios that involve Service Provider (SP) or Identity Provider (IDP) registration, the certificates used may undergo the same limitations as that for Client Certificates listed above.

Note that federation agreements will break if the Token Signing Certificate is changed. As a result, the 12c (12.2.1.3.0) security posture is carried forward after upgrading, which may

require enabling the legacy algorithms (TLSv1, TLSv1.1, and MD5), as described above. The use of SHA-2 certificates is supported.

### **OIC**

Similar to Federation, changing the OAuth Token Signing Certificate breaks existing trust relationships. As a result, the 12c (12.2.1.3.0) security posture is carried forward after upgrading, which may require enabling the legacy algorithms (TLSv1, TLSv1.1, and MD5), as described above. The use of SHA-2 certificates is supported.



# C

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

Consider that you have a JDK version `jdk1.8.0_191` installed on your machine. When you install and configure an Oracle Fusion Middleware product, the utilities, such as Configuration Wizard (`config.sh|exe`), OPatch, or RCU point to a default JDK, for example, `jdk1.8.0_191`. After some time, Oracle releases a new version of the JDK, say `jdk1.8.0_211` that carries security enhancements and bug fixes. You can upgrade the existing JDK to a newer version, and can have the complete product stack point to the newer version of the JDK.

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

- [About Updating the JDK Location After Installing an Oracle Fusion Middleware Product](#)  
The binaries and other metadata and utility scripts in the Oracle home and Domain home, such as RCU or Configuration Wizard, use a JDK version that was used while installing the software and continue to refer to the same version of the JDK. The JDK path is stored in a variable called `JAVA_HOME` which is centrally located in `.globalEnv.properties` file inside the `ORACLE_HOME/oui` directory.

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

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

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

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

- Specify the path to the newer JDK on the Domain Mode and JDK screen while running the Configuration Wizard.  
  
For example, consider that you installed Oracle Fusion Middleware Infrastructure with the JDK version `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` (Linux) 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:

(Linux) `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:

(Linux) `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:

(Linux) `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:

```
(Linux) 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` or `findstr` commands to search for the `jdk`-related references.

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

```
(Linux) DOMAIN_HOME/bin/setNMJavaHome.sh
```

```
(Windows) DOMAIN_HOME\bin\setNMJavaHome.cmd
```

```
(Linux) DOMAIN_HOME/nodemanager/nodemanager.properties
```

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

```
(Linux) DOMAIN_HOME/bin/setDomainEnv.sh
```

```
(Windows)DOMAIN_HOME\bin\setDomainEnv.cmd
```