Oracle® Fusion Middleware

Interoperability and Compatibility Guide

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Oracle Fusion Middleware Interoperability and Compatibility Guide, 12*c* (12.1.2)

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Contents

Preface

This guide describes interoperability and compatibility considerations you should review when installing, upgrading, or patching Oracle Fusion Middleware 11*g*.

This preface contains these topics:

Audience

This document is intended for system administrators responsible for installations, upgrade planning, and patch set application.

Documentation Accessibility

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Related Documents

For more information, see the following related documentation available in the Oracle Fusion Middleware 11g documentation library:

- *Planning an Upgrade of Oracle Fusion Middleware*
- *Planning an Installation of Oracle Fusion Middleware*
- *Oracle Fusion Middleware Patching Guide*

Conventions

The following text conventions are used in this document:

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

1

Understanding Interoperability and Compatibility

This chapter provides an introduction to interoperability and compatibility, and it describes how to identify areas where compatibility and interoperability considerations may arise when you are upgrading Oracle Fusion Middleware components, applying patch sets, or installing new Oracle Fusion Middleware components.

This chapter contains the following sections:

1.1 What is Compatibility?

For the purposes of this guide, **compatibility** is defined as the ability of two Oracle Fusion Middleware components of different versions (or releases) to interoperate. It is possible that you will have compatibility considerations when upgrading Oracle Fusion Middleware or when applying Oracle Fusion Middleware patches.

When upgrading, for example, you may need to know which components must be updated so that your existing integration points continue to work. When applying a patch you may want to know if the new products will work with other products of the same release or if they will continue to work with previous versions.

Compatibility can be further broken down into the following:

1.1.1 Compatibility Between Oracle Fusion Middleware Software Suites

When you are upgrading your Oracle Fusion Middleware 11*g* environment to Oracle Fusion Middleware 12*c*, you will likely update one area of your environment at a time.

For example, you can upgrade the middle tiers in one department to Oracle Fusion Middleware 12*c* in order to support new features. At the same time, you can leave your company-wide Oracle Identity Management components at Oracle Fusion Middleware 11*g*.

1.1.2 Compatibility Within Oracle Fusion Middleware Software Suites

When you are upgrading to Oracle Fusion Middleware 12*c*, you should also consider potential compatibility issues within a specific software suite.

In most cases, issues are temporary and occur only during the upgrade process. After you finish the complete procedure for upgrading the software suite, the issues are typically resolved. However, you should still be aware of these potential concerns, because they can influence your upgrade planning.

1.2 What is Interoperability?

For the purposes of this guide, **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 11*g* (11.1.1.6.0) components are generally interoperable with other 11*g* (11.1.1.6.0) components.

In some cases there may be interoperability issues between Oracle Fusion Middleware software suites. For example, you may experience issues with the co-existence of domains between Oracle Fusion Middleware 11*g* products such as SOA and WebCenter.

1.3 Understanding Interoperability and Compatibility with Supported Databases

Each release of Oracle Fusion Middleware is certified against specific database versions. Specifically, you can use these certified databases to host the Oracle Fusion Middleware components schemas.

In some cases, you might have to upgrade your database to a supported version before upgrading to a specific Oracle Fusion Middleware release. For more information on upgrading your Oracle Fusion Middleware components, see *Planning an Upgrade of Oracle Fusion Middleware*.

For the latest information about the databases supported by each Oracle Fusion Middleware release, refer to *Oracle Fusion Middleware Supported System Configurations* on the Oracle Technology Network.

From the Supported Configurations page, you can locate the specific Oracle Fusion Middleware release you are using, as well as the target Oracle Fusion Middleware release to which you want to upgrade. For each Oracle Fusion Middleware release, there is a corresponding spreadsheet that lists the certified configurations, including the supported databases.

1.4 Identifying Potential Compatibility and Interoperability Issues

The following sections describe how to identify and answer common compatibility and interoperability issues using information from this guide, the Oracle Technology Network (OTN), and other Oracle documents:

- Before You Begin
- Using Oracle Certification Matrices
- Understanding the Compatibility Matrices in this Guide
- Collecting Your Component and Infrastructure Information

- Using Release Notes
- Using the Oracle Fusion Middleware Documentation Library

1.4.1 Before You Begin

If you are installing a new product or updating an existing one (either to a new major version or a patch set), interoperability and compatibility issues may arise.

During a new product component installation, interoperability considerations relate to the capability of the new product to integrate with other Oracle Fusion Middleware components of the same release.

Compatibility considerations relate to the capability of the new product to integrate with previous versions of Oracle Fusion Middleware products which may have already been installed. During product updates, the question is mainly one of compatibility and you may need to consider the other components that need to be updated so that existing integration points continue to work.

Table 1–1 provides a list of tasks that will help you collect the information necessary to plan your Oracle Fusion Middleware upgrade and installation strategy.

Table 1–1 Tasks for Preparing to Identify and Solve Interoperability Considerations

Task	Description	Documentation
Task 1 - Gather release and version information for your installed components and supporting infrastructure.	In order for you to identify potential interoperability and compatibility issues with your Oracle Fusion Middleware components, you must first collect the release and version information for each component or suite of components you have installed or plan to install or upgrade. In addition, you should also have version and release information for your operating system, database, JDKs, and third-party products.	See Section 1.4.4, "Collecting Your Component and Infrastructure Information"
Task 2 - If you are planning an upgrade, you should develop an upgrade strategy and understand the supported starting points for upgrading to Oracle Fusion Middleware 12*c*.	An upgrade starting point is a specific version of Oracle Fusion Middleware that you must be running in order to upgrade. If you are not running a version that is a supported upgrade starting point, then you must first upgrade to a supported starting point, by using documentation from a previous release.	*Planning an Upgrade of Oracle Fusion Middleware* provides detailed information for developing and implementing an Oracle Fusion Middleware upgrade plan. In addition, each of the Oracle Fusion Middleware products has an upgrade guide that details the upgrade process and identifies any post-upgrade configuration tasks that must be completed. See Section 1.4.6, "Using the Oracle Fusion Middleware Documentation Library" for more information on locating the correct documentation for your upgrade.
Task 3 - If you are applying a patch, you should understand the patching requirements for your components and supporting infrastructure.	Patching involves copying a small collection of files over an existing installation. A patch is normally associated with a particular version of an Oracle product and involves updating from one minor version of the product to a newer minor version of the same product (for example, from version 11.1.1.6.0 to version 11.1.1.7.0).	*Patching with OPatch* describes the tools available for you to patch your existing Oracle Fusion Middleware environment. Information about the latest patches and patch sets is located in the *Oracle Fusion Middleware System Requirements and Specifications Document*.

Table 1–1 (Cont.) Tasks for Preparing to Identify and Solve Interoperability Considerations

Task	Description	Documentation
Task 4 - If you are Installing new Oracle Fusion Middleware components, you should understand the installation requirements and the supported starting points.	Each Fusion Middleware product has an installation guide that describes prerequisites, supported starting points and post-installation configuration procedures. It is important to read and follow the installation procedures to avoid potential interoperability and compatibility issues.	To view and download installation documentation, release notes, white papers, or other collateral, go to the following URL: `http://docs.oracle.com/`

1.4.2 Using Oracle Certification Matrices

The Oracle Fusion Middleware Certification matrices provide important compatibility and interoperability information such as supported system configurations, database versions, and third-party products. Refer to these documents to ensure that your current environment can support an upgrade or patch set.

> **Note:** The information in this guide is meant to complement the information contained in the Oracle Fusion Middleware certification matrices. If there is a conflict of information between this guide and the certification matrices, then the information in the certification matrices should be considered the correct version as they are frequently updated.

Table 1–2 Oracle Fusion Middleware Certification Matrices

Document Name	Description
Oracle Fusion Middleware Supported System Configurations	Each product area within Oracle Fusion Middleware maintains certification documentation that covers supported installation types, platforms, operating systems, databases, JDKs, and third-party products. From the Oracle Fusion Middleware Supported System Configurations page, locate the product area to review and select the appropriate certification document.
Oracle Fusion Middleware System Requirements and Specifications Document	The Oracle Fusion Middleware System Requirements and Specifications document covers information such as hardware and software requirements, minimum disk space and memory requirements, and required system libraries, packages, or patches.
Oracle JDeveloper and Application Development Framework Certification Information	Locate the Oracle JDeveloper and Oracle Application Development Framework (Oracle ADF) certification information to identify the various third party and Oracle products that are supported to work with the Oracle JDeveloper and Oracle ADF. Oracle ADF may support or certify with a superset of products than required for Oracle Fusion Middleware and this document serves as a reference for those cases.

1.4.3 Understanding the Compatibility Matrices in this Guide

Interoperability and compatibility matrices are used throughout the book to identify potential issues and to provide links to additional information. When you use the interoperability and compatibility matrices in this guide, the level of support can be defined in one of the following ways:

Table 1–3 How To Use the Matrices in This Guide

Status		Description
Compatible or Interoperable	✔	Integration between the components involved is expected to work with appropriate configuration. It is important to note, however, that compatibility is not a statement of certification. Certification information is located in the certification matrices described in Table 1–2.
Not Compatible or Interoperable	✘	Integration between the components involved is not expected to work.
A reference to a specific guide or section		This reference is provided when an individual guide provides more detailed information about the compatibility requirements and considerations that you should review when upgrading, patching, or installing Oracle Fusion Middleware 12*c*.
N/A		Not Applicable.

1.4.4 Collecting Your Component and Infrastructure Information

Oracle Fusion Middleware release and version information is available for each installed component on your system. This information is required before you can effectively identify and solve interoperability or compatibility issues. The certification matrices described in Section 1.4.2 provide certification and system requirements information for Oracle Fusion Middleware components.

This section provides information for the following:

- Locating Oracle Fusion Middleware Product Release Information
- Locating your database-specific version and release information:
  - Locating Your Oracle Database Release Information
  - Locating your Microsoft SQL Server Version Information
  - Locating your DB2 Version Information
- Locating JDK Version Information

1.4.4.1 Locating Oracle Fusion Middleware Product Release Information

To find specific release and version information for your Oracle Fusion Middleware components, see the installed product information using the Oracle Universal Installer (OUI). For more information, see "Viewing Release Numbers" in the *Administering Oracle Fusion Middleware*.

> **Note:** You can also find version and release information in the installation log files located in the `oraInventory/logs` directory of your Oracle Home.

1.4.4.2 Locating Your Oracle Database Release Information

To determine the release information of your Oracle database:

Start SQL*Plus from the Oracle home directory:

```
sqlplus /nolog
SQL> CONNECT / AS SYSDBA
SQL> select * from v$version;
```

The command returns the release information, such as the following:

```
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
PL/SQL Release 11.2.0.4.0 - Production
CORE    11.2.0.4.0      Production
TNS for Linux: Version 11.2.0.4.0 - Production
NLSRTL Version 11.2.0.4.0 - Production
```

1.4.4.3 Locating your Microsoft SQL Server Version Information

To determine the release information of your Microsoft SQL database:

From the command line, enter the following:

```
exec xp_msver ProductVersion
```

The command returns the product version information, such as the following:

```
ProductVersion 589824 9.00.1399.06
```

1.4.4.4 Locating your DB2 Version Information

To determine the release information of DB2, do the following:

- From the **Windows** operating system command line, navigate to the following:

  ```
  \Program Files\IBM\SQLLIB\BIN>db2level
  ```

  The command returns the database version and applicable fix pack information such as the following:

  ```
  DB21085I Instance "DB2? uses "32? bits and DB2 code release "SQL09011? with
  level identifier "01020107?.
  Informational tokens are "DB2 v9.1.100.129?, "s061104?, "WR21374?, and Fix Pack
  "1?.
  Product is installed at "D:\PROGRA~1\IBM\SQLLIB" with DB2 Copy Name "DB2COPY1?.
  ```

- From **UNIX** operating system command line, type the following:

  ```
  db2ls
  ```

  This command shows the installation path, version level, fix pack information and installation date of the installed DB2 product. Output from this command goes to the console by default.

  ```
  Install Path        Level   Fix Pack    Install Number     Install Date
  ------------------------------------------------------------------------
  /opt/ibm/db2/V9.1   9.1.0.0        0          1    Fri Sep 3 10:26:33 2010 EDT
  ```

1.4.4.5 Locating JDK Version Information

Many Fusion Middleware Components are dependent on having a supported JDK installed and configured. The currently supported JDK version information is documented in the Oracle Fusion Middleware Supported System Configurations matrix as described in Section 1.4.2.

To locate your current JDK version, use the `java -version` command to display the current version of Java you are using. For example:

```
> java -version
java version "1.7.0_17"
Java(TM) SE Runtime Environment (build 1.7.0_17-b02)
Java HotSpot(TM) Client VM (build 23.7-b01, mixed mode, sharing)
```

Note that if you have more than one installation of Java on your system, then the java command uses the installation identified in the JAVA_HOME system variable.

On UNIX systems, you can often identify the location of the default Java software by using the which command. For example:

```
> which java
/usr/bin/java
```

1.4.5 Using Release Notes

Refer to the Oracle Fusion Middleware Release Notes for specific information about required patch sets that address specific interoperability and compatibility issues which may surface during upgrade or patching process. The release notes for each release are available on the Oracle Technology Network (OTN):

`http://docs.oracle.com/`

1.4.6 Using the Oracle Fusion Middleware Documentation Library

The Oracle Fusion Middleware documentation library provides access to information that may assist you when upgrading and patching your Oracle environment. You can review component-specific administration, installation, and upgrade guides for Oracle Fusion Middleware 12*c* documentation at:

`http://www.oracle.com/technology/documentation/middleware.html`

The following guides provide information on installing, patching, and upgrading your Oracle Fusion Middleware environment:

- *Patching with OPatch*
- *Planning an Upgrade of Oracle Fusion Middleware*
- *Planning an Installation of Oracle Fusion Middleware*

2

Oracle Fusion Middleware 12*c* (12.1.2) Interoperability and Compatibility

This chapter summarizes the specific interoperability and compatibility considerations and issues for the Oracle Fusion Middleware 12*c* (12.1.2) release.

This chapter contains the following sections:

2.1 About the Oracle Fusion Middleware 12*c* (12.1.2) Release

The following sections provide general information about Oracle Fusion Middleware 12*c* (12.1.2) in terms of its compatibility and interoperability with other Oracle Fusion Middleware products:

2.1.1 Products and Features Available in Oracle Fusion Middleware 12*c* (12.1.2)

Oracle Fusion Middleware 12*c* (12.1.2) is the first release of the Oracle Fusion Middleware 12*c*. This release contains a limited set of Oracle Fusion Middleware products and features that serve as a starting point for Oracle Fusion Middleware 12*c* application development and planning.

Oracle Fusion Middleware includes the following products:

- Oracle JDeveloper

- Oracle WebLogic Server and Coherence
- Oracle Fusion Middleware Infrastructure
- Oracle HTTP Server

This is not a definitive list of products released with Oracle Fusion Middleware 12*c* (12.1.2). For information about all the Oracle Fusion Middleware 12*c* (12.1.2) products, refer to the *Understanding Oracle Fusion Middleware*.

2.1.1.1 About Oracle JDeveloper 12*c* (12.1.2)

JDeveloper is an integrated development environment (IDE) for building applications using the latest standards for Java, XML, Web services, and SQL. For more information, see "Introduction to Oracle JDeveloper" in *Developing Applications with Oracle JDeveloper*.

2.1.1.2 About Oracle WebLogic Server and Coherence 12*c* (12.1.2)

Oracle WebLogic Server is a scalable, enterprise-ready Java Platform, Enterprise Edition (Java EE) application server. For more information, see "Introduction" in *Understanding Oracle WebLogic Server*.

2.1.1.3 About Oracle Fusion Middleware Infrastructure 12*c* (12.1.2)

Oracle Fusion Middleware Infrastructure is a Oracle Fusion Middleware distribution that provides Oracle WebLogic Server, Oracle Coherence, and the Oracle JRF infrastructure services, such as:

- Oracle Application Development Framework (Oracle ADF)
- Oracle Metadata Services (MDS)
- Oracle Platform Security Servers (OPSS)
- Oracle Web Services Manager (OWSM)
- Oracle Enterprise Manager Fusion Middleware Control

These services are installed into the Oracle common directory inside the Oracle Fusion Middleware 12*c* Oracle home by the Infrastructure installer.

For more information about the changes in directory structure and other concepts from Oracle Fusion Middleware 11*g* to 12*c*, see *Understanding Oracle Fusion Middleware*.

Note that the equivalent installer in Oracle Fusion Middleware 11*g* is the Application Developer 11*g* installer, which requires an existing installation of Oracle WebLogic Server. In 12*c*, the Oracle Fusion Middleware Infrastructure distribution consists of both Oracle WebLogic Server and the Oracle JRF in a single installer.

2.1.1.4 About Oracle HTTP Server 12*c* (12.1.2)

Oracle HTTP Server is the web server component for Oracle Fusion Middleware. It provides a listener for Oracle WebLogic Server and the framework for hosting static pages, dynamic pages, and applications over the Web. For more information, see "Introduction to Oracle HTTP Server" in *Administering Oracle HTTP Server*.

2.1.2 Products and Features Not Available in Oracle Fusion Middleware 12*c* (12.1.2)

Oracle Fusion Middleware 12*c* (12.1.2) does not include many of the Oracle Fusion Middleware products that were available in Oracle Fusion Middleware 11*g*. Instead, as the initial Oracle Fusion Middleware 12*c* release, it provides a limited set of Oracle

Fusion Middleware products and features that serve as a starting point for Oracle Fusion Middleware 12*c* application development and planning.

As a result, there specific considerations when installing and configuring Oracle Fusion Middleware 12*c* (12.1.2) in an existing Oracle Fusion Middleware 11*g* environment.

For more information, see Section 2.3.

2.2 Oracle WebLogic Server and Coherence Compatibility with Previous Releases

If you are currently running Oracle WebLogic Server 11*g* products, then be aware of the following:

- Do not install Oracle WebLogic Server 12*c* (12.1.2) in the same Middleware home or Oracle home as any previous Oracle Fusion Middleware 11*g* or Oracle WebLogic Server 11*g* products. This includes Oracle WebLogic Server 10.3.
- Do not install any Oracle Fusion Middleware 11*g* products in the same Oracle home as Oracle WebLogic Server 12*c* (12.1.2).

Similarly, you cannot extend an existing Oracle Fusion Middleware 11*g* or Oracle WebLogic Server 11*g* domain with Oracle WebLogic Server 12*c* (12.1.2).

2.3 Oracle Fusion Middleware Infrastructure Compatibility with Previous Releases

If you are currently running Oracle Fusion Middleware 11*g* products, then be aware of the following:

- Do not install Oracle Fusion Middleware 12*c* (12.1.2) Infrastructure in the same Middleware home or Oracle home as any previous Oracle Fusion Middleware 11*g* products.
- Do not install any Oracle Fusion Middleware 11*g* products in the same Oracle home as Oracle Fusion Middleware Infrastructure 12*c* (12.1.2).

Similarly, you cannot extend an existing Oracle Fusion Middleware 11*g* or Oracle WebLogic Server 11*g* domain with Oracle Fusion Middleware Infrastructure 12*c* (12.1.2).

You can, however, use existing Oracle Fusion Middleware 11*g* products with Oracle Fusion Middleware Infrastructure, as long as they are installed in a separate Oracle Fusion Middleware 11*g* Middleware home. For example, you can use an existing Oracle Identity Management 11*g* installation for LDAP directory services that support your Oracle Fusion Middleware Infrastructure 12*c* (12.1.2) applications.

2.4 Oracle HTTP Server Interoperability and Compatibility

Table 2–1 summarizes the most common interoperability scenarios for Oracle HTTP Server and other Oracle Fusion Middleware components. The information in the table was accurate as of the publishing of this document.

For complete information about the interoperability of Oracle HTTP Server, see the certification information available on the Oracle Technology Network (OTN). For more information, see Section 1.4.2, "Using Oracle Certification Matrices".

As you review the table, consider the following:

- Interoperability between versions (such as between Oracle HTTP Server 11*g* and Oracle Fusion Middleware 12*c*) are supported only when the products are installed in separate Oracle homes. In general, Oracle does not support the installation of products of different versions in the same Oracle home. For more information, see Section 2.8.
- Oracle HTTP Server 12*c* (12.1.2) includes WebGate 12*c* (12.1.2), which can be used to integrate Oracle WebLogic Server or Oracle Fusion Middleware Infrastructure with Oracle Access Manager. For more information, see Section 2.6.1.

Table 2–1 Oracle HTTP Server Interoperability with Oracle Fusion Middleware 12c

	Versions of Oracle HTTP Server Before 11*g* (11.1.1.6.0)	Oracle HTTP Server 11*g* (11.1.1.6.0) or Later	Oracle HTTP Server 12*c* (12.1.2)
Oracle WebLogic Server and Coherence 12*c* (12.1.2)	✘	✔	✔
Oracle Fusion Middleware Infrastructure 12*c* (12.1.2)	✘	✔	✔
Oracle Fusion Middleware 11*g* Release 1 (11.1.1.6.0)	✔	✔	✔
Oracle Fusion Middleware 11*g* Release 1 (11.1.1.7.0)	✔	✔	✔

2.5 Interoperability with Supported Databases

Oracle Fusion Middleware 12*c* (12.1.2) supports specific database versions for hosting the required Oracle Fusion Middleware product and component schemas and for other specific product features.

The certification information on the Oracle Technology Network (OTN) provides information about the specific database versions supported by Oracle Fusion Middleware. For more information on using the certification information, see Section 1.4.2, "Using Oracle Certification Matrices".

However, in some cases, an Oracle Fusion Middleware feature or component requires a more specific database version or a specific database feature that is available in a particular database release.

The following sections describes some of those specific features and database requirements:

- Oracle Database Interoperability Considerations
- Java DB Interoperability Considerations

2.5.1 Oracle Database Interoperability Considerations

In addition to the information available in the certification information on the Oracle Technology Network (OTN), Table 2–2 provides some additional considerations when using specific Oracle database features.

Table 2–2 Database Version Requirements for Selected Products and Features

Product or Feature	Database Requirement	Restrictions	More Information
Using SCAN addresses with GridLink data sources.	Oracle Database 11.2 or later, with Single Client Access Name (SCAN) enabled	None	"SCAN Addresses" in *Administering JDBC Data Sources for Oracle WebLogic Server*
JDBC Multi Data Sources	All Oracle Database versions supported by Oracle Fusion Middleware	None.	"Configuring JDBC Multi Data Sources" in *Administering JDBC Data Sources for Oracle WebLogic Server*
Using Edition-Based Redefinition (EBR) when creating schemas in an Oracle database	Oracle Database 11.2 or later	EBR is supported by all Oracle Fusion Middleware schemas, except where noted.	▪ "Component-Specific Requirements for Oracle Databases" in *Oracle Fusion Middleware System Requirements and Specifications* ▪ "Specifying Connection Credentials for Oracle Databases and Oracle Databases with Edition-Based Redefinition" in *Creating Schemas with the Repository Creation Utility* ▪ "Managing Editions" in *Oracle Database Administrator's Guide*
Support for pluggable databases (PDBs)	Oracle Database 12.1 or later	PDBs are supported for Oracle Fusion Middleware schemas. Connecting to a multitenant container database (CDB) from the Repository Creation Utility is not supported.	'"Managing Pluggable Databases" in the *Oracle Database Administrator's Guide*

2.5.2 Java DB Interoperability Considerations

As described in the certification information, Oracle supports the use of Java DB as a repository for the required Oracle Fusion Middleware schemas in a limited set of Oracle WebLogic Server domain configurations.

Specifically, for evaluation or development purposes only, you can use Java DB to host the required schemas for an Oracle Fusion Middleware Infrastructure domain.

For example, you can install the required Oracle Fusion Middleware schemas in a Java DB database and reference the Java DB data sources during the configuration of an Oracle Fusion Middleware Infrastructure domain.

For more information about Java DB, refer to the Java DB documentation at the following URL:

```
http://docs.oracle.com/javadb
```

For more information on certified databases, see Section 1.4.2, "Using Oracle Certification Matrices".

2.6 Interoperabilty with Oracle Identity Management Products

This section provide information about Oracle Identity Management Interoperability with Oracle Fusion Middleware 12*c*:

- Interoperability with Oracle Identity and Access Management
- Interoperability with Oracle Identity Management Directory Services

2.6.1 Interoperability with Oracle Identity and Access Management

Table 2–3 shows the interoperability of Oracle Fusion Middleware 12*c* (12.1.2) with the available versions of Oracle Identity and Access Management.

When reviewing the interoperability of Oracle Identity and Access Management and Oracle Fusion Middleware 12*c*, consider the following:

- In most cases, you can use currently available versions of Oracle Identity and Access Management with Oracle Fusion Middleware 12*c* because the Oracle Identity and Access Management products are installed in a separate Oracle home and configured in a separate Oracle WebLogic Server domain.

  For more information, see Section 2.8, "Oracle Home and Domain Extension Interoperability".

- The information shown in Table 2–3 was accurate at the time this document was published. Always check the certification information on the Oracle Technology Network (OTN) for the latest certification information.

- Oracle HTTP Server 12*c* (12.1.2) includes WebGate 12*c* (12.1.2), which can be used to integrate Oracle WebLogic Server or Oracle Fusion Middleware Infrastructure with Oracle Access Manager 11*g* (11.1.1.5.0) or later. For more information, see Section 2.4.

Table 2–3 Oracle Identity and Access Management Interoperability with Oracle Fusion Middleware 12c

	Oracle Identity and Access Management Versions Before 11.1.1.5.0	Oracle Identity and Access Management 11.1.1.5 or later	Oracle Identity and Access Management 11*g* Release 2 (11.1.2)
Oracle WebLogic Server and Coherence 12*c* (12.1.2)	✘	✔	✔
Oracle Fusion Middleware Infrastructure 12*c* (12.1.2)	✘	✔	✔

2.6.2 Interoperability with Oracle Identity Management Directory Services

Table 2–3 shows the interoperability of Oracle Fusion Middleware 12*c* (12.1.2) with the available versions of Oracle Identity Management Directory Services.

When reviewing the interoperability of Oracle Identity Management and Oracle Fusion Middleware 12*c*, consider the following:

- In most cases, you can use currently available versions of Oracle Identity and Access Management with Oracle Fusion Middleware 12*c* because the Oracle Identity and Access Management products are installed in a separate Oracle home and configured in a separate Oracle WebLogic Server domain.

  For more information, see Section 2.8, "Oracle Home and Domain Extension Interoperability".

- The information shown in Table 2–4 was accurate at the time this document was published. Always check the certification information on the Oracle Technology Network (OTN) for the latest certification information.

Table 2–4 Oracle Identity Management Directory Services Interoperability with Oracle Fusion Middleware 12c

	Oracle Internet Directory and Oracle Virtual Directory Versions Before 11.1.1.5.0	Oracle Internet Directory and Oracle Virtual Directory 11.1.1.5 or later	Oracle Unified Directory 11*g* (11.1.2)
Oracle WebLogic Server and Coherence 12*c* (12.1.2)	✘	✔	✔
Oracle Fusion Middleware Infrastructure 12*c* (12.1.2)	✘	✔	✔

2.7 Oracle Web Services Interoperability

Web services are Web-based applications that use open, XML-based standards and transport protocols to exchange data with clients. Web services are developed using Java Technology APIs and tools provided by an integrated Web services category.

Oracle supports several Web services categories, which are associated with specific Oracle Fusion Middleware products and components. For more information, see *Understanding Web Services*.

These Oracle Web services categories support a variety of Web services message formats, capabilities, and security features. While this support varies from one category to another, all the Oracle Web services categories support the following standard features in the communication messages they send and receive:

- Plain SOAP
- WS-Security, With SSL
- WS-Security, No SSL

As a result, if you develop Web services applications that support these types of Web services messages, then the services you create can be used Interoperability with any of the Oracle Web services security categories.

For a more information about the supported WS-Security scenarios between the categories and information on how to configure Web services endpoints, refer to the *Interoperability Solutions Guide for Oracle Web Services Manager*.

2.8 Oracle Home and Domain Extension Interoperability

The following sections provide information about the interoperability of Oracle Fusion Middleware products when installing products in a Middleware home and when extending existing Oracle WebLogic Server domains:

- Oracle Home Interoperability
- Domain Extension Interoperability

2.8.1 Oracle Home Interoperability

When installing Oracle Fusion Middleware products, be sure that each Oracle home you create contains only products that are at the same version or patch set. Each product has its own maintenance schedule and it is possible that future interoperability issues could result.

For example, unless otherwise documented, you cannot install Oracle SOA Suite 11*g* Release 1 (11.1.1.6.0) in the same Oracle home with Oracle Fusion Middleware Infrastructure 12*c*.

This rule applies when installing new products, as well as when applying patches.

2.8.2 Domain Extension Interoperability

You can extend an existing Oracle Fusion Middleware product domain to support another Oracle Fusion Middleware product, as long as they are the same version number or patch set.

For example, if you have an existing SOA Suite 11*g* Release 1 (11.1.1.5.0) domain, do not attempt to extend or patch that domain using Oracle Fusion Middleware 12*c*. To avoid potential interoperability issues, wait until both suites are available at equivalent versions.

2.9 What are Custom and Client Applications?

When you upgrade from Oracle Application Server 10*g* to Oracle Fusion Middleware 11*g*, or if you apply any patches on an existing Oracle Fusion Middleware 11*g* environment, you should consider the impact on your custom applications as defined as:

- Applications written using JDeveloper
- Applications using any other IDE, but also using any of the Oracle Fusion Middleware public Java APIs.

Specifically, the information in this section applies in the following situations:

- If you have created custom applications that you have deployed on Oracle Application Server 10*g* or Oracle Fusion Middleware 11*g*.

- If you have created or if you maintain client applications that interact with applications you deployed on Oracle Application Server 10*g* or Oracle Fusion Middleware 11*g*.

Oracle attempts to support binary and source-level compatibility between the current version of Fusion Middleware and patch set updates applied to it. Where incompatibilities arise with public interfaces, they are documented in the related API reference guides, which are available in the Oracle Fusion Middleware 12*c*.

Oracle recommends that you ensure the business applications adopting new versions or and upgrades are tested through your normal release process to ensure there are no regressions.

2.10 Interoperability with Custom and Client Applications

When you upgrade to Oracle Fusion Middleware 12*c*, or if you apply any patches on an existing Oracle Fusion Middleware, you should consider the impact on your custom applications, such as:

- Applications written using JDeveloper
- Applications using any other IDE, but also using any of the Oracle Fusion Middleware public Java APIs.

Specifically, the information in this section applies in the following situations:

- If you have created custom applications that you have deployed on Oracle Application Server 10*g* or Oracle Fusion Middleware 11*g*.
- If you have created or if you maintain client applications that interact with applications you deployed on Oracle Application Server 10*g* or Oracle Fusion Middleware 11*g*.

Oracle attempts to support binary and source-level compatibility between the current version of Fusion Middleware and patch set updates applied to it. Where incompatibilities arise with public interfaces, they are documented in the related API reference guides, which are available in the Oracle Fusion Middleware 12*c* documentation library.

Oracle recommends that you ensure the business applications adopting new versions or upgrades are tested through your normal release process to ensure there are no regressions.

In general, applying Oracle Fusion Middleware patch sets should require no additional changes to your custom or client applications. When upgrading, however, you should expect some changes.

For more information on WebLogic Server compatibility, see "WebLogic Server 12.1.2 Compatibility with Previous Releases" in *Upgrading Oracle WebLogic Server*.