

## **Oracle® Fusion Middleware**

Administrator's Guide for Oracle Application Development  
Framework

11g Release 1 (11.1.1.9.0)

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Documentation for Oracle Application Development  
Framework (Oracle ADF) administrators that describes how  
to deploy, monitor, and configure ADF applications.

Oracle Fusion Middleware Administrator's Guide for Oracle Application Development Framework 11g  
Release 1 (11.1.1.9.0)

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# Contents

<b>Preface</b> .....	vii
Audience .....	vii
Documentation Accessibility .....	vii
Related Documents .....	vii
Conventions .....	viii
<b>What's New in This Guide in Release 11.1.1.9.0</b> .....	ix
<b>Part I           Understanding Oracle ADF</b>	
<b>1 Introduction to Oracle ADF Administration</b>	
1.1 Introducing Oracle ADF .....	1-1
1.2 Oracle ADF Architecture .....	1-1
1.2.1 ADF Business Components .....	1-2
1.2.2 ADF Model .....	1-2
1.2.3 ADF Controller .....	1-2
1.2.4 ADF Faces Rich Client .....	1-2
1.3 Administering Oracle ADF Applications .....	1-3
<b>Part II          Administering ADF Applications</b>	
<b>2 Deploying ADF Applications</b>	
2.1 Introduction to Deploying ADF Applications .....	2-1
2.2 Preparing the Standalone Application Server for Deployment .....	2-2
2.2.1 How to Install the ADF Runtime to the Application Server Installation .....	2-4
2.2.1.1 Installing the ADF Runtime into an Existing WebLogic Server Installation Using the Oracle Fusion Middleware Application Developer Installer	2-5
2.2.1.2 Installing the ADF Runtime into an Existing WebSphere Application Server Installation Using the Oracle Fusion Middleware Application Developer Installer	2-5
2.2.2 How to Create and Extend Oracle WebLogic Server Domains .....	2-6
2.2.2.1 Creating an Oracle WebLogic Server Domain for Oracle ADF .....	2-6
2.2.2.2 Extending the Oracle WebLogic Server Domain for Oracle ADF .....	2-6
2.2.2.3 Setting Up Remote WebLogic Managed Servers for Oracle ADF .....	2-7
2.2.3 How to Create a JDBC Data Source for Oracle WebLogic Server .....	2-8

2.2.4	How to Create a JDBC Data Source for IBM WebSphere Application Server .....	2-9
2.3	Deploying Using Oracle Enterprise Manager Fusion Middleware Control .....	2-9
2.4	Deploying Using Scripting Commands.....	2-10
2.5	Deploying Using Scripts and Ant.....	2-10
2.6	Deploying Using the Application Server Administration Tool .....	2-11

### 3 Monitoring and Configuring ADF Applications

3.1	Introduction to ADF Application Monitoring and Configuration .....	3-1
3.2	Monitoring Performance Using Fusion Middleware Control.....	3-2
3.2.1	How to View Application Module Performance .....	3-2
3.2.2	How to view Application Module Pool Performance.....	3-3
3.2.3	How to View ADF Task Flow Performance .....	3-4
3.3	Configuring Application Properties Using Fusion Middleware Control.....	3-5
3.3.1	How to Modify ADF Business Components Parameters .....	3-5
3.3.2	How to Modify Connection Configurations.....	3-14
3.4	Configuring Application Properties Using the MBean Browser .....	3-21
3.4.1	How to Modify ADF Application Configuration Using MBean .....	3-21
3.4.2	How to Modify ADF Connections Using MBean .....	3-22
3.4.3	How to Modify ADF Business Components Configuration Using MBeans.....	3-24
3.4.4	How to Modify MDS Configuration Using MBean.....	3-24
3.5	How to Edit Credentials Deployed with the Application .....	3-25
3.6	Diagnosing Problems using the Diagnostic Framework .....	3-26
3.7	Viewing Application Metric Information with DMS SPY .....	3-26
3.8	Configuring WebSphere Application Server .....	3-26
3.8.1	How to Configure WebSphere to Allow Reuse of Query Result Sets.....	3-27

### 4 Administering ADF Desktop Integration

4.1	Installing and Upgrading ADF Desktop Integration.....	4-1
4.1.1	Prerequisites for Installing ADF Desktop Integration Add-in.....	4-2
4.1.2	Configuring the End User's Microsoft Excel to work with ADF Desktop Integration.....	4-2
4.1.3	How to Install the ADF Desktop Integration Add-in From a Web Server.....	4-3
4.1.4	How to Upgrade the ADF Desktop Integration Add-in .....	4-4
4.1.5	How to Run ADF Desktop Integration Installer from Command Line.....	4-4
4.2	ADF Desktop Integration Logs .....	4-5
4.3	Security in ADF Desktop Integration.....	4-5
4.3.1	End User Authentication .....	4-6
4.3.2	What You May Need to Know About Configuring Security in a Fusion Web Application	4-6
4.3.3	What You May Need to Know About Resource Grants for Web Pages.....	4-7
4.4	Verifying the Client Version of ADF Desktop Integration .....	4-8
4.4.1	How to Disable the Install Option on the Client-Server Version Check Dialog .....	4-9
4.5	Verifying Integrated Excel Workbook Metadata .....	4-10
4.5.1	How to Disable the Metadata Tamper-Check in the Fusion Web Application.....	4-10
4.6	Common ADF Desktop Integration Error Messages and Problems .....	4-12

## 5 Working with WLST Commands for ADF Applications

5.1	Overview of Custom WLST Commands for Oracle ADF.....	5-1
5.2	Using ADF-Specific WLST Commands.....	5-1

## Part III Appendices

### A ADF Runtime Libraries

A.1	adf.oracle.domain.webapp.war Library.....	A-1
A.2	adf.oracle.domain.ear Library.....	A-3
A.3	adf.desktopintegration.war Library.....	A-5
A.4	adf.desktopintegration.model.ear Library.....	A-5
A.5	System Classpath.....	A-5

### B wsadmin Command Reference for ADF Applications

B.1	Overview of Custom wsadmin Commands for Oracle ADF.....	B-1
B.2	ADF-Specific WebSphere Commands.....	B-1
B.2.1	createURLConnection.....	B-2
B.2.1.1	Description.....	B-2
B.2.1.2	Syntax.....	B-2
B.2.1.3	Example.....	B-2
B.2.2	createURLConnection.....	B-2
B.2.2.1	Description.....	B-2
B.2.2.2	Syntax.....	B-2
B.2.2.3	Example.....	B-3
B.2.3	setURLConnectionAttributes.....	B-3
B.2.3.1	Description.....	B-3
B.2.3.2	Syntax.....	B-3
B.2.3.3	Example.....	B-3
B.2.4	listURLConnection.....	B-3
B.2.4.1	Description.....	B-3
B.2.4.2	Syntax.....	B-3
B.2.4.3	Example.....	B-3
B.2.5	getADFMArchiveConfig.....	B-4
B.2.5.1	Description.....	B-4
B.2.5.2	Syntax.....	B-4
B.2.5.3	Example.....	B-5
B.2.6	updateADFLibrary.....	B-6
B.2.6.1	Description.....	B-6
B.2.6.2	Syntax.....	B-6
B.2.6.3	Example.....	B-6
B.2.7	upgradeADFLibraryOnCluster.....	B-6
B.2.7.1	Description.....	B-7
B.2.7.2	Syntax.....	B-7
B.2.7.3	Example.....	B-7

## **C Audit Reference for Oracle Application Development Framework**

C.1	About Custom and Standard Audit Reports .....	C-1
C.2	Attributes of ADF Audit Events .....	C-1
C.3	Audit Events in Oracle ADF View .....	C-2
C.4	Audit Events in Oracle ADF Business Components.....	C-3
C.5	Audit Events in Oracle ADF Model .....	C-3
C.6	Audit Events in Oracle ADF Controller .....	C-4
C.7	Audit Events in Jedi.....	C-4

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# Preface

Welcome to the *Administrator's Guide for Oracle Application Development Framework*.

## Audience

This document is intended for system administrators who need to deploy, manage, monitor, and configure the following:

- Oracle ADF applications using the Oracle Application Development Framework (Oracle ADF)

## Documentation Accessibility

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## Related Documents

For more information, see the following documents:

*Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*

*Oracle Fusion Middleware Administrator's Guide*

*Oracle Fusion Middleware Web User Interface Developer's Guide for Oracle Application Development Framework*

*Oracle Fusion Middleware Mobile Browser Developer's Guide for Oracle Application Development Framework*

*Oracle Fusion Middleware Desktop Integration Developer's Guide for Oracle Application Development Framework*

*Oracle Fusion Middleware Application Security Guide*

*Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*

*Oracle Fusion Middleware High Availability Guide*

*Oracle Fusion Middleware Third-Party Application Server Guide*

*Oracle Fusion Middleware Configuration Guide for IBM WebSphere Application Server*

*Oracle Fusion Middleware Patching Guide*

*Oracle Fusion Middleware Repository Creation Utility User's Guide*

*Oracle JDeveloper 11g Online Help*

*Oracle JDeveloper 11g Release Notes*, included with your JDeveloper 11g installation, and on Oracle Technology Network

*Oracle Fusion Middleware Java API Reference for Oracle ADF Model*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Controller*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Lifecycle*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Faces*

*Oracle Fusion Middleware JavaScript API Reference for Oracle ADF Faces*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Data Visualization Components*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Share*

*Oracle Fusion Middleware Java API Reference for Oracle ADF Business Components Browser*

*Oracle Fusion Middleware Java API Reference for Oracle Generic Domains*

*Oracle Fusion Middleware interMedia Domains Java API Reference for Oracle ADF Business Components*

*Oracle Fusion Middleware Java API Reference for Oracle Metadata Service (MDS)*

## Conventions

The following text conventions are used in this document:

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



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# What's New in This Guide in Release 11.1.1.9.0

For Release 11.1.1.9.0, this guide has been updated in several ways. The following table lists the sections that have been added or changed.

For changes made to Oracle JDeveloper and Oracle Application Development Framework (Oracle ADF) for this release, see the What's New page on the Oracle Technology Network at

<http://www.oracle.com/technetwork/developer-tools/jdev/documentation/index.html>.

Sections	Change Description
<b>Chapter 4, "System Administration for ADF Desktop Integration"</b>	
<a href="#">Section 4.1, "Installing and Upgrading ADF Desktop Integration"</a>	Revised to describe the new ADF Desktop Integration add-in installer.
<b>Chapter 5, "WLST Command Reference for ADF Applications"</b>	
<a href="#">Section 5.1, "Overview of Custom WSLT Commands for Oracle ADF"</a>	Revised to move ADF-specific WLST commands to <i>Oracle Fusion Middleware WebLogic Scripting Tool Command Reference</i> .



# Part I

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## Understanding Oracle ADF

Part I contains the following chapter:

- [Chapter 1, "Introduction to Oracle ADF Administration"](#)



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# Introduction to Oracle ADF Administration

This chapter describes the administrative tasks you can perform and the tools you can use to deploy, manage, monitor, and configure applications developed for the Oracle Application Development Framework (Oracle ADF). Some of the tools you will be using are the Oracle Enterprise Manager Fusion Middleware Control, Oracle JDeveloper, and WebLogic Scripting Tool (WLST).

This chapter includes the following sections:

- [Section 1.1, "Introducing Oracle ADF"](#)
- [Section 1.2, "Oracle ADF Architecture"](#)
- [Section 1.3, "Administering Oracle ADF Applications"](#)

## 1.1 Introducing Oracle ADF

The Oracle Application Development Framework (Oracle ADF) builds on Java Platform, Enterprise Edition (Java EE) standards and open-source technologies to provide a complete framework for implementing service-oriented applications. You can use this framework to provide enterprise solutions across different platforms. You can build applications that search, display, create, modify, and validate data for web, web services, desktop, or mobile interfaces.

You use Oracle JDeveloper 11g with Oracle ADF to develop applications with an environment that supports the full development lifecycle of design, test, and deployment. For more information about ADF development, see *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

After you have developed and tested your ADF application in test environments, you can deploy your application to production environments using the tools described in this book. You can monitor the performance of applications as they are running. You can also manage and configure properties and attributes.

## 1.2 Oracle ADF Architecture

Oracle ADF supports the industry-standard model-view-controller architecture to achieve separation of business logic, navigation, and user interface. The MVC architecture provides:

- A model layer that represents the data values
- A view layer that contains the UI components
- A controller layer that handles input and navigation
- A business service layer that encapsulates business logic

The Fusion web application technology stack components are:

- ADF Model, for accessing declarative data binding metadata
- ADF Business Components, for building business services
- ADF Faces rich client, for AJAX-enabled UI components for web applications built with JavaServer Faces (JSF)
- ADF Controller, for input processing, navigation, and reusable task flows

## 1.2.1 ADF Business Components

ADF Business Components are application objects you can use to implement service-oriented Java EE applications. You implement ADF Business Components for clients to query, insert, update, and delete business data. You can apply business rules to the Business Components to enforce proper usage. The key components of ADF Business Components are the entity object, the view object, and the application module.

An *entity object* represents a row in a database table. It uses data manipulation language (DML) operations to modify data. Entity objects are used with others to reflect relationships in the database schema.

A *view object* represents a SQL query. You use the SQL Language to query the database to obtain the results. You can also link a view object with other entity objects to create master-detail hierarchies.

An *application module* is the transactional component that allows UI components to access data. It presents a data model and methods to perform certain tasks.

## 1.2.2 ADF Model

ADF Model implements a service abstraction called *data control*. Data control uses metadata interfaces to abstract business services. This metadata is used to describe data collections, properties, methods, and types. In JDeveloper, data controls appear in the Data Controls panel. When you drag and drop attributes, collections, and methods onto a page, JDeveloper automatically creates the bindings from the page to the associated services.

## 1.2.3 ADF Controller

ADF Controller provides a navigation and state management model that works with JSF. You can create navigational flows called task flows that encapsulate a specific task sequence.

## 1.2.4 ADF Faces Rich Client

ADF Faces provides over 100 rich components that can be used out of the box to create web applications. ADF Faces components provide built-in AJAX functionality to allow requests to be sent to the server without fully rendering the page. JSF provides server-side control to reduce the dependency on JavaScript. The components support skinning, internationalization, and accessibility options.

ADF Faces has a large set of components, including tables, trees, dialogs, accordions, and a variety of layout components. It also includes ADF Data Visualization components, which are Flash- and SVG-enabled, for displaying graphs, charts, and gauges.

## 1.3 Administering Oracle ADF Applications

You can perform a variety of administration tasks on ADF applications. You can deploy ADF applications using Enterprise Manager Fusion Middleware Control, `ojdeploy` command, Ant, or scripts. For WebLogic Server, you can also use WLST commands or the WebLogic Administration Console. For IBM WebSphere Application Server, you can use `wsadmin` commands or the IBM WebSphere Administrative Console.

After the ADF application has been deployed, you can configure application properties using Enterprise Manager Fusion Middleware Control. You can also configure some properties using the MBean Browser to change values in the ADF MBeans. For example, you can use Enterprise Manager Fusion Middleware Control to change the URL connection or WebService connection endpoints or seed the production credentials.

When you run the application, you can monitor performance data on the application modules, application module pooling, and task flows.





# Part II

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## Administering ADF Applications

Part II contains the following chapters:

- [Chapter 2, "Deploying ADF Applications"](#)
- [Chapter 3, "Monitoring and Configuring ADF Applications"](#)
- [Chapter 4, "Administering ADF Desktop Integration"](#)
- [Chapter 5, "Working with WLST Commands for ADF Applications"](#)



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## Deploying ADF Applications

This chapter describes how to deploy Oracle ADF applications packaged as an EAR file to a target application server for production and later stage testing. It describes how to prepare the application server for deployment by installing the ADF runtime. It also describes some of the tools that can be used for deployment including Oracle Enterprise Manager Fusion Middleware Control, scripts, and Ant.

This chapter includes the following sections:

- [Section 2.1, "Introduction to Deploying ADF Applications"](#)
- [Section 2.2, "Preparing the Standalone Application Server for Deployment"](#)
- [Section 2.3, "Deploying Using Oracle Enterprise Manager Fusion Middleware Control"](#)
- [Section 2.4, "Deploying Using Scripting Commands"](#)
- [Section 2.5, "Deploying Using Scripts and Ant"](#)
- [Section 2.6, "Deploying Using the Application Server Administration Tool"](#)

For information about deploying ADF applications for development, see the *Oracle Fusion Middleware Developer's Guide for Oracle Application Development Framework*.

For deploying to third-party application servers, such as IBM WebSphere Application Server, see the "Introduction to Third-Party Application Servers" chapter of the *Oracle Fusion Middleware Third-Party Application Server Guide*.

### 2.1 Introduction to Deploying ADF Applications

Deployment is the process of packaging application files and artifacts and transferring them to a target application server to be run. During application development using JDeveloper, developers can test the application using the Integrated WebLogic Server that is built into the JDeveloper installation, or they can use JDeveloper to directly deploy to a standalone application server.

After the application has been developed, administrators can deploy the application to production application servers. The tools that the administrators use for production-level deployment are:

- Oracle Enterprise Manager Fusion Middleware Control
- WebLogic Scripting Tool (WLST) commands or WebSphere Application Server (wsadmin) commands
- Command scripts and Ant scripts

- Oracle WebLogic Administration Console or IBM WebSphere Administrative Console

This chapter describes the tools and methods that administrators use to deploy ADF applications. For information about deploying ADF applications for development and testing purposes using JDeveloper, see the *Oracle Fusion Middleware Developer's Guide for Oracle Application Development Framework*.

If your application uses customization, you may need to set up the MDS repository in the application server. For more information about MDS, see the *Oracle Fusion Middleware Administrator's Guide*.

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**Note:** Developers, Test, and QA personnel may also use these tools and the methods in this chapter to deploy ADF applications to staging application servers.

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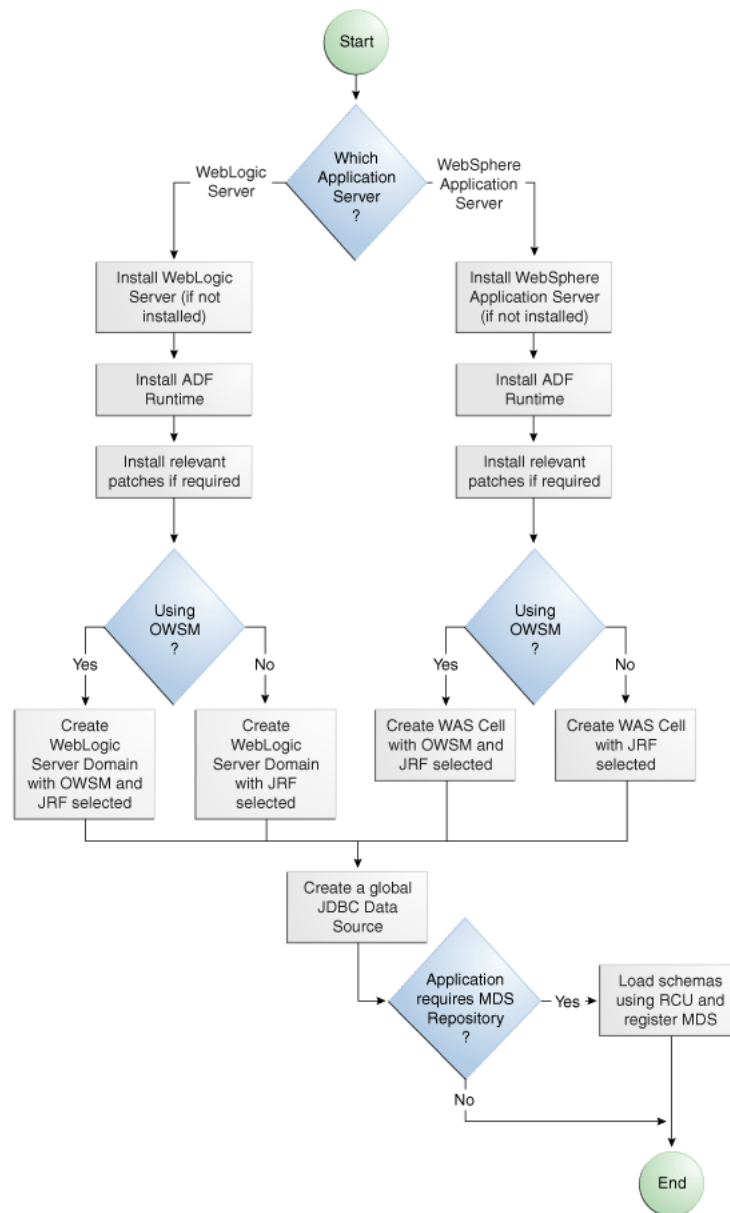
## 2.2 Preparing the Standalone Application Server for Deployment

To run ADF applications, you must install the standalone application server with the ADF runtime. You can include the ADF runtime during a new application server installation or you can install the ADF runtime into an existing application server installation.

[Figure 2-1](#) shows the flow diagram for preparing a standalone application server for deployment. Note the following definitions used in the diagram:

- OWSM: Oracle Web Services Manager
- JRF: Java Required Files
- RCU: Repository Creation Utility
- MDS: Metadata Store

Figure 2-1 Preparing the Application Server Flow Diagram



For WebLogic Server, the following points apply:

- After WebLogic Server has the ADF runtime installed, you can create a new WebLogic Server domain or you can extend an existing WebLogic Server domain for Oracle ADF.
- If the Managed Servers are on a different host than the Administration Server, you must perform additional configuration tasks for the Managed Servers to enable them to host ADF applications.
- An ADF application will use either a JDBC data source or a JDBC URL to access its data. You can configure WebLogic Server with the data source using the Oracle WebLogic Server Administration Console.
- For additional information about the tools available (such as OPatch) for patching your existing Oracle Fusion Middleware environment or upgrading your existing

WebLogic Server environment, see the "Oracle Fusion Middleware Patching and Upgrade Overview" chapter of the *Oracle Fusion Middleware Patching Guide*.

- For additional information about creating and loading the schemas that are necessary for many of the Oracle Fusion Middleware components, see the *Oracle Fusion Middleware Repository Creation Utility User's Guide*.
- For the latest information about Oracle Application Development Framework and Oracle JDeveloper, see the *Oracle JDeveloper Release Notes* on Oracle Technology Network.

For WebSphere Application Server, the following points apply:

- For general information about using IBM WebSphere Application Server with Oracle Fusion Middleware and installation and configuration procedures, see the "Introduction to Third-Party Application Servers" chapter of the *Oracle Fusion Middleware Third-Party Application Server Guide*.
- After WebSphere Application Server has the ADF runtime installed, you can create a new WebSphere cell or you can extend an existing WebSphere cell for ADF.
- For additional information about using the Oracle Fusion Middleware Configuration Wizard to configure WebSphere and the WebSphere cell environment, see the *Oracle Fusion Middleware Configuration Guide for WebSphere*.
- For additional information about the tools available (such as OPatch) for patching your existing Oracle Fusion Middleware environment or upgrading your existing WebSphere Application Server environment, see the "Oracle Fusion Middleware Patching and Upgrade Overview" chapter of the *Oracle Fusion Middleware Patching Guide*.
- For additional information about creating and loading the schemas that are necessary for many of the Oracle Fusion Middleware components, see the *Oracle Fusion Middleware Repository Creation Utility User's Guide*.
- If the servers are on a different node than the Deployment Manager, you must perform additional configuration tasks for the servers to enable them to host ADF applications.
- An ADF application will use either a JDBC data source or a JDBC URL to access its data. You can configure WebSphere Application Server with the data source using the WebSphere Administrative Console.
- For the latest information about Oracle Application Development Framework and Oracle JDeveloper, see the *Oracle JDeveloper Release Notes* on Oracle Technology Network.

## 2.2.1 How to Install the ADF Runtime to the Application Server Installation

The application server requires the ADF runtime to run ADF applications.

Installing the ADF runtime is not required if you are using JDeveloper to run applications in Integrated WebLogic Server.

For WebLogic Server, you can install the ADF runtime using the following installers:

- Oracle Fusion Middleware 11g Application Developer Installer: Installs the ADF runtime and Oracle Enterprise Manager. You should use the Oracle Fusion Middleware 11g Application Developer Installer if you want to use Oracle Enterprise Manager to manage standalone ADF applications (without Oracle SOA Suite or Oracle WebCenter Portal components). You must have already installed Oracle WebLogic Server before you can use this installer.

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**Note:** The Oracle 11g Installer for JDeveloper can also be used to install the ADF runtime to the application server installation. However, it does not include all the components that are typically needed for production and full test environments. Therefore, this installer should not be used for anything other than for development purposes.

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For WebSphere Application Server, you can install the ADF runtime using the following installer:

- Oracle Fusion Middleware 11g Application Developer Installer: Installs the ADF runtime and Oracle Enterprise Manager. You must have already installed WebSphere Application Server before you can use this installer. For more information, see the "Introduction to Third-Party Application Servers" chapter of the *Oracle Fusion Middleware Third-Party Application Server Guide*.

### 2.2.1.1 Installing the ADF Runtime into an Existing WebLogic Server Installation Using the Oracle Fusion Middleware Application Developer Installer

You can use the Oracle Fusion Middleware 11g Application Developer Installer to install the ADF runtime and Enterprise Manager.

Install Oracle WebLogic Server. You must also have obtained the Oracle Fusion Middleware 11g Application Developer Installer.

Use the instructions in the *Oracle Fusion Middleware Installation Planning Guide* to obtain the software and start the installer,

In the installer you will perform several tasks including:

- Adding any software updates
- Selecting the WebLogic Server directory for installation
- Verifying installation information

After you have installed the ADF runtime, follow the instructions in [Section 2.2.2, "How to Create and Extend Oracle WebLogic Server Domains,"](#) to use the Oracle Fusion Middleware Configuration Wizard to create or extend the Oracle WebLogic Server domain.

### 2.2.1.2 Installing the ADF Runtime into an Existing WebSphere Application Server Installation Using the Oracle Fusion Middleware Application Developer Installer

You can use the Oracle Fusion Middleware 11g Application Developer Installer to install the ADF runtime and Enterprise Manager.

Before you begin, you must already have a WebSphere Application Server installation.

Use the instructions in the *Oracle Fusion Middleware Third-Party Application Server Guide* to obtain the software and start the installer.

In the installer you will perform several tasks including:

- Adding any software updates
- Selecting the WebSphere directory for installation
- Verifying installation information

## 2.2.2 How to Create and Extend Oracle WebLogic Server Domains

You need to create and configure the Oracle WebLogic Server domain to accept ADF applications. If you do not already have a domain, you need to create one. If you already have a domain, you must extend the domain before it can run ADF applications.

If you are using Managed Servers to run your applications, you may need to configure your Managed Server. For more information about configuring a Managed Server on Oracle WebLogic Server, see *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

If you are setting up Managed Servers for ADF where the Managed Servers are on the same host as the Administration Server, follow the instructions described in this section.

If you are setting up to deploy to Managed Servers that are on a different host than the Administration Server, perform the additional steps described in [Section 2.2.2.3, "Setting Up Remote WebLogic Managed Servers for Oracle ADF."](#)

### 2.2.2.1 Creating an Oracle WebLogic Server Domain for Oracle ADF

You must create an Oracle WebLogic Server domain if it does not already exist.

#### To create a new Oracle WebLogic Server domain:

1. Start the Oracle Fusion Middleware Configuration wizard as described in the "Configuring Application Developer" chapter of the *Oracle Fusion Installation Guide for Application Developer*.

Follow the directions as described in that guide but consider the following steps.

2. In the Welcome page, select **Create a New WebLogic Domain** and click **Next**.
3. In the Select Domain Source page, select **Generate a domain configured automatically to support the following products**.

The option **Basic WebLogic Server Domain (Required)** is already selected.

Select **Oracle JRF**. If you are using Oracle Web Services, select **Oracle WSM Policy Manager** and click **Next**.

### 2.2.2.2 Extending the Oracle WebLogic Server Domain for Oracle ADF

#### Before you begin:

You must already have an existing Oracle WebLogic Server domain with the ADF runtime installed.

#### To extend an Oracle WebLogic Server domain for ADF:

1. Start the Oracle Fusion Middleware Configuration wizard as described in the "Configuring Application Developer" chapter of the *Oracle Fusion Installation Guide for Application Developer*.

Follow the directions as described in that guide but consider the following steps.

2. In the Welcome page, select **Extend an existing WebLogic domain** and click **Next**.
3. In the Select a WebLogic Domain Directory page, select the location of the domain you want to configure for Oracle ADF, and click **Next**.
4. In the Select Extension Source page, select **Extend my domain automatically to support the following added products**.



The option **Basic WebLogic Server Domain (Required)** is already selected.

Select **Oracle JRF**. If you are using Oracle Web Services, select **Oracle WSM Policy Manager** and click **Next**.

This configures the rest of the runtime .jar files using the manifest file.

---

**Note:** Your application's EAR file must have a `weblogic-application.xml` file containing a reference to the `adf.oracle.domain` shared library.

---

You can now start Oracle WebLogic Server by running the command-line script `ORACLE_HOME\user_projects\domains\domain_name\bin\startWebLogic.cmd`, and you can stop the server using the `stopWebLogic.cmd` script in the same directory. For Linux platforms, use `\bin\startWebLogic.sh` and `stopWebLogic.sh` respectively.

Access the Oracle WebLogic Server Administration Console using the URL `http://localhost:7001/console`.

### 2.2.2.3 Setting Up Remote WebLogic Managed Servers for Oracle ADF

If the WebLogic Managed Servers are on a different host than the Administration Server, you need to perform additional steps.

You will need to set up Managed Servers for Oracle ADF on the host with the Administration Server, pack the JRF template, copy it to the remote host, and unpack the template.

#### To set up remote Managed Servers for Oracle ADF:

1. Use the Oracle Installer for JDeveloper to install Oracle WebLogic Server installations on both the local and remote hosts, if not already installed. If you are not installing JDeveloper Studio, you need to select the **Application Development Framework Runtime** option in the installer. The local host is the host with the Administration Server.

Or, if there are existing Oracle WebLogic Server installations, use the Oracle Installer for JDeveloper to install the ADF runtime into the WebLogic Server installations on both hosts by selecting the **Application Development Framework Runtime** option. For more information on installation, see [Section 2.2.1, "How to Install the ADF Runtime to the Application Server Installation."](#)

2. Run the Oracle Fusion Middleware Configuration Wizard to create a new Oracle WebLogic Server domain. In the wizard, select the **Oracle JRF** option, as described in [Section 2.2.2.1, "Creating an Oracle WebLogic Server Domain for Oracle ADF."](#)
3. On the local host, run the Oracle Fusion Middleware Configuration Wizard to create Managed Servers.
4. On the local host, start the Administration Server and the Managed Server.

For example,

```
cd ORACLE_HOME/user_projects/domain/base_domain/bin
./startWeblogic.sh
./startManagedWebLogic.sh ManagedServer_1 http://localhost:7001
```

5. On the local host, pack the Managed Server configuration information into a JAR and then copy the JAR to the remote host. This JAR contains the JRF template information.

For example,

```
cd ORACLE_HOME/oracle_common/common/bin
./pack.sh -managed=true -domain=../../..../user_projects/domains/base_domain
        -template=../../..../base_domain_managed.jar -template_name=
        "Base Managed Server Domain"
cp ../../..../base_domain_managed.jar remote_machine_ORACLE_HOME/
```

6. On the remote host, unpack the Managed Server configuration JAR.

For example,

```
cd ORACLE_HOME/oracle_common/common/bin
./unpack.sh -domain=../../..../user_projects/domains/base_domain
        -template=../../..../base_domain_managed.jar
```

If the Managed Server was created after the domain was, you must delete the entire domain configuration directory of the Managed Server before running `unpack`.

7. On the remote host, start the Node Manager.

For example,

```
cd ORACLE_HOME/wlserver_10.3/server/bin
./startNodeManager.sh
```

8. On the remote host, if the Managed Server was not created with the JRF template applied, run the `applyJRF WLST` command to extend the Managed Server with the JRF template.

Also, if the Managed Server was created after the domain was, you must delete the entire domain configuration directory of the Managed Server before running `applyJRF`.

9. On the both hosts, start the Managed Servers.

For example,

```
cd ORACLE_HOME/user_projects/domains/base_domain/bin
./startManagedWebLogic.sh ManagedServer_2 http://<adminServerHost>:7001
```

## 2.2.3 How to Create a JDBC Data Source for Oracle WebLogic Server

Use the Oracle WebLogic Server Administration Console to set up a JDBC data source in the WebLogic Server instance for your applications.

### To configure Oracle WebLogic Server for a JDBC data source:

1. Start Oracle WebLogic Server (if not already started) by choosing **Oracle Fusion Middleware > User Projects > Domain > Start Admin Server for WebLogic Server Domain** from the Windows **Start** menu.

For Linux, log in as the root user and navigate to:

```
<ORACLE_HOME>/user_projects/domains/MYSOADomain/bin
```

Run the following command:

```
./startWebLogic.sh
```

Or, from the Application Server Navigator, right-click an Oracle WebLogic Server instance and choose **Launch Admin Console**.

2. Start the Oracle WebLogic Server Administration Console by choosing **Oracle Fusion Middleware > User Projects > Domain > Admin Server Console** from the Windows **Start** menu.
3. Log in to the Oracle WebLogic Server Administration Console.
4. In the WebLogic Server Administration Console page, select **JDBC > Data Sources**.
5. Click **New**.
6. In the JDBC Data Source Properties page:
  - In the **Name** field, enter the name of the JDBC data source.
  - In the **JNDI** field, enter the name of the connection in the form `jdbc/connectionDS`.
  - For the **Database Type**, select **Oracle**.
  - For the **Database Driver**, select **Oracle Driver (thin)**, and click **Next**.
7. In the Transactions Options page, accept the default options and click **Next**.
8. In the Connection Properties page:
  - For **Database Name**, enter the Oracle SID. For example, `orcl`.
  - For **Host Name**, enter the machine name of the database.
  - Enter the port number used to access the database.
  - Enter the user name and password for the database and click **Next**.
9. In the Test Database Connection page, click **Test Configuration** to test the connection.
10. In the Select Targets page, select the server for which the JDBC data source is to be deployed.
11. Click **Finish**.

Once the data source has been created in Oracle WebLogic Server, it can be used by an application module.

### 2.2.4 How to Create a JDBC Data Source for IBM WebSphere Application Server

To configure a JDBC data source for WebSphere Application Server, see the *Oracle Fusion Middleware Configuration Guide for WebSphere*.

## 2.3 Deploying Using Oracle Enterprise Manager Fusion Middleware Control

You can use Oracle Enterprise Manager Fusion Middleware Control to deploy the EAR file created in JDeveloper. Fusion Middleware Control is a Web browser-based, graphical user interface that you can use to monitor and administer a farm. For more information about deploying using Fusion Middleware Control, see the *Oracle Fusion Middleware Administrator's Guide*.

## 2.4 Deploying Using Scripting Commands

Applications or modules can be deployed from JDeveloper without starting the JDeveloper IDE. You can run WLST commands (for WebLogic Server) or wsadmin commands (for WebSphere Application Server) from the command line or sequence them in scripts to run as a batch.

Before deploying from the command line, there must be deployment profiles for the application (EAR) or project (JAR or WAR). JDeveloper creates these deployment profiles automatically for certain types of applications, but before using commands for deployment, it is important to verify that the deployment profile(s) exist. To verify that the profiles exist, choose the **Deployment** node from either the Application Properties or Project Properties dialogs in JDeveloper. For more information about deployment profiles, see the *Oracle Fusion Middleware Developer's Guide for Oracle Application Development Framework*.

JDeveloper can also be used to deploy an application's EAR, WAR, or JAR files. The same scripts that are used for deployment via a command line are also used to deploy via JDeveloper, but JDeveloper creates the syntax and provides a user interface for the deployment.

There are specific WLST commands (WebLogic) for working with ADF applications. For a list of these commands, see [Chapter 5, "Working with WLST Commands for ADF Applications."](#)

For more information about using WLST scripts, see the *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*.

There are specific wsadmin commands (WebSphere Application Server) for working with ADF applications. For a list of these commands, see [Appendix B, "wsadmin Command Reference for ADF Applications."](#)

## 2.5 Deploying Using Scripts and Ant

You can deploy the application using commands and scripts. You create a script to deploy the application using the `ojdeploy` command and use the `ojaudit` command to audit projects, workspaces, or source files of the application. You can also set up the script to run automatically, for instance, whenever a developer checks in new changes.

`ojdeploy` scripts and Ant scripts can be used together or separately:

1. Create an `ojdeploy` script to compile, package, and deploy the application.
2. Create an `ojdeploy` script to compile and package the application. Then use an Ant script (such as `WLDeploy`) to deploy the application.
3. Create an Ant script to compile, package, and deploy the application. The Ant does not need to use `ojdeploy`.

For more information about the `ojdeploy` and `ojaudit` commands, see the JDeveloper online help.

You can deploy to most application servers from JDeveloper, or use tools provided by the application server vendor. You may also use Ant to package and deploy applications. The `build.xml` file, which contains the deployment commands for Ant, may vary depending on the target application server.

For deployment to other application servers, see the application server's documentation. If your application server does not provide specific Ant tasks, you may be able to use generic Ant tasks. For example, the generic `ear` task creates an EAR file for you.

For information about Ant, see <http://ant.apache.org>.

## 2.6 Deploying Using the Application Server Administration Tool

For WebLogic, you can use the Oracle WebLogic Server Administration Console to deploy the EAR file created in JDeveloper. For more information, see *Oracle Fusion Middleware Deploying Applications to Oracle WebLogic Server*.

For WebSphere Application Server, you can use the IBM WebSphere Administrative Console to deploy the EAR file created in JDeveloper. For more information, go to the WebSphere Application Server Information Center at:  
<http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.home.doc/welcome.html>.



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## Monitoring and Configuring ADF Applications

This chapter describes how to monitor ADF application performance. It also describes how to configure an ADF application's properties after it has been deployed to Oracle WebLogic Server. It describes how to use Oracle Enterprise Manager Fusion Middleware Control and its MBean Browser to perform monitoring and configuration tasks. It also describes how to diagnose problems using the Diagnostic Framework.

This chapter includes the following sections:

- [Section 3.1, "Introduction to ADF Application Monitoring and Configuration"](#)
- [Section 3.2, "Monitoring Performance Using Fusion Middleware Control"](#)
- [Section 3.3, "Configuring Application Properties Using Fusion Middleware Control"](#)
- [Section 3.4, "Configuring Application Properties Using the MBean Browser"](#)
- [Section 3.5, "How to Edit Credentials Deployed with the Application"](#)
- [Section 3.6, "Diagnosing Problems using the Diagnostic Framework"](#)
- [Section 3.7, "Viewing Application Metric Information with DMS SPY"](#)
- [Section 3.8, "Configuring WebSphere Application Server"](#)

### 3.1 Introduction to ADF Application Monitoring and Configuration

After you have deployed an ADF application to Oracle WebLogic Server, you can monitor the application performance and configure application properties on the server. You can use Enterprise Manager Fusion Middleware Control to perform these tasks.

Enterprise Manager Fusion Middleware Control offers a user interface for the performance tasks. Some configuration tasks can be performed either from a user interface or by configuring an MBean, as listed in [Table 3-1](#).

**Table 3–1 Configuration Tasks Using Fusion Middleware Control**

Configuration tasks	Fusion Middleware Control UI	Fusion Middleware Control MBean Browser
ADF Business Components	<a href="#">Section 3.3.1, "How to Modify ADF Business Components Parameters"</a>	<a href="#">Section 3.4.3, "How to Modify ADF Business Components Configuration Using MBeans"</a>
ADF connections	<a href="#">Section 3.3.2, "How to Modify Connection Configurations"</a>	<a href="#">Section 3.4.2, "How to Modify ADF Connections Using MBean"</a>
ADF application configuration		<a href="#">Section 3.4.1, "How to Modify ADF Application Configuration Using MBean"</a>
Metadata Services (MDS)		<a href="#">Section 3.4.4, "How to Modify MDS Configuration Using MBean"</a>

By default, the post-deployment changes made using MBeans are stored in MDS with a layer name of `adfshare` and a layer value of `adfshare`. You can provide a specific layer name by specifying the `adfAppUID` property in the application's `adf-config.xml`.

[Example 3–1](#) shows the `adf-properties-child` code in `adf-config.xml`.

**Example 3–1 MDS Layers in the `adf-config.xml` File**

```
<adf:adf-properties-child xmlns="http://xmlns.oracle.com/adf/config/properties">
  <adf-property name="adfAppUID" value="DeptApp.myApp"/>
</adf:adf-properties-child>
```

If you are moving data between MDS repositories (for example, from a test to a production system), use the `MDS exportMetadata` and `importMetadata` commands as described in the chapter on managing the Oracle metadata repository in the *Oracle Fusion Middleware Administrator's Guide* and in the chapter on Metadata Services custom WLST commands in the *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*.

## 3.2 Monitoring Performance Using Fusion Middleware Control

You can monitor the performance of Oracle ADF applications using the Enterprise Manager Fusion Middleware Control.

You can:

- View application module performance
- View application module pool performance
- View task flow performance

### 3.2.1 How to View Application Module Performance

You can view performance information about application modules. Application module components can be used to support a unit of work which spans multiple browser pages.

**Before you begin:**

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.



**To view ADF application module performance:**

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **ADF > ADF Performance** from the dropdown menu.

The ADF Performance page displays. It contains subtabs for viewing performance information about active application module pools and task flows.

### 3.2.2 How to view Application Module Pool Performance

An *application module pool* is a collection of instances of a single application module type which are shared by multiple application clients. One application module pool is created for each root application module used by an ADF web application (ADF Business Components, ADF Controller, or ADF Faces) in each Java virtual machine where a root application module of that type is used by the ADF Controller layer.

**Before you begin:**

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.

**To view application module pooling performance:**

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **ADF > ADF Performance** from the dropdown menu.

The ADF Performance page displays. It contains subtabs for viewing performance information about active Application Module Pools and Task Flows.

6. Click the **Application Module Pools** tab.
7. In the **Module** column, select an application module to display its details in the Application Module Pools table.

No Data Available displays in the Module column if an application has never run.

8. Click a module to display additional informations about the module, for example, Lifetime, State Management, Pool Use, and Application Module Pools Page.

Use the Application Module Pools page to display active application module pools, a collection of application module instances of the same type. The Application Module Pools page:

- Displays size and performance information about pool connections
- Specifies settings that affect how application module pools behave
- Specifies credential information for the application module pools

Element	Description
Module	Displays the active application module pool name, for example, <code>model.BugTest5PM</code> .  Click a module to display additional information about it, for example, Lifetime, State Management, Pool Use, Application Module Pools page.
Requests	Displays the number of requests that were made for the application during the selected time interval.
Average Creation Time (ms)	Displays the average time (in milliseconds) required to complete a request for the application module pool.
Maximum Creation Time (ms)	Displays the longest time (in milliseconds) required to complete any of the requests for the application module pool.
Free Instances	Displays the number of available instances of the application module pool.

### 3.2.3 How to View ADF Task Flow Performance

You can view performance information about task flows. Task flows provide a modular and transactional approach to navigation and application control. Task flows mostly contain pages that will be viewed, but they also can contain activities that call methods on managed beans, evaluate an EL expression, or call another task flow, all without invoking a particular page.

#### Before you begin:

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.

#### To view task flow performance:

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **ADF > ADF Performance** from the dropdown menu.

The ADF Performance page displays. It contains subtabs for viewing performance information about active application module pools and task flows.

6. Click the **Task Flows** tab.

By default, Task Flow Performance charts on the tab display data for the preceding 15 minutes. To set a different interval, click the time at the top of the page or move the slider to another interval, for example, from 08:00 AM to 08:30 AM.

7. Click **TF Charts**.
  - **Request Processing Time** displays the average request processing time for all ADF task flows that execute during the selected interval.
  - **Active Task Flows** displays the number of active instances of each ADF task flow during the selected interval.

### 3.3 Configuring Application Properties Using Fusion Middleware Control

You can use Enterprise Manager Fusion Middleware Control to configure ADF application configuration parameters. These configuration parameters are stored in ADF MBeans. Fusion Middleware Control provides a user interface to configure the ADF Business Components and ADF Connections MBeans. You can also use the System MBean Browser to directly access the underlying MBeans and configure their values. For more information about accessing the underlying MBeans, see [Section 3.4, "Configuring Application Properties Using the MBean Browser."](#)

Fusion Middleware Control provides a user interface for you to:

- Configure ADF Business Component parameters
- Configure connection parameters

#### 3.3.1 How to Modify ADF Business Components Parameters

You control the runtime behavior of an application module pool by setting appropriate configuration parameters. Fusion Middleware Control provides a UI to configure ADF Business Components, as described in this section. You can also configure the ADF Business Components MBeans directly using the generic MBean Browser, as described in [Section 3.4.3, "How to Modify ADF Business Components Configuration Using MBeans."](#)

##### Before you begin:

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.

##### To modify business components parameters:

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.  
After you select an application, the Application Deployment page displays.
5. Click **Application Deployment** and select **ADF > Configure ADF Business Components** from the dropdown menu.
6. Click an **Application Module**.
7. Click the **Pooling and Scalability**, **Core**, **Database**, or **Security** tabs to update configuration parameters.

If the application module uses data sources, you can configure the data sources by clicking **Edit Datasource** from the **Core** tab.

The ADF Business Components configurations page is arranged with the following sections or tabs:

- Application Modules section
- Pooling and Scalability tab - Application Pool Properties
- Pooling and Scalability tab - Connection Pool Properties
- Core tab
- Database Properties tab
- Security Properties tab

### Application Modules Section

In the Application Modules section, select the application module you want to configure.

Element	Description
Application Modules	Displays the active application module name. Click the module name to display the applications in the module.

### Pooling and Scalability Tab - Application Pool Properties

In the Pooling and Scalability tab, select the application pool properties you want to configure.

Element	Description
AmpoolDoampooling	Select to enable application module pooling by default. Whenever you deploy your application in a production environment the default setting of <code>jbo.ampool.doampooling</code> is <code>true</code> and is the way you will run your application. But, as long as you run your application in a test environment, setting the property to <code>false</code> can play an important role in your testing. When this property is <code>false</code> , there is effectively no application pool.
AmpoolWritecookietoclient	No longer required by ADF Business Components. Do not change the default value ( <code>false</code> ). The default is not to create a browser cookie. Formerly used to write the <code>SessionCookie</code> value to the client browser.

Element	Description
AmpoolMaxavailablesize	<p>Enter the maximum number of available application modules that should be referenced by an application pool. This is the ideal maximum number of available application module instances in the pool when not under abnormal load.</p> <p>When the pool monitor wakes up to do resource cleanup, it will try to remove available application module instances to bring the total number of available instances down to this ideal maximum. Instances that have been not been used for a period longer than the idle instance timeout will always get cleaned up at this time, and then additional available instances will be removed, if necessary to bring the number of available instances down to this size.</p> <p>The default maximum available size is 25 instances. Configure this value to leave the maximum number of available instances desired after a resource cleanup. A lower value generally results in more application module instances being removed from the pool on a cleanup.</p>
AmpoolSessioncookiefactoryclass	Enter a custom session cookie factory implementation. This class creates the session cookies that allow clients to retrieve application modules in stateful mode
AmpoolMaxinactiveage	<p>Enter the maximum amount of time (in milliseconds) that an application module may remain inactive before it is removed from the pool.</p> <p>The default is 600000 milliseconds of idle time (which is 600 seconds, or ten minutes). A lower value results in more application module instances being marked as candidates for removal at the next resource cleanup. A higher value results in fewer application module instances being marked as candidates for removal at the next resource cleanup.</p>
AmpoolMinavailablesize	<p>Enter the minimum number of available application modules that should be referenced by an application pool. This is the minimum number of available application module instances that the pool monitor should leave in the pool during a resource cleanup operation.</p> <p>Set to 0 (zero) if you want the pool to shrink to contain no instances when all instances have been idle for longer than the idle timeout after a resource cleanup.</p> <p>The default is 5 instances.</p>
Doconnectionpooling	Select if the application pool should release the application module connection upon checkin. This forces the application module pool to release the JDBC connection used each time the application module is released to the pool.
Recyclethreshold	Enter the maximum number of application module instances in the pool that attempt to preserve session affinity for the next request made by the session. This session used them last before releasing them to the pool in managed-state mode.
AmpoolConnectionstrategyclass	Enter a custom connection strategy implementation, for example <code>oracle.jbo.common.ampool.DefaultConnectionStrategy</code> . This is the class that implements the connection strategy.

Element	Description
Maxpoolcookieage	<p>Enter the maximum browser cookie age for pooled application module sessions. This is the maximum age of the browser cookies used to help clients retrieve stateful application modules. If these cookies do not time out, the value is -1. It is recommended that the maximum cookie age be always set less than or equal to the session cookie age. It is set that way by default (both are -1). If you change the maximum cookie age, then you must also change the session cookie age to the same value.</p>
AmpoolInitpoolsize	<p>Enter an initial number of application module instances to be created in a pool. This is the number of application module instances to created when the pool is initialized.</p> <p>The default is 0 (zero) instances. A general guideline is to configure this value to 10% more than the anticipated number of concurrent application module instances required to service all users.</p> <p>Creating application module instances during initialization takes the CPU processing costs of creating application module instances during the initialization instead of on-demand when additional application module instances are required.</p>
AmpoolDynamicjdbccredentials	<p>Select if an application pool may support multiple JDBC users. This property enables additional pooling lifecycle events to allow developer-written code to change the database credentials (username/password) each time a new user session begins to use the application module.</p> <p>This feature is enabled by default (<code>true</code>); however this setting is a necessary but not sufficient condition to implement the feature. The complete implementation requires additional developer-written code.</p>
AmpoolIsuseexclusive	<p>Select if application module use is exclusive.</p>
AmpoolResetnontransactionalstate	<p>Select if the nontransactional application module state should be reset upon an unmanaged checkin. This forces the application module to reset any nontransactional state like view object runtime settings, JDBC prepared statements, bind variable values, and so on. when the application module is released to the pool in unmanaged, or "stateless," mode.</p> <p>This feature is enabled by default (<code>true</code>). Disabling this feature can improve performance; however, since it does not clear bind variable values, your application needs to ensure that it systemically sets bind variable values correctly. If your application does not do so, and this feature is disabled, then it is possible for one user to see data with another user's bind variable values.</p>
AmpoolMaxpoolsize	<p>Enter the maximum number of application module instances that the pool can allocate. The pool will never create more application module instances than this limit imposes.</p> <p>The default is 5000 instances. A general guideline is to configure this value to 20% more than the initial pool size to allow for some additional growth. If the value is set too low, then some users may see an error when they tries to access the application if no application module instances are available.</p>

Element	Description
AmpoolTimetolive	<p>Enter the connection pool time to live for connection instances. This is the number of milliseconds after which an application module instance in the pool is considered as a candidate for removal during the next resource cleanup, regardless of whether it would bring the number of instances in the pool below <code>minavailablesize</code>.</p> <p>The default is 3600000 milliseconds of total time to live (which is 3600 seconds, or one hour). The default value is sufficient for most applications.</p>
AmpoolMonitorsleepinterval	Enter the length of time (in milliseconds) between pool resource cleanups.
Dofailover	<p>Select if failover should occur upon checkin to the application module pool. This feature enables eager passivation of pending transaction state each time an application module is released to the pool in managed state mode. Web applications should set <code>enable failover</code> (<code>true</code>) to allow any other application module to activate the state at any time. This feature is disabled by default (<code>false</code>).</p> <p><b>Best Practice:</b> When enabling application module state passivation, a failure can occur when Oracle WebLogic Server is configured to forcibly release connection back into the pool. A failure of this type produces a <code>SQLException</code> (Connection has already been closed) that is saved to the server log. The exception is not reported through the user interface. To ensure that state passivation occurs and users' changes are saved, set an appropriate value for the <code>weblogic-application.xml</code> deployment descriptor parameter <code>inactive-connection-timeout-seconds</code> on the <code>&lt;connection-check-params&gt;</code> <code>pool-params</code> element. Setting the deployment descriptor parameter to several minutes, in most cases, should avoid forcing the inactive connection timeout and the resulting passivation failure. Adjust the setting as needed for your environment.</p>
poolClassName	Enter the custom application pool implementation class.
Show Connection Pool Properties	Expand to display fields containing current advanced connection pool properties, or enter new values in the fields.
Hide Connection Pool Properties	Click to hide all Connection Pool Properties fields.

### Pooling and Scalability Tab - Connection Pool Properties

In the Pooling and Scalability tab, select the connection pool properties you want to configure.

Element	Description
Initpoolsize	<p>Enter the initial size of a JDBC connection pool. This is the number of JDBC connection instances created when the pool is initialized.</p> <p>The default is an initial size of 0 instances.</p>

Element	Description
Maxpoolsize	<p>Enter the maximum size of a JDBC connection pool. This is the maximum number of JDBC connection instances that the pool can allocate. The pool will never create more JDBC connections than this allows.</p> <p>The default is 5000 instances.</p>
Poolmaxinactiveage	<p>Enter the maximum amount of time (in milliseconds) that a connection may remain inactive before it is removed from the pool. This is the number of milliseconds after which to consider an inactive application module instance in the pool as a candidate for removal during the next resource cleanup.</p> <p>The default is 600000 milliseconds of idle time (which is 600 seconds, or ten minutes). A lower value results in more application module instances being marked as candidates for removal at the next resource cleanup. A higher value results in fewer application module instances being marked as candidates for removal at the next resource cleanup.</p>
Poolmaxavailablesize	<p>Enter the maximum number of available connections that should be referenced by a connection pool. This is the ideal maximum number of JDBC connection instances in the pool when not under abnormal load.</p> <p>When the pool monitor wakes up to do resource cleanup, it will try to remove available JDBC connection instances to bring the total number of available instances down to this ideal maximum. Instances that have been not been used for a period longer than the idle instance timeout will always get cleaned up at this time, and then additional available instances will be removed, if necessary, to bring the number of available instances down to this size.</p> <p>The default is an ideal maximum of 25 instances (when not under load).</p>
Poolrequesttimeout	<p>Enter the time (in milliseconds) that a request should wait for a JDBC connection to be released to the connection pool.</p>
Poolminavailablesize	<p>Enter the minimum number of available connections that should be referenced by a connection pool. This is the minimum number of available JDBC connection instances that the pool monitor should leave in the pool during a resource cleanup operation.</p> <p>Set to zero (0) if you want the pool to shrink to contain no instances when instances have been idle for longer than the idle time-out.</p> <p>The default is to not let the minimum available size drop below 5 instances.</p>
Poolmonitorsleepinterval	<p>Enter the time (in milliseconds) that the connection pool monitor should sleep between pool checks. This is the length of time in milliseconds between pool resource cleanup.</p> <p>While the number of application module instances in the pool will never exceed the maximum pool size, available instances which are candidates for getting removed from the pool do not get "cleaned up" until the next time the application module pool monitor wakes up to do its job.</p>



Element	Description
ConnectionPoolManager	Enter the implementation of the connection pool manager which will be used.
Pooltimetolive	Enter the application pool time to live (in milliseconds) for application module instances.

### Core Tab

Use the core tab to view or edit core properties for the application module.

Element	Description
DefaultLanguage	Enter the default business components session language, which is part of the locale.
Passivationstore	Enter the type of store, file, or database file that should be used for application module passivation.  database is the default choice. While it may be a little slower than passivating to file, it is by far the most reliable choice.  file may offer faster performance because access to the file is faster than access to the database.
Default Country	Enter the default business components session country, which is part of the Locale.
AssocConsistent	Select if entity row set associations have been kept consistent.
XmlValidation	Select to determine the validation mode for the XML parser. If selected, the XML parser uses strict XML validation.
DatabaseConfig	Database Configuration.
Name	Enter the name of the application module.
OracleSchema	Enter the name of the schema in which the business components runtime libraries are deployed.
Show Advanced Properties	Expand to display fields containing current advanced core properties, or enter new values in the fields.
PersMaxRowsPerNode	Enter the maximum size of a node for view row spillover.
PassivationTrackInsert	If selected when an application module is activated, it will be updated to include rows inserted into the database while it was passive.
ApplicationPath	For EJB deployment, enter the JNDI path to the business components.
ViewlinkConsistent	If selected, the view object row sets retrieved through view link accessors will include rows that have been added, even if these changes have not been posted to the database.
ConnectionMode	Deprecated property, formerly used for deployment to VisiBroker. VisiBroker deployment is no longer supported.
Maxpassivationstacksize	Enter the maximum size of the passivation stack (default is 10)

Element	Description
TxnHandleafterpostexc	Select to cause ADF Business Components to take a transaction snapshot before beginning a commit operation. If an exception is thrown after changes have been posted to the database, ADF Business Components will use this snapshot to roll back the in-memory state of your application module to the point before commit operation began.
SnapshotstoreUndo	Enter the target for undo snapshots {transient   persistent}
Project	Enter the name of the project containing extended business components to be substituted for base ones, if Factory-Substitution-List is not empty.
Tmpdir	Enter the directory for temporary Oracle ADF Business Components files.
DeployPlatform	The deployment platform: select LOCAL, EJB_IAS (for an EJB deployed to Oracle Application Server), or WLS (for an EJB deployed to Oracle WebLogic Server).
PersMaxActiveNodes	Enter the maximum number of nodes that will be cached in memory for view row spillover.
Saveforlater	Select Save snapshots for the lifetime of the transaction.
ViewCriteriaAdapter	Enter a custom class that will be used by view objects to convert between view criteria and view object SQL.
Connectfailover	Select business components transparent JDBC connection failover
Hide Advanced Properties	Click to hide all Connection Pool Properties fields.

### Database Properties Tab

If you are using a JDBC URL for your connection information so that the ADF database connection pool is used, then the configuration parameters listed here can be used to tune the behavior of the database connection pool.

Element	Description
MaxCursors	Enter the maximum number of cursors to be used by the session. This is the maximum number of cursors the business components may have open. The framework will clean up free JDBC statements as the number of cursors approaches this number.
Sql92DbTimeQuery	Enter the database system time SQL query string.
SQLBuilder	Enter the SQLBuilder implementation (Oracle, OLite, DB2, or SQL92 for other SQL92-compliant databases).
Sql92LockTrailer	Enter the SQL statement trailer clause for locking.
JdbcTrace	Select to trace all JDBC activity with lines flagged by + PropertyConstants.JDBC_MARKER +
oracleDefineColumnLength	Enter the column length for all JDBC CHAR or VARCHAR2 columns. Use <code>as_bytes</code> to make column precision specifications in bytes. Use <code>as_chars</code> to make column precision specifications in characters. This is important for larger character sets, such as Unicode.

Element	Description
Sql92JdbcDriverClass	Enter the name of the class implementing JDBC Driver, for example, <code>sun.jdbc.odbc.JdbcOdbcDriver</code> .
TypeMapEntries	Enter the type map implementation. This specifies a custom type map between Java types and SQL types.
ControlTableName	Enter the persistent collection control table name.
FetchMode	Enter the control fetch behavior of View Objects (+ <code>PropertyConstants.ENV_FETCH_AS_NEEDED</code> + " " + <code>PropertyConstants.ENV_FETCH_ALL</code> + ).  AS.NEEDED causes view objects to fetch rows only when they are requested. ALL causes them to fetch the entire results of their queries.
LockingMode	Enter the default locking mode for an application module. This prevents the application module pool from creating a pending transaction state on the database with row-level locks each time the application module is released to the pool.  Fusion web applications should set the locking mode to optimistic to avoid creating the row-level locks.
JdbcBytesConversion	Indicate whether to use JDBC default bytes conversion or to perform such conversion in the framework.
Show Advanced Properties	Expand to display fields containing current advanced database properties, or enter new values in the fields.
TxnSeqInc	Select persistent transaction sequence increment.
UsePersColl	Select enable view row spillover to help manage large rowsets.
TxnSeqName	Enter persistent transaction sequence name.
Hide Advanced Properties	Click to hide all advanced property fields.

### Security Properties Tab

Use the Security Properties tab to configure application module security information.

Element	Description
SecurityContext	Enter the JAAS context. This element specifies a particular JAAS implementation.  The default is JAZN.
Show Advanced Properties	Expand to display fields containing current advanced security properties, or enter new values in the fields.
UserPrincipal	Enter the authenticated user principal name.
SecurityConfig	Enter the complete path and file name of JAZN configuration, for example, <code>k:\j2ee\home\config\jazn.xml</code> .  If this property value is null or length 0, runtime will assume that <code>jazn.xml</code> is in the same path as <code>jazn.jar</code> and append <code>/config/jazn.xml</code> before it accesses login module or gets the JAZN context for getting permission manager.
javaNamingSecurityCredentials	For EJB deployment, enter the password for the application server connection.

Element	Description
AppModuleJndiName	For EJB deployment, enter the JNDI name used to look up the application module factory.
SecurityLoginmodule	Enter a custom login module for authentication, for example, <code>oracle.security.jazn.realm.RealmLoginModule</code> . The default is the JAZN login module.
ServerUseNullDbTransaction	Use 9.0.2 compatible <code>oracle.jbo.server.NullDbtransactionImpl</code> when not connected to the database.
SecurityEnforce	Enter one of the following values: <b>None</b> - No authentication. <b>Test</b> - Requires authentication. If using the tester or ADF Swing, a dialog will prompt for login. If authentication fails, the application module is still instantiated. <b>Must</b> - Like Test, but if authentication fails, the application module will not be instantiated. Instead, you will get an exception. <b>Auth</b> - Like Must, but in addition, if you have used the Entity Wizard Authorization editor to define entity or attribute permissions, the permissions will be checked. For example if the permission on <code>Dept.Deptno</code> was granted <code>update_while_new</code> to role users, then the users role can set the <code>Deptno</code> value only when the row is new. Otherwise, it is not editable. Note that even if there are permissions granted via the wizard, they will not be enforced unless <code>jbo.security.enforce</code> is set to <code>Auth</code> .
javaNamingSecurityPrincipal	For EJB deployment, enter the password for the application server connection.
Hide Advanced Properties	Click to hide all advanced property fields.

### 3.3.2 How to Modify Connection Configurations

A connection configuration contains information that a client application uses to identify the ADF application module's deployment scenario. You use Oracle Enterprise Manager Fusion Middleware Control to:

- Register and manage back-end services such as mail, discussion forums servers, and so on
- Register and manage external applications that users need access to while working with applications
- Register and manage any portlet producers that the application uses or that users may need access to

Fusion Middleware Control provides a UI to configure ADF connections, as described in this section. You can also configure the ADF connections MBean directly using the generic MBean Browser, as described in [Section 3.4.2, "How to Modify ADF Connections Using MBean."](#)

#### Before you begin:

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.

You must have MDS configured in your application before you can modify the ADF application and connection configurations. ADF connection attributes are persisted to MDS.

If you deployed an application to several nodes within a cluster, any ADF connection changes to a single node will be propagated to all the other nodes. MDS will store a single set of connection information for all versions of an application.

**To modify connection configurations:**

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **ADF > Configure ADF Connections** from the dropdown menu.
6. In the **Connection Type** drop-down list, choose the type of connection you want to configure:
  - ADF BC Service
  - Discussions and Announcements
  - File System
  - Mail Server
  - Secure Enterprise Search
  - URL
  - Web Service

You cannot create an Essbase connection, however, you can edit an existing Essbase connection that was deployed with the application.

7. In the **Connection Name** field, enter a unique name for the connection configuration.
8. Click **Create Connection**.

The Connection Configuration page updates with a section where you can specify options for the connection type you chose.

The following connection types are supported:

- ADF Business Components Service connection
- Essbase connection
- Discussions and Announcements connection
- File system connection
- Mail server connection
- Secure enterprise search connection
- URL connection
- Web Service connection

### ADF Business Components Service Connection

Use the ADF Business Components Service connection page to create a new ADF Business Components Service connection or to modify existing connection details.

Element	Description
serviceEndpointProvider	Enter the provider of the service endpoint. Valid types are <i>ADFBC</i> , <i>Fabric</i> , <i>SOAP</i> .
serviceConnectionName	Enter the service connection name.
jndiName	Enter the JNDI name of the EJB that implements the service interface. Applicable when the endpoint is <i>ADF BC</i> .
jndiFactoryInitial	Enter the class name of initial context factory for JNDI lookup. Applicable when the endpoint is <i>ADF BC</i> .
jndiProviderURL	Enter configuration information for the JNDI lookup. Applicable when endpoint is <i>ADF BC</i> .
jndiSecurityPrincipal	Enter the identity of the principal (e.g. user) for the JNDI lookup. Applicable when the endpoint is <i>ADF BC</i> .
jndiSecurityCredentials	Enter the principal's credentials for JNDI lookup. Applicable when the endpoint is <i>ADF BC</i> .
fabricAddress	Enter the service name of the SOA composite. Applicable when the endpoint is <i>Fabric</i> .
serviceInterfaceName	Enter the class name of the service endpoint interface.
serviceSchemaName	Enter the name of the service schema file.
serviceSchemaLocation	Enter the relative path of the service schema file.

### Essbase Connection

You cannot create an Essbase connection; however, you can edit an existing Essbase connection that was deployed with the application.

Element	Description
Host	Enter the host that this connection represents.
Port	Displays the default port that this connection uses to connect to Essbase. Clear the Default option to enter a port other than the default.
Username	Enter the user name authorized to connect to Essbase during design time. This user name is replaced at runtime with the user name specified by the application.
Password	Enter the password of the user. An asterisk (*) is displayed for each character you enter in this field.

### Discussions and Announcements Connection

Use the Discussion Forum Connection pages to connect to a new discussions server connection or to modify existing connection details. Forum Connections configuration includes configurations for name, connection details, and advanced.

### Discussions and Announcements Connection - Name

Element	Description
Name	Enter a unique name for the connection.

### Discussions and Announcements Connection - Connection Details

Element	Description
Server URL	Enter the URL of the discussion server hosting the discussion forums. For example: <code>http://discuss-server.com:8888/owc_discussions</code>
Administrator User Name	Enter the user name of the discussion server administrator. Administrative privileges are required for this connection so that operations can be performed on behalf of Oracle WebCenter Portal users.
Connection Timeout (in Seconds)	.Enter the connection timeout in seconds. The default is -1.
Connection Secured	Indicate whether or not the discussion server connection is secure.

### Discussions and Announcements Connection - Advanced Configuration

Element	Description
Cache Size (in MB)	Specify the amount of space reserved for the cache (in MB). The default is 0.
Cache Expiration Time (in Minutes)	Specify a suitable expiration period for the cache. This is the maximum length of time (in minutes) that cached content is valid. The default is 0.
Connection Timeout (in Seconds)	Specify a suitable timeout for the connection. This is the length of time (in seconds) that the WebCenter Portal application waits for a response from the discussion server before issuing a connection timeout message. The default is 60 seconds.

### File System Connection

Use the Add/New Content Repository Connection pages to connect to a new content repository or to modify existing connection details.

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**Note:** All configuration changes are stored in the MDS repository.

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### File System Connection Details - File System

Element	Description
Root Path	<p>Enter the full path to a folder on a local file system in which your content is placed. For example: C:/MyContent</p> <p><b>Caution:</b> File system content <i>must not</i> be used in production or enterprise application deployments. This feature is provided for development purposes only.</p>

### Mail Server Connection

Use the Mail Server connection pages to configure LDAP and advanced mail server configurations

Element	Description
IMAP Host	Enter the host name of the machine where the IMAP service (Internet Message Access Protocol) is running.
IMAP Port	Enter the port on which the IMAP service listens.
IMAP Secured	Indicate whether a secured connection (SSL) is required for incoming mail over IMAP.
SMTP Host	Enter the host name of the machine on which the SMTP service (Simple Mail Transfer Protocol) is running.
SMTP Port	Enter the port on which the SMTP service listens.
SMTP Secured	Indicate whether a secured connection (SSL) is required for outgoing mail over SMTP.
Associated External Application	Associate the mail server with an external application. External application credential information is used to authenticate users against the IMAP server.

### Mail Server Connection - LDAP Configuration

Element	Description
LDAP Domain	Enter the LDAP domain.
LDAP Host	Enter the host name of the LDAP (Lightweight Directory Access Protocol) server.
LDAP Port	Enter the port on which the LDAP service listens.
LDAP Secured	Indicate whether a secured connection (SSL) is required for the LDAP connection.
LDAP Administrator User Name	Enter the user name of the LDAP server administrator.
LDAP Administrator Password	Enter the password for the LDAP server administrator.
LDAP Base DN	Enter the base-distinguished name for the LDAP schema.
LDAP Default User	Enter the LDAP default user.



## Mail Server Connection - Advanced Configuration

Element	Description
Connection Timeout (in Seconds)	Specify a suitable timeout for the connection. This is the length of time (in seconds) that the WebCenter Portal application waits for a response from the mail server before issuing a connection timeout message. The default is 60 seconds.
Cache Expiration Time (in Minutes)	Specify a suitable expiration period for the cache. This is the maximum length of time (in minutes) that cached content is valid. The default value (-1) means that the cache never expires.

## Secure Enterprise Search Connection

Use the Secure Enterprise Search Connection pages to connect the WebCenter Portal application to a new Oracle Secure Enterprise Search server or to modify existing connection details.

Secure Enterprise Search Connection Provider configuration includes configurations for name, connection details, and advanced configurations.

## Secure Enterprise Search Connection - Name

Element	Description
Connection Name	Enter a unique name for the connection.
Active Connection	Select to use this connection for search-related services in the WebCenter Portal application.  You can register multiple search connections through Oracle Enterprise Manager Fusion Middleware Control, but only one connection is active at a time.

## Secure Enterprise Search Connection - Connection Details

Element	Description
SOAP URL	Enter the Web Service URL that Oracle Secure Enterprise Search exposes to enable search requests.  Use the format: <code>http://&lt;host&gt;:&lt;port&gt;/search/query/OracleSearch</code> For example: <code>http://myHost:7777/search/query/OracleSearch</code>
Application User Name	Enter the name of a valid user.  You can specify the name of any user in the identity store. The user must be present in both the Oracle Identity Management server configured for your WebCenter Portal application and the Oracle Identity Management server configured for Oracle SES.  The WebCenter Portal application must authenticate itself as a trusted application to Oracle Secure Enterprise Search so that it may perform searches on behalf of WebCenter Portal users.
Application Password	Enter the appropriate user password.

### Secure Enterprise Search Connection - Advanced Configuration

Element	Description
Oracle Secure Enterprise Search Data Group	Enter the Secure Enterprise Search data group in which to search.
Execution Timeout	Enter the search execution timeout in milliseconds.
Executor Preparation Timeout	Enter the search executor preparation timeout in milliseconds.
Number of Saved Searches	Enter the number of saved searches displayed.
Simple Search Result Rows	Enter the number of results displayed from a simple search, for each service.
Search Result Rows	Enter the number of search results displayed for each service.
Global Search Result Rows	Enter the number of search results displayed (on the toolbar) for each service.

### URL Connection

Use the URL Connection pages to configure URL connections.

Element	Description
URL	Enter the URL of the desired data stream, but omit any URL parameters.
Username	Enter the username require to enter the web site.
Password	Enter the password required to enter the web site.
AuthenticationRealm	Defines the Realm as in HTTP authentication. Defined by the server hosting the protected resources.
Proxy	Defines the proxy to be used for connecting to HTTP/HTTPS resources. Specifies the host/port and any authentication details needed to authenticate against the proxy itself.
ProxyUseDefault	Uses the default proxy at the system level instead of the connection level at both DT or RT, or wherever the connection instance is active. At design time, the default proxy will be the JDeveloper IDE proxy settings, at runtime, it will be the one configured for WLS.
ConnectionClassName	Indicates the type of challenge authentication. The two supported modes are Basic and Digest authentication (HTTP basic & digest).
ChallengeAuthenticationType	The class name of the connection that gets loaded into the reference to be used by the factory to construct the connection instance.

### Web Service Connection

Use the Web Service Connection page to configure a connection using the WebService MDDS model based on the service WSDL to call and invoke the WebService.

Use the **Configure Web Service** dropdown list to configure the Web Service Client, including attaching and detaching policy. After you have finished the configuration in the web services page, you can use the breadcrumbs to navigate back to the ADF Connections page.

Element	Description
Model	Enter the WebService MDDS model elements generated based on the service WSDL.
WsdlUrl	Enter the WebService service WSDL URL.
DefaultServiceName	Enter the default service Name of the service WSDL.

### 3.4 Configuring Application Properties Using the MBean Browser

You can use the Enterprise Manager Fusion Middleware Control MBean Browser to access and modify the values in ADF MBeans deployed with the ADF application into Oracle WebLogic Server.

You can view and modify:

- ADFcConfiguration MBean
- ADF Connections MBean
- ADF Business Components BC4J MBeans
- MDS Configuration MBeans

#### 3.4.1 How to Modify ADF Application Configuration Using MBean

You can modify ADF application configurations MBeans using the MBean Browser.

##### Before you begin:

You must have MDS configured in your application before you can modify the ADF application and connection configurations. ADF application attributes are persisted to MDS.

If you deployed an application to several nodes within a cluster, any ADF application configuration changes to a single node via an MBean will be propagated to all the other nodes. MDS will store a single set of ADF application configuration information for all versions of an application.

##### To modify ADF application configuration using MBean Browser:

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

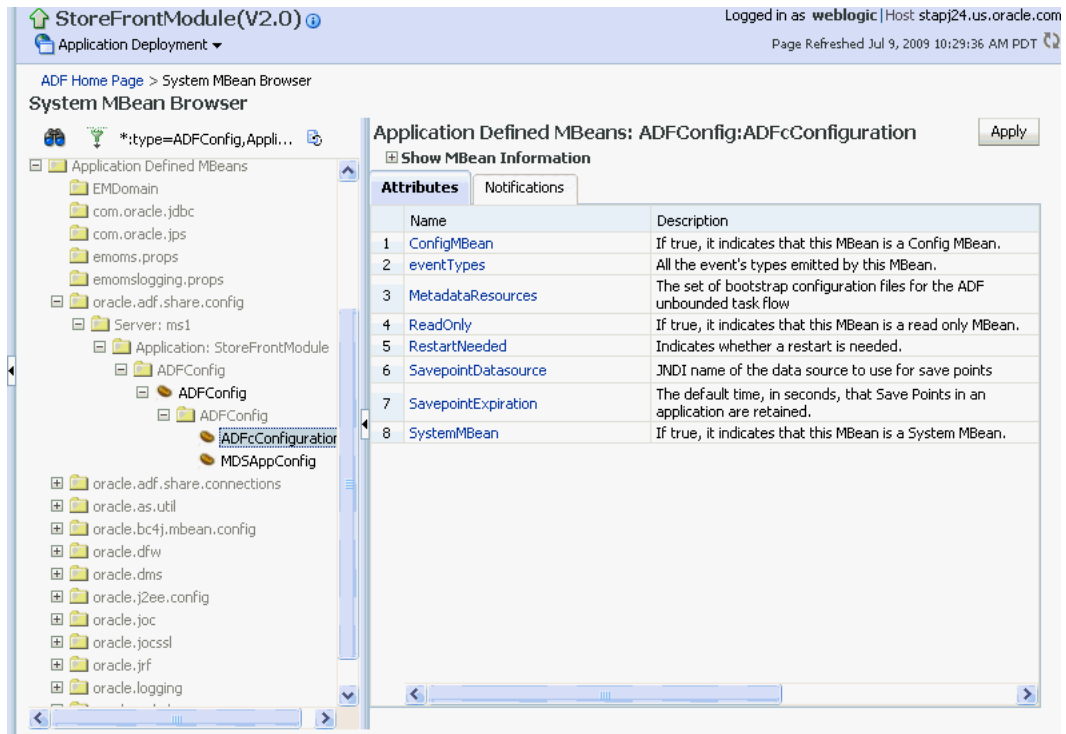
5. Click **Application Deployment** and select **ADF > Configure ADF (adf-config)** from the dropdown menu.
6. In the left pane of the System MBean Browser, expand the parent ADF MBean **ADFConfig** and then the **ADFConfig** folder to expose the child ADF MBeans.

You may see the child ADF MBeans **ADFConfiguration** and **MDSAppConfig**.

7. In the left pane, select the **ADFConfiguration** MBean, and in the right pane, select the attribute you want to view or modify.

Figure 3–1 shows an ADF Configuration MBean in the Fusion Middleware Control MBean Browser.

**Figure 3–1 ADF Configuration MBean**



8. Change the attribute value and click **Apply**.
9. In the left pane, select the parent ADF MBean **ADFConfig**.
10. In the right pane, click the **Operations** tab and click **save**.

The new values you have edited are written to MDS after you click **save** from the parent MBean.

### 3.4.2 How to Modify ADF Connections Using MBean

You can modify ADF connection configurations MBean using the MBean Browser.

You can also modify ADF connections using the Fusion Middleware UI described in [Section 3.3.2, "How to Modify Connection Configurations."](#)

#### Before you begin:

You must have MDS configured in your application before you can modify the ADF application and connection configurations. ADF application attributes are persisted to MDS.

If you deployed an application to several nodes within a cluster, any ADF connection changes to a single node via an MBean will be propagated to all the other nodes. MDS

will store a single set of ADF application configuration information for all versions of an application.

### To modify ADF application configuration using MBean Browser:

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **System MBean Browser** from the dropdown menu.
6. In the left pane of the System MBean Browser, navigate to the **ADFConnections** MBean. The MBean should be in **oracle.adf.share.connections > server name > application name**.
7. In the left pane, select the ADF Connections MBean, and in the right pane, select the attribute you want to view or modify.

Figure 3–2 shows an ADF Connections MBean displayed in the Fusion Middleware Control MBean Browser.

**Figure 3–2 ADF Connections MBean**

The screenshot shows the Fusion Middleware Control interface. The top bar indicates the user is logged in as 'weblogic' on host 'stapj24.us.oracle.com'. The page title is 'BC\_MultAM\_MultipleXcfg\_application1' and it shows 'Application Deployment' as the current view. The 'System MBean Browser' is open, displaying a tree view on the left. The tree is expanded to 'oracle.adf.share.connections > Server: ms1 > Application: BC\_MultAM\_Multip > ADFConnections > ADFConnections'. The right pane shows 'Application Defined MBeans: ADFConnections:ADFConnection:' with a 'Show MBean Information' tab selected. Below this, there are three tabs: 'Attributes', 'Operations', and 'Notifications'. The 'Attributes' tab is active, displaying a table with 11 attributes.

Name	Description
1 ConfigMBean	If true, it indicates that this MBean is a ConfigMBean.
2 ConnectionChildMBeans	Get list of child MBeans
3 ConnectionTypes	Lists the connection types that are supported by this MBean.
4 eventProvider	If true, it indicates that this MBean is an event provider.
5 eventTypes	All the event's types emitted by this MBean.
6 objectName	The MBean's unique JMX name
7 ReadOnly	If true, it indicates that this MBean is a read-only MBean.
8 RestartNeeded	Indicates whether a restart is needed.
9 stateManageable	If true, it indicates that this MBean provides state management capabilities as defined by JSR-77.
10 statisticsProvider	If true, it indicates that this MBean is a statistics provider.
11 SystemMBean	If true, it indicates that this MBean is a System MBean.

8. Change the attribute value and click **Apply**.
9. In the right pane, click the **Operations** tab and click **save**.

The new values you have edited are written to MDS after you click **save**.

### 3.4.3 How to Modify ADF Business Components Configuration Using MBeans

You can modify ADF Business Components configurations MBeans using the MBean Browser. ADF Business Component configuration information are stored in MBeans that are specific for each application. Unlike ADF connections and ADF application configuration information which you can configure once for all versions of the same application, you will need to configure ADF Business Components for each version of the application.

You can also modify ADF Business Components configuration information using the Fusion Middleware UI described in [Section 3.3.1, "How to Modify ADF Business Components Parameters."](#)

#### **Before you begin:**

You must have MDS configured in your application before you can modify the ADF application and connection configurations. ADF application attributes are persisted to MDS.

If you deployed an application to several nodes within a cluster, any ADF Business Components changes to a single node via MBeans will be propagated to all the other nodes. MDS will store a single set of ADF application configuration information for all versions of an application.

#### **To modify ADF application configuration using MBean Browser:**

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule (AdminServer)*.

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **System MBean Browser** from the dropdown menu.
6. In the left pane of the System MBean Browser, navigate to the BC4J MBeans. These MBeans should be in `oracle.bc4j.mbean.share > server name > application name`.
7. In the left pane, select the ADF Connections MBean, and in the right pane, select the attribute you want to view or modify.
8. Change the attribute value and click **Apply**.

### 3.4.4 How to Modify MDS Configuration Using MBean

You can use the MBean Browser to perform advanced configuration of MDS parameters. For more information about configuring MDS using MBeans, see the *Oracle Fusion Middleware Administrator's Guide*.

#### **Before you begin:**

You must already have deployed an Oracle ADF application and have Enterprise Manager Fusion Middleware Control available to access the application.

**To modify MDS configuration using MBean Browser:**

1. Log in to an Oracle Fusion Middleware farm using Fusion Middleware Control.
2. Click the **Farm** tab.
3. Expand the *Farm\_domain* node.
4. Expand the **Application Deployments** node and click a J2EE application deployment, for example, *StoreFrontModule* (AdminServer).

After you select an application, the Application Deployment page displays.

5. Click **Application Deployment** and select **MDS Configuration** from the dropdown menu.
6. Click **Configuration MBean Browser** or **Runtime MBean Browser**.
7. Select the MBean and the attribute you want to view or modify.

Figure 3–3 show an MDS MBean in the Fusion Middleware Control MBean Browser.

**Figure 3–3** MDS MBean

The screenshot shows the Fusion Middleware Control interface. The top bar indicates the user is logged in as 'weblogic' on host 'stapj24.us.oracle.com'. The main window title is 'StoreFrontModule(V2.0)'. The left sidebar shows a tree view of the system MBeans, with 'MDSAppConfig' selected under 'Application: StoreFrontModule' > 'ADFConfig' > 'ADFConfig'. The main area displays 'Application Defined MBeans: ADFConfig:MDSAppConfig' and a table of attributes.

Name	Description
1 AppMetadataRepositoryInfo	Metadata repository partition where the application is deployed.
2 AutoPurgeTimeToLive	Automatically purge versions of metadata documents older than the given time interval specified in seconds.
3 ConfigMBean	If true, it indicates that this MBean is a Config MBean.
4 DeployTargetRepository	The repository where the application's metadata is deployed.
5 eventTypes	All the event's types emitted by this MBean.
6 ExternalChangeDetection	Enables the application to detect applicable metadata changes performed external to the application.
7 ExternalChangeDetectionInterval	The maximum time interval in seconds with which the application will detect external metadata changes. This parameter is only valid if ExternalChangeDetection is enabled.
8 MaximumCacheSize	The maximum metadata cache size limit in kilobytes.
9 ReadOnly	If true, it indicates that this MBean is a read only MBean.
10 ReadOnlyMode	Switches the application into read only mode so no metadata updates will be made.
11 RestartNeeded	Indicates whether a restart is needed.
12 RetryConnection	Enables the application to retry to connect to the metadata repository after connection failure.
13 SharedMetadataRepositoryInfo	Shared metadata repository partition(s) referenced by the application.
14 SystemMBean	If true, it indicates that this MBean is a System MBean.

8. Change the value and click **Apply**.

### 3.5 How to Edit Credentials Deployed with the Application

You can use Enterprise Manager Fusion Middleware Control to edit credentials that were deployed with an ADF application to the credential store. You can also create new credentials and delete existing credentials.

For ADF applications, the following considerations apply:

- The **Map** name is typically the `adfAppUIId` property defined in the application's `adf-config.xml` file.
- The **Key** name is typically in the format `anonymous#connection`, where `connection` is the connection name.
- The **Credential Type** is **Generic** and it is modeled as a hash map of key-value pairs.

For more information, see the "Managing Credentials with Fusion Middleware Control" section of the *Oracle Fusion Middleware Application Security Guide*.

## 3.6 Diagnosing Problems using the Diagnostic Framework

Oracle Fusion Middleware provides a Diagnostic Framework to help you detect, diagnose, and resolve problems with your application

When a critical error occurs, the Diagnostic Framework immediately captures diagnostic data and associates the data and error with an incident number. Using this number, you can retrieve the data for analysis from the Automatic Diagnostic Repository (ADR).

Oracle ADF provides an ADFConfig dump which will execute when an INCIDENT\_ERROR message is logged. You can also add code to invoke the dump in the application exception handlers. [Example 3–2](#) show a sample code you can add to your exception handler to invoke the ADFConfig dump.

### **Example 3–2 Sample Code for Invoking ADFConfig Diagnostic Dump in Exception Handler**

```
IllegalArgumentException e = new IllegalArgumentException("test exception");
LoggerFactory.getFrameworkLogger().log(ODLLevel.INCIDENT_ERROR,
    "Test error message", e);
```

For more information about the Diagnostic Framework, see the chapter on diagnosing problems in the *Oracle Fusion Middleware Administrator's Guide*.

If you are using the Diagnostic Framework on an IBM WebSphere application server, you need to perform additional tasks. For more information, see the *Oracle Fusion Middleware Third-Party Application Server Guide*.

## 3.7 Viewing Application Metric Information with DMS SPY

You can use the DMS Spy servlet to view application metric information in a web browser.

For more information, see the "Monitoring Oracle Fusion Middleware" section in the *Oracle® Fusion Middleware Performance and Tuning Guide*

## 3.8 Configuring WebSphere Application Server

You use the WebSphere Application Server administrative console to configure WebSphere Application Server. For more information, go to the WebSphere Application Server Information Center at:  
<http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.home.doc/welcome.html>.



### 3.8.1 How to Configure WebSphere to Allow Reuse of Query Result Sets

WebSphere Application Server closes shared database connections between application generated requests. You need to set two properties in WebSphere to allow reuse of result sets.

Use the WebSphere Application Server administrative console to set the `non-transactional_datasource` and `DisableMultiThreadedServletConnectionMgmt` properties.

#### To set properties in WebSphere to reuse results sets:

1. Start WebSphere Application Server administrative console.
2. Navigate to **Data sources > DB2 Universal JDBC Driver XA DataSource > WebSphere Application Server data source properties** and set **Non-transactional data source** to **enabled**.
3. Save the configuration.
4. Navigate to **Application servers > server\_name > Web Container > Custom Properties** and set **DisableMultiThreadedServletConnectionMgmt** to **true**.
5. Save the configuration.
6. Restart WebSphere Application Server.

Setting these two properties will enable your deployed application to reuse result sets across requests.



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## Administering ADF Desktop Integration

This chapter describes system administration tasks for ADF Desktop Integration such as running the ADF Desktop Integration client installer from a web server and adjusting server configuration settings.

Note that before an end user can use the integrated Excel workbook, the ADF Desktop Integration add-in must be installed on the end user's system.

This chapter includes the following sections:

- [Section 4.1, "Installing and Upgrading ADF Desktop Integration."](#)
- [Section 4.2, "ADF Desktop Integration Logs"](#)
- [Section 4.3, "Security in ADF Desktop Integration"](#)
- [Section 4.4, "Verifying the Client Version of ADF Desktop Integration"](#)
- [Section 4.5, "Verifying Integrated Excel Workbook Metadata"](#)
- [Section 4.6, "Common ADF Desktop Integration Error Messages and Problems"](#)

### 4.1 Installing and Upgrading ADF Desktop Integration

You can make the ADF Desktop Integration installer available to end users to install, as described in [Section 4.1.3, "How to Install the ADF Desktop Integration Add-in From a Web Server."](#) Alternatively, you can install it, as described in "Installing ADF Desktop Integration" section of the *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

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**Note:** Installation of the ADF Desktop Integration add-in is specific to the current Windows user profile. If you have multiple Windows user profiles on a system, and you want to use ADF Desktop Integration integrated Excel workbooks in more than one of these user profiles, you must log in to each user profile and install the ADF Desktop Integration add-in.

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When the ADF Desktop Integration installer runs, it verifies whether the required software is installed on the system. For more information about the required software, see the [Section 4.1.1, "Prerequisites for Installing ADF Desktop Integration Add-in."](#) In addition to installing the ADF Desktop Integration add-in, you (or the end user) must configure Microsoft Excel settings to make Excel accessible from ADF Desktop Integration, as described in [Section 4.1.2, "Configuring the End User's Microsoft Excel to work with ADF Desktop Integration."](#)

### 4.1.1 Prerequisites for Installing ADF Desktop Integration Add-in

Before you install the ADF Desktop Integration add-in, make sure that you have the required Oracle ADF modules and third-party software installed and configured:

- Microsoft Windows

Microsoft Windows operating systems support the development and deployment of Excel workbooks that integrate with Fusion web applications. For more information about supported versions of Windows, see the "Oracle JDeveloper and Application Development Framework Certification Information" page on OTN at:

<http://www.oracle.com/technetwork/developer-tools/jdev/index-091111.html>

- Microsoft Excel

For information about supported versions of Excel, see the "Oracle JDeveloper and Application Development Framework Certification Information" page on OTN at:

<http://www.oracle.com/technetwork/developer-tools/jdev/index-091111.html>

- Internet Explorer

Some features in ADF Desktop Integration use a web browser control from the Microsoft .NET Framework. This browser control relies on the local Internet Explorer installation to function properly.

ADF Desktop Integration uses Internet Explorer to render web pages inside Excel, regardless of other browsers installed on the system or any other browser set as the default browser.

The following software is required before ADF Desktop Integration add-in is installed. If this software is missing, the ADF Desktop Integration installer automatically downloads and installs it before installing the ADF Desktop Integration add-in.

- Microsoft .NET Framework 4

The Microsoft .NET Framework 4 provides the runtime and associated files required to run applications developed to target the Microsoft .NET Framework. You can download the framework from <http://www.microsoft.com/download/>.

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**Note:** ADF Desktop Integration is compatible with Microsoft .NET Framework 4.5.2. You may download and install it on client machines at any time.

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- Microsoft Visual Studio 2010 Tools for Office Runtime

The Microsoft Visual Studio 2010 Tools for Office Runtime (Version 4) is required to run VSTO solutions for the Microsoft Office system. You can download the Microsoft Visual Studio 2010 Tools for Office Runtime from

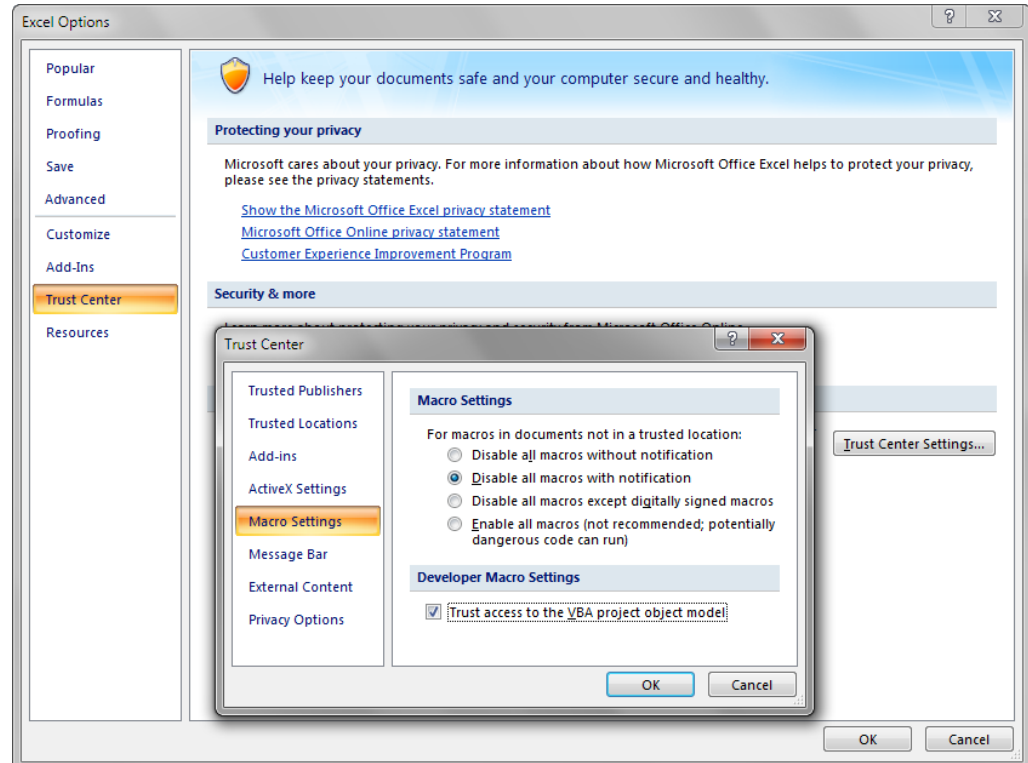
<http://www.microsoft.com/download/>.

### 4.1.2 Configuring the End User's Microsoft Excel to work with ADF Desktop Integration

The end user's installation of Microsoft Excel must be configured to make it accessible from ADF Desktop Integration. Perform this procedure once.

**To allow Excel to run an integrated Excel workbook:**

1. Open Excel.
2. Click the **Microsoft Office** button, and choose **Excel Options**.
3. In the Excel Options dialog, choose the **Trust Center** tab, and then click **Trust Center Settings**.
4. In the Trust Center dialog, choose the **Macro Settings** tab, and then click the **Trust access to the VBA project object model** checkbox, as shown in [Figure 4-1](#).

**Figure 4-1 Excel Trust Center Dialog**

5. Click OK.

**4.1.3 How to Install the ADF Desktop Integration Add-in From a Web Server**

You can make the ADF Desktop Integration installer available from the web server where your Fusion web application is running. The installer is embedded in the `oracle.adf.desktopintegration.war` file and can be downloaded by the end user from the ADF Desktop Integration-enabled Fusion web application.

**To download the installer from a web server:**

1. Provide your end users with a URL in the following format that they can open in a web browser:

```
http://<hostname>:<portnumber>/<context-root>/adfdiRemoteServlet?excel-addin-installer
```

For example:

```
http://127.0.0.1:7101/summit/adfdiRemoteServlet?excel-addin-installer
```

2. Depending upon the browser, the end user will be prompted to download, or download and run, the `adfdi-excel-addin-installer.exe` installer file.

For more information about running the installer on a Windows system, see the "Installing ADF Desktop Integration" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

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**Note:** Making the ADF Desktop Integration add-in installer available for download only works if the Fusion web application is an ADF Desktop Integration-enabled Fusion web application. The developer of a Fusion web application can implicitly enable ADF Desktop Integration by adding an integrated Excel workbook to the Fusion web application, as described in the "Adding an Integrated Excel Workbook to a Fusion Web Application" section, or explicitly, by configuring the application's `web.xml` file, as described in the "ADF Desktop Integration Settings in the Web Application Deployment Descriptor" appendix in *Desktop Integration Developer's Guide for Oracle Application Development Framework*. Adding an integrated Excel workbook to the Fusion web application may be preferable to configuring the `web.xml` file directly because JDeveloper makes many of the required configuration changes when the developer adds an integrated Excel workbook to the Fusion web application.

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#### 4.1.4 How to Upgrade the ADF Desktop Integration Add-in

An end user can upgrade ADF Desktop Integration in two ways.

- Run the ADF Desktop Integration installer to upgrade.

For more information about downloading the installer, see [Section 4.1.3, "How to Install the ADF Desktop Integration Add-in From a Web Server."](#)

- Open and run the integrated Excel workbook.

Each time the end user logs into the Fusion web application from an integrated Excel workbook, ADF Desktop Integration checks whether the version installed on the client matches the version on the server. If the versions do not match, the end user will be prompted to download the latest version of ADF Desktop Integration. If the end user accepts the prompt to install the latest version, the end user must also restart the Excel application after the installation completes for the change to take effect. For more information, see [Section 4.4, "Verifying the Client Version of ADF Desktop Integration."](#)

#### 4.1.5 How to Run ADF Desktop Integration Installer from Command Line

The ADF Desktop Integration installer also supports command line options. [Table 4-1](#) lists switches that you can specify with the installer executable file.

**Table 4-1 ADF Desktop Integration Installer Command Line Switches**

Switch	Description
<code>/help</code>	Displays a list of supported switches with description.

**Table 4–1 (Cont.) ADF Desktop Integration Installer Command Line Switches**

Switch	Description
/quiet	Suppresses the interactive mode of the installer and does not install any missing prerequisite software.  Before you install ADF Desktop Integration using the quiet mode, make sure that prerequisite software is installed on the end user's system. For more information about prerequisite software, see <a href="#">Section 4.1.1, "Prerequisites for Installing ADF Desktop Integration Add-in."</a>
DESIGNER=1	Installs the add-in with designer tools enabled.  Application developers use the designer tools to configure integrated Excel workbooks. The designer tools are not intended for end users. For this reason, do not enable designer tools if installing the ADF Desktop Integration add-in for end users.
/log <path>	Runs the installer and directs the log output to the specified log file.

## 4.2 ADF Desktop Integration Logs

ADF Desktop Integration generates log files during installation and in response to various client and server events.

### Installation Log File

The default location of the ADF Desktop Integration installation log file is %TEMP%\adfdi-installer-log.txt. For example, C:\Users\UserID\AppData\Local\Temp\adfdi-installer-log.txt. You can redirect the location of the install log file using the /log <path> command-line switch described in [Section 4.1.5, "How to Run ADF Desktop Integration Installer from Command Line."](#)

### Server-side Log Files

You configure the generation of server-side log files for ADF Desktop Integration the same way as for other Oracle ADF modules. For more information, see the "About Server-Side Logging" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*. You can also use the Oracle Diagnostics Log Analyzer to view a hierarchical breakdown of elapsed time spent performing each ADF Desktop Integration servlet request. For more information, see the "Using the Oracle Diagnostics Log Analyzer to Analyze ADF Desktop Integration Servlet Requests" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

### Client-side Log File

For information about client-side log files, see the "About Client-Side Logging" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

For more general information about logging in an Oracle Fusion Middleware environment, see the "Managing Log Files and Diagnostic Data" chapter in *Administrator's Guide*.

## 4.3 Security in ADF Desktop Integration

If your Fusion web application enforces authentication, the integrated Excel workbooks also make sure that an authenticated end user session is established before

data transfer happens between the workbooks and application. For more information, see the "About Security In Your Integrated Excel Workbook" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

### 4.3.1 End User Authentication

If end users are not prompted for user credentials while using integrated Excel workbooks and interacting with a secure Fusion web application, you need to investigate the security configuration of the Fusion web application. For more information, see the "Verifying End-User Authentication for Integrated Excel Workbooks" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

For more information about ADF Desktop Integration security, see the "Oracle ADF Desktop Integration Security whitepaper" on OTN at:

<http://www.oracle.com/technetwork/developer-tools/adf/overview/index-085534.html>

### 4.3.2 What You May Need to Know About Configuring Security in a Fusion Web Application

Note the following points before you secure your application:

- For applications running in an environment using Oracle Access Manager, the system administrator should make sure that the URL for the ADF Desktop Integration Remote servlet is configured as a protected resource for Oracle Access Manager.

For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*.

- For applications running in an environment using WebGate 11g, set the user-defined parameter `filterOAMAuthnCookie` to `False`.

For more information, see the chapter on registering partners (agents and applications) remotely in *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*.

- Make sure that applications using ADF Desktop Integration have a security constraint configured in `web.xml` that protects the ADF Desktop Integration remote servlet.

The following code extract from `web.xml` shows an example security constraint protecting the remote servlet:

```
<security-constraint>
  <web-resource-collection>
    <web-resource-name>adfdiRemote</web-resource-name>
    <url-pattern>/adfdiRemoteServlet</url-pattern>
  </web-resource-collection>
  <auth-constraint>
    <role-name>valid-users</role-name>
  </auth-constraint>
</security-constraint>
```

- When using Oracle WebGate and a SSL URL to access the Fusion web application (such as `https://...`) it may be necessary to configure WebGate's `mod_wl_ohs.conf` configuration file as follows:

```
<IfModule mod_weblogic.c>
```



```

WLProxySSLPassThrough ON
WLProxySSL ON
MatchExpression /TestApp
WebLogicHost=test.host.com|WebLogicPort=7101|
</IfModule>

```

where `/TestApp` is the context root of your application, `test.host.com` is the host name and domain, and `7101` is the port number for the web application.

- When opening an integrated Excel workbook, or any Microsoft Office document, directly (without downloading the file) from a link in the Fusion web application, the Windows Login dialog may appear twice asking for user credentials. This happens because Microsoft Office sends its own authentication request to the web server, making the Login dialog appear twice. End users may click **Cancel** and ignore the first authentication request.
- Applications secured via a digital certificate where clients use `https` URLs to access the application should make sure that the certificate is valid. Valid certificates have host names that match the host to which they are deployed, have not expired, and have a valid path to a trusted issuing authority. In the case where the certificate is invalid, the client will be prompted during login to accept the invalid certificate.
- ADF uses chunked encoding for some requests to the server. If you have any network devices between Excel and the web application server configured to block requests that do not contain a content length header, you should configure them to allow chunked encoding (no content length header). Some network devices such as content caching servers may have a default configuration that blocks requests with no content length header.
- Applications secured by form-based authentication should use `.HTML` pages for the login form. Use of `.JSF` pages is not supported.

For more information about securing integrated Excel workbooks, see the "What You May Need to Know About Securing an Integrated Excel Workbook" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

### 4.3.3 What You May Need to Know About Resource Grants for Web Pages

In an integrated Excel workbook, each worksheet is bound to a specific page definition. Users' access to pages may be controlled by resource grants. If an end user is not authorized to work with a page definition, ADF Desktop Integration disallows all data transactions in worksheets bound to that page definition, displays a failure message, and disables those integrated worksheets. The end user can alter any existing data in the worksheet, but cannot download or upload it. The tracking of changes in ADF Table components is also disabled. The end user can continue to use ADF Desktop Integration features in other worksheets in the same workbook, provided those worksheets are bound to page definitions that the end user is authorized to work with.

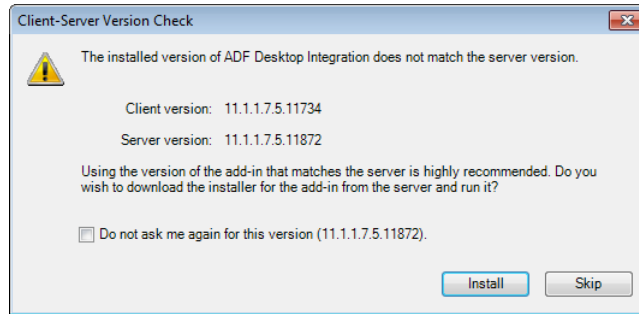
The worksheet is re-enabled when the end user reopens the workbook and establishes a new session, provided that the end user has obtained the necessary resource grants for the corresponding page definition.

For more information about securing your Fusion web application, see the "Enabling ADF Security in a Fusion Web Application" chapter in *Fusion Developer's Guide for Oracle Application Development Framework*.

## 4.4 Verifying the Client Version of ADF Desktop Integration

ADF Desktop Integration verifies whether the client and the server versions match each time that an end user establishes a session with the Fusion web application from the runtime integrated Excel workbook. If the versions do not match, ADF Desktop Integration displays the dialog shown in [Figure 4–2](#). If the versions match, no dialog appears to the end users.

**Figure 4–2 Client-Server Version Check Dialog**

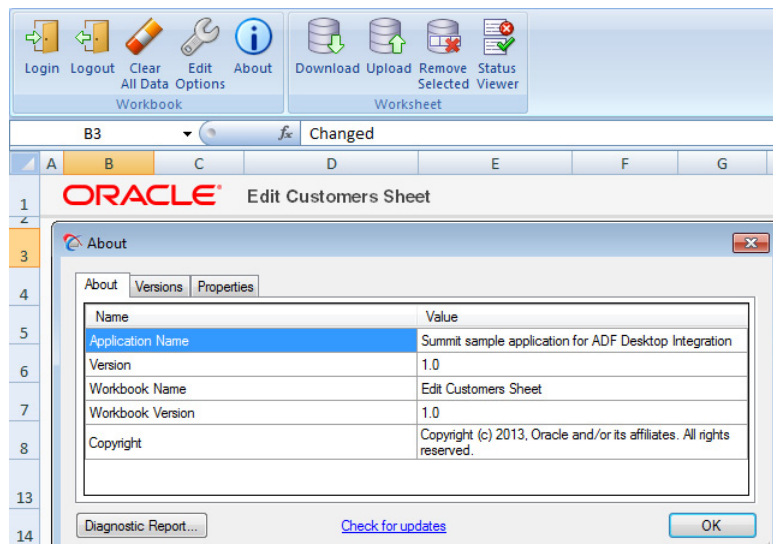


If the end user clicks:

- **Install:** ADF Desktop Integration initiates the download of the installer from the server to update the client to the matching server version
- **Skip** and selects the **Do not ask me again for this version...** checkbox: ADF Desktop Integration attempts to continue to function normally. No dialog appears on later occasions when the end user connects to the same version of the Fusion web application from the integrated Excel workbook.

Always using a client version that matches the server version is highly recommended to avoid unexpected behavior or errors. If end users choose either of the options that skip the installation of a newer client version of ADF Desktop Integration, they can install at a later time by clicking the **Check for updates** link that appears in the About dialog of the integrated Excel workbook, as shown in [Figure 4–3](#).

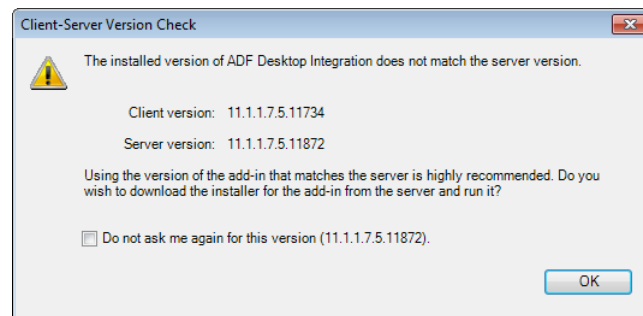
**Figure 4–3 Check for Updates Link for End Users**



For scenarios where you do not want end users to install a newer client version or they cannot because they do not have the required privileges to install software on their machines, the default behavior where ADF Desktop Integration displays an option to install a newer version can be disabled. When you disable the option to install a newer client version, the Client-Server Version Check dialog appears and informs the end user of the mismatch, but does not present an option to install a newer version.

Figure 4–4 shows this dialog. Furthermore, the About dialog shown in Figure 4–3 will no longer have a **Check for updates** link to start an install process. For more information about how to disable the option to upgrade, see Section 4.4.1, "How to Disable the Install Option on the Client-Server Version Check Dialog."

**Figure 4–4 Client-Server Version Check Dialog without Install Option**



Note that:

- ADF Desktop Integration performs the client-server version verification every time that the integrated Excel workbook establishes a session with the Fusion web application.
- The version of ADF Desktop Integration running on the server can change at any time (for example, server upgrade), but ADF Desktop Integration only performs the client-server version verification when the user session is re-established.
- Consider employing other mechanisms for situations where end users cannot install a version that matches the server version. For example, automatically push out software updates from a centrally-managed IT source to make sure that the matching version of the client software is installed.

#### 4.4.1 How to Disable the Install Option on the Client-Server Version Check Dialog

By default, ADF Desktop Integration displays an option to end users to install a newer client version from the Client-Server Version check dialog. You can disable this option so that ADF Desktop Integration informs end users of the mismatch, as shown in Figure 4–4, but does not permit end users to install a newer client version.

##### Before you begin:

It may be helpful to have an understanding of how ADF Desktop Integration verifies if the client and server versions match. For more information, see Section 4.4, "Verifying the Client Version of ADF Desktop Integration."

##### To disable the install option on the Client-Server Version Check dialog:

1. Open the `web.xml` file of your Fusion web application.
2. Add an initialization parameter to the `adfDiRemote` servlet to disable the option to install from the Client-Server Version Check dialog, as described in Table 4–2.

**Table 4–2 Disabling the install option on the Client-Server Version Check dialog**

Property	Value
Name	Enter the name of the initialization parameter as follows: ClientUpgradePrompt.Enabled Note that the name is case-sensitive.
Value	Set the value of ClientUpgradePrompt.Enabled to False. Note that any value other than False will be interpreted as True.

3. Save the `web.xml` file.

The `web.xml` file of your Fusion web application will now have the `ClientUpgradePrompt.Enabled` entry:

```
<servlet>
  <servlet-name>adfdiRemote</servlet-name>

  <servlet-class>oracle.adf.desktopintegration.servlet.DIRemoteServlet</servlet-c
  lass>
    <init-param>
      <param-name>ClientUpgradePrompt.Enabled</param-name>
      <param-value>False</param-value>
    </init-param>
  </servlet>
```

4. Restart your Fusion web application.

## 4.5 Verifying Integrated Excel Workbook Metadata

To give end users the confidence that the workbook configuration has not been altered maliciously, ADF Desktop Integration verifies the integrity of the workbook metadata automatically using the *Tamper-Check* feature. For more information, see the "Checking the Integrity of an Integrated Excel Workbook's Metadata" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

### 4.5.1 How to Disable the Metadata Tamper-Check in the Fusion Web Application

By default, ADF Desktop Integration verifies that the workbook configuration metadata is not tampered with after the workbook's developer publishes the Excel workbook for end users. You can disable the metadata tamper-check by configuring a parameter in the deployment descriptor file (`web.xml`) of the Fusion web application.

#### Before you begin:

It may be helpful to have an understanding of how ADF Desktop Integration verifies the integrity of an integrated Excel workbook's metadata. For more information, see [Section 4.5, "Verifying Integrated Excel Workbook Metadata."](#)

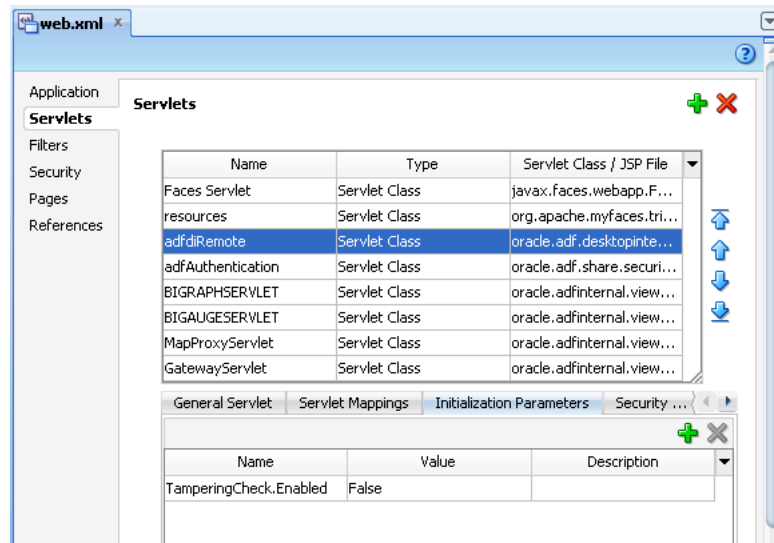
#### To disable the metadata tamper-check in the Fusion web application:

1. Open the `web.xml` file of your Fusion web application.
2. Add an initialization parameter to the `adfdiRemote` servlet to disable the metadata tamper-check, as described in [Table 4–3](#).

**Table 4–3 Disabling Metadata Tamper-Check**

Property	Value
Name	Enter the name of the initialization parameter as follows: TamperingCheck.Enabled Note that the name is case-sensitive.
Value	Set the value of TamperingCheck.Enabled to False. Note that any value other than False will be interpreted as True.

Figure 4–5 shows the web.xml editor in JDeveloper.

**Figure 4–5 Disabling the Metadata Tamper Check In JDeveloper**

**3. Save the web.xml file.**

The web.xml file of your Fusion web application will now have the TamperingCheck.Enabled entry:

```
<servlet>
  <servlet-name>adfdiRemote</servlet-name>
  <servlet-class>...</servlet-class>
  <init-param>
    <param-name>TamperingCheck.Enabled</param-name>
    <param-value>False</param-value>
  </init-param>
</servlet>
```

**4. Restart your Fusion web application.**

If the TamperingCheck.Enabled parameter is not present in web.xml, tamper check is enabled. For more information about the web.xml file, see the "ADF Desktop Integration Settings in the Web Application Deployment Descriptor" appendix in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.

## 4.6 Common ADF Desktop Integration Error Messages and Problems

While using or configuring the ADF Desktop Integration-enabled Fusion web application or workbooks, you might see error messages or encounter problems. The following list describes the most common error messages, their causes, and solutions.

You should also see the "Common ADF Desktop Integration Error Messages and Problems" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework* and the "ADFDI-00100 to ADFDI-55516" chapter in *Oracle Fusion Middleware Error Messages*.

**Error message: Access to this web server is disabled because it is controlled by basic authentication and does not use Secure Socket Layer (SSL).**

**Cause:** The user downloads and opens a workbook, published using Microsoft Office 2010, from the Fusion web application secured using basic authentication.

**Action:** By default, Microsoft Office 2010 applications disable basic authentication over a non-SSL connection. Use any of the following methods to resolve the error:

- Use form-based authentication instead of basic authentication in the Fusion web application.
- Download and save the workbook before opening it.
- Enable SSL encryption.

If you want to use basic authentication without SSL, see Microsoft Support solution at <http://support.microsoft.com/kb/2123563>.

**Error message: UnableToEstablishUnauthenticatedSessionException: ADFDI-00502: The client was unable to establish an unauthenticated session with the web application**

**Cause:** Incorrect security configuration in the Fusion web application.

**Action:** Review and correct the security configuration. Make sure that the `/adfdiRemoteServlet` URL is protected by a `<security-constraint>` in `web.xml`.

If SSL is used with Oracle WebGate, you might also need to verify the settings in the `mod_wl_ohs.conf` file.

For example:

```
<IfModule mod_weblogic.c>
  WLProxySSLPassThrough ON
  WLProxySSL ON
  MatchExpression /TestApp
  WebLogicHost=test.host.com|WebLogicPort=7101|
</IfModule>
```

where `/TestApp` is the context root of your application, `test.host.com` is the host name and domain, and `7101` is the port number for the web application.

**Problem: Edit Options dialog appears prompting for WebAppRoot when downloading an integrated Excel workbook from a Fusion web application**

**Cause:** The `adfdiExcelDownload` filter is not properly configured in `web.xml`, and so the filter is not able to set the `WebAppRoot` property on the downloaded workbook.

**Action:** Make sure that the `adfdiExcelDownload` filter is properly configured in `web.xml`. Verify that the filter is listed in the correct order with respect to the ADF Library Web Application Support, if it is in use. Also verify that the filter mappings for the `adfdiExcelDownload` filter are correct (see the "Configuring the

ADF Desktop Integration Excel Download Filter" section in *Desktop Integration Developer's Guide for Oracle Application Development Framework*.) You should also clear the directory into which browser downloads files.

**Problem: Login window does not close after submitting valid credentials in Oracle Access Manager environment**

**Cause:** The `/myApp/adfdiRemoteServlet` was not properly added as a protected resource to the Oracle Access Manager configuration.

**Action:** Add `/myApp/adfdiRemoteServlet` as a protected resource to the Oracle Access Manager configuration.

For more information, see the chapter on managing policies to protect resources and enable SSO in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*.

**Problem: UserSessionRequiredException on login in Oracle Access Manager environment with WebGate 11g**

**Cause:** The user defined parameter `filterOAMAuthnCookie` is not set in the WebGate 11g configuration.

**Action:** Set `filterOAMAuthnCookie` to `false` in the WebGate 11g configuration.

For more information, see the chapter on registering partners (agents and applications) remotely in the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager*.

**Problem: The DIRemoteServlet returns Invalid XML: unexpected end of response error message**

**Cause:** An exception has occurred in the ADF Model code, custom application module, or in the view object.

**Action:** Check the server logs for more information.





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# Working with WLST Commands for ADF Applications

This chapter describes the WLST commands you can use to deploy, manage, and configure Oracle ADF applications to Oracle WebLogic Server.

This chapter includes the following sections:

- [Section 5.1, "Overview of Custom WSLT Commands for Oracle ADF"](#)
- [Section 5.2, "Using ADF-Specific WLST Commands"](#)

For wsadmin commands for the IBM WebSphere application server, see [Appendix B, "wsadmin Command Reference for ADF Applications."](#)

## 5.1 Overview of Custom WSLT Commands for Oracle ADF

WLST provides a set of commands for ADF applications that are specific to WebLogic Server and allow to:

- manage URL connections for an ADF application
- manage Web Service connections for an ADF application
- export CSV format of JARs versions
- upgrade ADF Metadata of an application

For a complete list of ADF-specific WLST Commands, see the *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*.

## 5.2 Using ADF-Specific WLST Commands

To use the custom WLST commands for Oracle ADF, you must run the WLST script from the Oracle Common home (not from the WebLogic server home).

The script is located at:

```
%ORACLE_HOME%\oracle_common\common\bin\wlst.cmd on Windows  
$ORACLE_HOME/oracle_common/common/bin/wlst.sh on Unix
```

Use the ADF-based URL Connections WLST commands to navigate the hierarchy of configuration or runtime beans and control the prompt display.

Use the `getADFMArchiveConfig` command to manage the `ADFMArchiveConfig` object.

Use the `exportJarVersions`, `exportApplicationJarVersions`, and `exportApplicationSelectedJarVersions` commands to export CSV format of JARs versions to a specified location.

Use the Web service connection-specific commands to create, list, or delete Web service connections for an ADF application.

Use the `listUpgradeHandlers` command to list all upgrade handlers of an application.

Use commands related to applications' registered ADF Metadata to upgrade all or selected registered ADF Metadata of an application (or all the applications).

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**Note:** ADF-specific WLST commands can be used with WLST either online, offline, or both. Offline WLST commands are not supported from Maven.

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For detailed description, syntax, and examples of using ADF-specific WLST commands, see the *Oracle Fusion Middleware WebLogic Scripting Tool Command Reference*.

For more information about using custom WLST commands, see the *Administering Oracle Fusion Middleware*.

# Part III

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## Appendices

Part IV contains the following chapters:

- [Appendix A, "ADF Runtime Libraries"](#)
- [Appendix B, "wsadmin Command Reference for ADF Applications"](#)
- [Appendix C, "Audit Reference for Oracle Application Development Framework"](#)



## ADF Runtime Libraries

This appendix describes the contents of ADF runtime libraries (adf.oracle.domain.webapp.war, adf.oracle.domain.ear, adf.desktopintegration.war, adf.desktopintegration.model.ear and system classpath) deployed into Oracle WebLogic Server to support ADF applications.

The following ADF runtime libraries are described:

- [Section A.1, "adf.oracle.domain.webapp.war Library"](#)
- [Section A.2, "adf.oracle.domain.ear Library"](#)
- [Section A.3, "adf.desktopintegration.war Library"](#)
- [Section A.4, "adf.desktopintegration.model.ear Library"](#)
- [Section A.5, "System Classpath"](#)

### A.1 adf.oracle.domain.webapp.war Library

[Table A-1](#) lists the JAR files that are packaged into the adf.oracle.domain.webapp.war file and their corresponding ADF runtime library.

**Table A-1** *adf.oracle.domain.webapp.war Library*

JAR	ADF Library
oracle.adf.controller_11.1.1\adf-controller-api.jar	ADF Controller Runtime
oracle.adf.controller_11.1.1\adf-controller-rt-common.jar	ADF Controller Runtime
oracle.adf.controller_11.1.1\adf-controller.jar	ADF Controller Runtime
oracle.adf.pageflow_11.1.1\adf-pageflow-dtrt.jar	ADF Page Flow Runtime ADF Designtime API
oracle.adf.pageflow_11.1.1\adf-pageflow-fwk.jar	ADF Page Flow Runtime
oracle.adf.pageflow_11.1.1\adf-pageflow-impl.jar	ADF Page Flow Runtime
oracle.adf.pageflow_11.1.1\adf-pageflow-rc.jar	ADF Page Flow Runtime
oracle.adf.view_11.1.1\adf-dt-at-rt.jar	ADF Model Runtime ADF Designtime API
oracle.adf.view_11.1.1\adf-dynamic-faces.jar	ADF Faces Dynamic Components

**Table A-1 (Cont.) adf.oracle.domain.webapp.war Library**

<b>JAR</b>	<b>ADF Library</b>
oracle.adf.view_11.1.1\adf-faces-changemanager-rt.jar	ADF Faces Change Manager Runtime 11
oracle.adf.view_11.1.1\adf-faces-databinding-dt-core.jar	ADF Designtime API
oracle.adf.view_11.1.1\adf-faces-databinding-rt.jar	Trinidad Databinding Runtime ADF Faces Databinding Runtime
oracle.adf.view_11.1.1\adf-faces-registration.jar	NA
oracle.adf.view_11.1.1\adf-faces-templating-dt-core.jar	ADF Designtime API
oracle.adf.view_11.1.1\adf-faces-templating-dtrt.jar	ADF Designtime API
oracle.adf.view_11.1.1\adf-richclient-api-11.jar	Trinidad Databinding Runtime ADF Faces Runtime 11
oracle.adf.view_11.1.1\adf-richclient-automation-11.jar	Oracle Customized Selenium
oracle.adf.view_11.1.1\adf-richclient-impl-11.jar	ADF Faces Runtime 11
oracle.adf.view_11.1.1\adf-share-web.jar	NA
oracle.adf.view_11.1.1\adf-view-databinding-dt-core.jar	ADF Designtime API
oracle.adf.view_11.1.1\dvt-databindings.jar	BI Data Control Runtime Essbase Data Control Runtime ADF DVT Faces Databinding Runtime
oracle.adf.view_11.1.1\dvt-faces.jar	ADF DVT Faces Runtime
oracle.adf.view_11.1.1\dvt-facesbindings.jar	BI Data Control Runtime Essbase Data Control Runtime ADF DVT Faces Databinding Runtime
oracle.adf.view_11.1.1\dvt-jclient.jar	Oracle BI Graph ADF DVT Core Runtime ADF Swing Runtime ADF DVT Faces Runtime
oracle.adf.view_11.1.1\dvt-trinidad.jar	ADF DVT Core Runtime ADF DVT Faces Runtime
oracle.adf.view_11.1.1\dvt-utils.jar	BI Data Control Runtime Oracle BI Graph ADF DVT Core Runtime ADF Swing Runtime Essbase Data Control Runtime ADF DVT Faces Runtime
oracle.adf.view_11.1.1\oracle-page-templates.jar	Oracle Page Templates

**Table A-1 (Cont.) adf.oracle.domain.webapp.war Library**

JAR	ADF Library
oracle.adf.view_11.1.1\trinidad-api.jar	ADF Faces Runtime 11 Trinidad Runtime 11
oracle.adf.view_11.1.1\trinidad-impl.jar	ADF Faces Runtime 11 Trinidad Runtime 11
oracle.facesconfigdt_11.1.1\facesconfigmodel.jar	ADF Faces Change Manager Runtime 11
oracle.facesconfigdt_11.1.1>taglib.jar	ADF Faces Change Manager Runtime 11
velocity-dep-1.4.jar	ADF Designtime API

## A.2 adf.oracle.domain.ear Library

Table A-2 lists the JAR files that are packaged into the `adf.oracle.domain.ear` file and their corresponding ADF runtime library.

**Table A-2 adf.oracle.domain.ear Library**

JAR	ADF Library
groovy-all-1.6.3.jar	ADF Model Runtime ADF Model Generic Runtime BC4J Runtime
oracle.adf.model_11.1.1\adf-controller-schema.jar	ADF Controller Schema
oracle.adf.model_11.1.1\adf-controller-system.jar	NA
oracle.adf.model_11.1.1\adf-runtime-mbean.jar	NA
oracle.adf.model_11.1.1\adf-sec-idm-dc.jar	User and Role Data Control
oracle.adf.model_11.1.1\adfbcsvc-client.jar	BC4J Service Client
oracle.adf.model_11.1.1\adfbcsvc-share.jar	BC4J Service Runtime BC4J Service Client
oracle.adf.model_11.1.1\adfbcsvc.jar	BC4J Service Runtime
oracle.adf.model_11.1.1\adfdeployrt.jar	NA
oracle.adf.model_11.1.1\adfdt_common.jar	ADF Model Runtime ADFm Designtime API
oracle.adf.model_11.1.1\adflibfilter.jar	ADF Common Web Runtime
oracle.adf.model_11.1.1\adflibrary.jar	NA
oracle.adf.model_11.1.1\adfm-debugger.jar	BC4J Tester

**Table A-2 (Cont.) adf.oracle.domain.ear Library**

<b>JAR</b>	<b>ADF Library</b>
oracle.adf.model_11.1.1\adfm.jar	BC4J EJB Client ADF Model Runtime BC4J Oracle Domains ADF Model Generic Runtime BC4J Runtime ADF Swing Runtime ADF Model API BC4J EJB Runtime BC4J Client BC4J IAS Client
oracle.adf.model_11.1.1\adfmportlet.jar	NA
oracle.adf.model_11.1.1\adfmweb.jar	ADF Web Runtime
oracle.adf.model_11.1.1\adftags.jar	Oracle ADF DataTag
oracle.adf.model_11.1.1\adftransactionsdt.jar	ADF Designtime API
oracle.adf.model_11.1.1\bc4j-mbeans.jar	BC4J Runtime
oracle.adf.model_11.1.1\bc4jhtml.jar	BC4J Struts Runtime BC4J HTML
oracle.adf.model_11.1.1\bc4jimdomains.jar	Oracle Intermedia ADF Swing Oracle Intermedia
oracle.adf.model_11.1.1\bc4jsyscat.jar	BC4J Tester
oracle.adf.model_11.1.1\bc4jwizard.jar	BC4J Tester BC4J Runtime
oracle.adf.model_11.1.1\datatags.jar	BC4J HTML
oracle.adf.model_11.1.1\db-ca.jar	BC4J EJB Client ADF Model Runtime BC4J Tester BC4J Runtime BC4J Client BC4J IAS Client
oracle.adf.model_11.1.1\jdev-cm.jar	BC4J EJB Client ADF Model Runtime BC4J Tester BC4J Runtime Obsolete JDeveloper Extension SDK BC4J Client BC4J IAS Client Connection Manager
oracle.adf.model_11.1.1\jmxdc.jar	NA
oracle.adf.model_11.1.1\jr_dav.jar	Resource Catalog Service



**Table A–2 (Cont.) *adf.oracle.domain.ear* Library**

JAR	ADF Library
oracle.adf.model_11.1.1\oicons.jar	ADFm Designtime API
oracle.adf.model_11.1.1\oraclexsql.jar	NA
oracle.adf.model_11.1.1\ordhttp.jar	Oracle Intermedia ADF Swing Oracle Intermedia
oracle.adf.model_11.1.1\ordim.jar	Oracle Intermedia ADF Swing Oracle Intermedia
oracle.adf.model_11.1.1\rsc-adflib-rt.jar	NA
oracle.adf.model_11.1.1\rcsrt.jar	Resource Catalog Service
oracle.adf.model_11.1.1\regexp.jar	NA
oracle.adf.model_11.1.1\sqlserializers.jar	XSQL Runtime
oracle.bali.share_11.1.1\share.jar	MDS Runtime Dependencies BC4J Tester ADF Model Generic Runtime Oracle Help for Java Oracle JJWT

### A.3 *adf.desktopintegration.war* Library

[Table A–3](#) lists the JAR files that are packaged into the *adf.desktopintegration.war* file and their corresponding ADF runtime library.

**Table A–3 *adf.desktopintegration.war* Library**

JAR	ADF Library
oracle.adf.desktopintegration_11.1.1/adf-desktop-integration.jar	ADF Desktop Integration Runtime

### A.4 *adf.desktopintegration.model.ear* Library

[Table A–4](#) lists the JAR files that are packaged into the *adf.desktopintegration.model.ear* file and their corresponding ADF runtime library.

**Table A–4 *adf.desktopintegration.model.ear* Library**

JAR	ADF Library
oracle.adf.desktopintegration.model_11.1.1/adf-desktop-integration-model-api.jar	ADF Desktop Integration Model API

### A.5 System Classpath

[Table A–5](#) lists the JAR files that are loaded into the system classpath and their corresponding ADF runtime library.

**Table A-5 System Classpath**

<b>JAR</b>	<b>ADF Library</b>
com.sun.msv.datatype.xsd_20030530.jar	NA
commonj.sdo_2.1.0.jar	BC4J Service Runtime BC4J Service Client Java EE 1.5 EJB SDO Client
features\adf.model.generic_11.1.1.jar	NA
features\adf.model_11.1.1.jar	NA
features\adf.share.ca_11.1.1.jar	NA
features\adf.share_11.1.1.jar	NA
groovy-all-1.6.0.jar	NA
jakarta.jstl_1.0\lib\jaxen-full.jar	JSTL 1.0
jakarta.jstl_1.0\lib\jdbc2_0-stdext.jar	JSTL 1.0
jakarta.jstl_1.0\lib\jstl.jar	JSTL 1.1 JSTL 1.0
jakarta.jstl_1.0\lib\saxpath.jar	JSTL 1.0
jakarta.jstl_1.0\lib\standard.jar	JSTL 1.1 Tags JSTL 1.0 Tags
jakarta.jstl_1.0\lib\xalan.jar	JSTL 1.0
jakarta.jstl_1.0\lib\xercesImpl.jar	JSTL 1.0
jakarta.jstl_1.0\lib\xml-apis.jar	JSTL 1.0
jakarta.jstl_1.1\lib\jstl.jar	JSTL 1.1 JSTL 1.0
jakarta.jstl_1.1\lib\standard.jar	JSTL 1.1 Tags JSTL 1.0 Tags
jsf.facelets_1.1.14\jsf-facelets.jar	Facelets Runtime
oracle.adf.dconfigbeans_11.1.1.jar	NA
oracle.adf.management_11.1.1\adf-em-config.jar	ADF Management Pages
oracle.adf.model.generic_11.1.1\bc4jdomgnrc.jar	BC4J Generic Domains
oracle.adf.model_11.1.1\redist\adfbinding-samples.jar	System Classpath
oracle.adf.model_11.1.1\redist\graphtags.jar	BC4J HTML
oracle.adf.share.ca_11.1.1\adf-share-base.jar	ADF Common Web Runtime MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime ADF Swing Runtime BC4J Security ADF Common Runtime

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.adf.share.ca_11.1.1.1\adf-share-ca.jar	MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime BC4J Security ADF Common Runtime
oracle.adf.share_11.1.1.1\adf-share-support.jar	MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime BC4J Security ADF Common Runtime
oracle.adf.share_11.1.1\adf-share-wls.jar	NA
oracle.adf.share_11.1.1\adflogginghandler.jar	MDS Runtime Dependencies BC4J Tester ADF Model Generic Runtime BC4J Runtime ADF Common Runtime
oracle.adf.share_11.1.1\adfsharembean.jar	BC4J Runtime ADF Common Runtime
oracle.adf.share_11.1.1\commons-cli-1.0.jar	MDS Runtime Dependencies
oracle.adf.share_11.1.1\commons-el.jar	ADF Model Runtime MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime
oracle.adf.share_11.1.1\jsp-el-api.jar	ADF Model Runtime MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime
oracle.adf.share_11.1.1\oracle-el.jar	ADF Model Runtime MDS Runtime Dependencies ADF Model Generic Runtime BC4J Runtime
oracle.auditprovider_11.1.1\jps-wls-auditprovider.jar	System Classpath

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.bulkops_11.1.1\bulkoperationsmbean.jar	NA
oracle.classloader_11.1.1.jar	NA
oracle.dconfig-infra_11.1.1.jar	NA
oracle.dms_11.1.1\dms.jar	MDS Runtime Dependencies Java EE 1.5 Essbase Data Control Runtime J2EE 1.4 Oracle JDBC JAX-RPC Client
oracle.ejb_11.1.1\ejbsvc-share.jar	EJB SDO Client
oracle.fabriccommon_11.1.1\fabric-common.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.fabriccommon_11.1.1\policy-api.jar	NA
oracle.help_5.0\help-indexer.jar	NA
oracle.help_5.0\help-share.jar	BC4J Tester Oracle Help for Java
oracle.help_5.0\help-wizard.jar	NA
oracle.help_5.0\ohj.jar	BC4J Tester Oracle Help for Java
oracle.help_5.0\ohw-rcf.jar	NA
oracle.help_5.0\ohw-share.jar	NA
oracle.help_5.0\ohw-uix.jar	NA
oracle.help_5.0\oracle_ice.jar	BC4J Tester Ice Oracle Help for Java
oracle.http_client_11.1.1.jar	URL Data Control Java EE 1.5 Oracle SOAP J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.iau_11.1.1\fmw_audit.jar	Java EE 1.5 J2EE 1.4 BC4J Security JAX-RPC Client
oracle.iau_11.1.1\reports\AuditReportTemplates.jar	NA

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.idm_11.1.1\identitystore.jar	ADF Model Runtime ADF Model Generic Runtime BC4J Runtime BC4J Security ADF Common Runtime
oracle.idm_11.1.1\identityutils.jar	NA
oracle.javacache_11.1.1\cache.jar	MDS Runtime Dependencies Java Cache ADF Common Runtime
oracle.javacache_11.1.1\jocconfmbean.jar	NA
oracle.javatools_11.1.1\javamodel-rt.jar	Java EE 1.5 J2EE 1.4 JAX-RPC Client
oracle.javatools_11.1.1\javatools-nodeps.jar	ADF Common Web Runtime MDS Runtime Dependencies Java EE 1.5 ADFm Designtime API J2EE 1.4 JAX-RPC Client
oracle.javatools_11.1.1\resourcebundle.jar	ADF Desktop Integration Runtime Resource Bundle Support BC4J Runtime
oracle.jdbc_11.1.1\ojdbc6dms.jar	NA
oracle.jmx_11.1.1\jmxframework.jar	MDS Runtime Dependencies Java EE 1.5 BC4J Tester BC4J Runtime J2EE 1.4 JAX-RPC Client
oracle.jmx_11.1.1\jmxspi.jar	MDS Runtime Dependencies Java EE 1.5 BC4J Tester BC4J Runtime J2EE 1.4 JAX-RPC Client
oracle.jps_11.1.1\jacc-spi.jar	BC4J Security

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.jps_11.1.1\jps-api.jar	BC4J Tester BC4J Security JAX-RPC Client
oracle.jps_11.1.1\jps-common.jar	BC4J Security JAX-RPC Client
oracle.jps_11.1.1\jps-ee.jar	JPS Designtime BC4J Security
oracle.jps_11.1.1\jps-internal.jar	BC4J Security
oracle.jps_11.1.1\jps-manifest.jar	NA
oracle.jps_11.1.1\jps-mbeans.jar	NA
oracle.jps_11.1.1\jps-unsupported-api.jar	BC4J Security
oracle.jps_11.1.1\jps-upgrade.jar	NA
oracle.jps_11.1.1\jps-wls.jar	NA
oracle.jrf_11.1.1\jrf-api.jar	JRF API
oracle.jrf_11.1.1\jrf-client.jar	JRF Client
oracle.jrf_11.1.1\jrf.jar	JAX-WS Client JRF Runtime
oracle.jsf_1.2.7.1\jsf-api.jar	JSF
oracle.jsf_1.2.7.1\jsf-ri.jar	NA
oracle.jsf_1.2.7.1\sun-commons-beanutils.jar	NA
oracle.jsf_1.2.7.1\sun-commons-collections.jar	NA
oracle.jsf_1.2.7.1\sun-commons-digester.jar	NA
oracle.jsf_1.2.7.1\sun-commons-logging.jar	NA
oracle.jsf_1.2.9\glassfish.jsf_1.2.9.0.jar	JSF 1.2
oracle.jsf_1.2.9\glassfish.jstl_1.2.0.1.jar	JSF 1.2 JSTL 1.2 JSTL 1.2 Tags
oracle.jsf_1.2.9\javax.jsf_1.2.0.1.jar	JSF 1.2 Java EE 1.5 API
oracle.jsf_1.2.9\wls.jsf.di.jar	JSF 1.2
oracle.jsp_11.1.1\ojsp.jar	NA
oracle.ldap_11.1.1\jremtool.jar	NA
oracle.ldap_11.1.1\ldapjclnt11.jar	BC4J Security

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.ldap_11.1.1\ojmisc.jar	BC4J EJB Client ADF Model Runtime BC4J Tester ADF Model Generic Runtime BC4J Runtime J2EE 1.4 JAX-RPC Client BC4J IAS Client
oracle.logging-utils_11.1.1.jar	NA
oracle.mds_11.1.1\mdslcm.jar	NA
oracle.mds_11.1.1\mdsrt.jar	MDS Runtime
oracle.mds_11.1.1\oramds.jar	MDS Runtime Dependencies
oracle.nlsrtl_11.1.0\orai18n-collation.jar	NA
oracle.nlsrtl_11.1.0\orai18n-mapping.jar	NA
oracle.nlsrtl_11.1.0\orai18n-servlet.jar	NA
oracle.nlsrtl_11.1.0\orai18n-translation.jar	NA
oracle.nlsrtl_11.1.0\orai18n-utility.jar	NA
oracle.nlsrtl_11.1.0\orai18n.jar	Java EE 1.5 J2EE 1.4 JAX-RPC Client
oracle.oamprovider_11.1.1\oamAuthnProvider.jar	NA
oracle.oamprovider_11.1.1\oamcfgtool.jar	NA
oracle.oc4j_10.1.3.4\oc4jclient.jar	NA
oracle.odl_11.1.1\ojdl-log4j.jar	NA
oracle.odl_11.1.1\ojdl.jar	MDS Runtime Dependencies Java EE 1.5 Essbase Data Control Runtime J2EE 1.4 Oracle JDBC JAX-RPC Client
oracle.odl_11.1.1\ojdl2.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.oer_11.1.1\activation-1.0.2.jar	NA
oracle.oer_11.1.1\aler-axis-1.2.1.jar	NA
oracle.oer_11.1.1\aler-axis-jaxrpc-1.2.1.jar	NA

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.oer_11.1.1\client.rex-10.3.1.0.jar	NA
oracle.oer_11.1.1\commons-discovery-0.2.jar	NA
oracle.oer_11.1.1\commons-logging-1.0.4.jar	NA
oracle.oer_11.1.1\mail-1.2.jar	NA
oracle.oer_11.1.1\oracle.jdeveloper.oer.jar	NA
oracle.oer_11.1.1\soap-2.2.jar	NA
oracle.oer_11.1.1\wsdl4j-1.6.2.jar	NA
oracle.osdt_11.1.1\ojdigsig.jar	NA
oracle.osdt_11.1.1\osdt_cert.jar	Java EE 1.5 J2EE 1.4 BC4J Security Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1\osdt_cmp.jar	NA
oracle.osdt_11.1.1\osdt_cms.jar	NA
oracle.osdt_11.1.1\osdt_core.jar	Java EE 1.5 J2EE 1.4 BC4J Security Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1\osdt_core_fips.jar	Web Service Data Control
oracle.osdt_11.1.1\osdt_jce.jar	Web Service Data Control
oracle.osdt_11.1.1\osdt_ldap.jar	NA
oracle.osdt_11.1.1\osdt_lib_v11.jar	Web Service Data Control
oracle.osdt_11.1.1\osdt_lib_v12.jar	Web Service Data Control
oracle.osdt_11.1.1\osdt_ocsp.jar	NA
oracle.osdt_11.1.1\osdt_saml.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1\osdt_saml2.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1\osdt_smime.jar	NA
oracle.osdt_11.1.1\osdt_tsp.jar	NA



**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.osdt_11.1.1.1\osdt_wss.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1.1\osdt_xkms.jar	NA
oracle.osdt_11.1.1.1\osdt_xmlsec.jar	Java EE 1.5 J2EE 1.4 BC4J Security Web Service Data Control JAX-RPC Client
oracle.osdt_11.1.1.1\ospnego.jar	NA
oracle.ossoiap_11.1.1.1\ossoiap.jar	NA
oracle.pki_11.1.1.1\oraclepki.jar	J2EE 1.4 BC4J Security JAX-RPC Client
oracle.pki_11.1.1.1\owm-3_0.jar	NA
oracle.pki_11.1.1.1\owm-images.jar	NA
oracle.pki_11.1.1.1\owm_help.jar	NA
oracle.security-api_11.1.1.1.jar	NA
oracle.ssofilter_11.1.1.1\ssofilter.jar	NA
oracle.toplink_11.1.1.1\eclipselink-dbwsutils.jar	NA
oracle.toplink_11.1.1.1\toplink-grid.jar	NA
oracle.toplink_11.1.1.1\toplink-javadoc.jar	NA
oracle.toplink_11.1.1.1\toplink-oc4j.jar	NA
oracle.ucp_11.1.0.jar	MDS Runtime Dependencies
oracle.web-common_11.1.1.1.jar	NA
oracle.webservices_11.1.1.1\dbws.jar	NA
oracle.webservices_11.1.1.1\lwdom.jar	JAX-RPC Client
oracle.webservices_11.1.1.1\mdds.jar	J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.webservices_11.1.1.1\oc4j-ws-support.jar	NA
oracle.webservices_11.1.1.1\orasaaaj.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.webservices_11.1.1\orawsdl.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client Oracle JWSDL
oracle.webservices_11.1.1\orawsrc.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.webservices_11.1.1\testpage.jar	NA
oracle.webservices_11.1.1\wsa.jar	NA
oracle.webservices_11.1.1\wsclient.jar	BC4J Service Runtime ADF Desktop Integration Runtime Java EE 1.5 Oracle JAX-WS Client JAX-RPC 11 Web Services J2EE 1.4 Web Service Data Control Oracle JAX-RPC Client OWSM Policy Lib
oracle.webservices_11.1.1\wsif.jar	WSIF Client Java EE 1.5 J2EE 1.4 JAX-RPC Client
oracle.webservices_11.1.1\wssecurity.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
oracle.webservices_11.1.1\wsserver.jar	Java EE 1.5 J2EE 1.4 JAX-RPC Client
oracle.webservices_11.1.1\ws_confmbeans.jar	NA
oracle.wsm.agent.common_11.1.1\wsm-agent-core.jar	Web Service Data Control
oracle.wsm.agent.common_11.1.1\wsm-agent-fmw.jar	NA
oracle.wsm.agent.common_11.1.1\wsm-agent-wls.jar	NA
oracle.wsm.agent.common_11.1.1\wsm-agent.jar	Web Service Data Control JAX-RPC Client
oracle.wsm.agent.common_11.1.1\wsm-pap.jar	Web Service Data Control JAX-RPC Client

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.wsm.common_11.1.1.1\wsm-audit-core.jar	NA
oracle.wsm.common_11.1.1.1\wsm-dependencies.jar	NA
oracle.wsm.common_11.1.1.1\wsm-pmlib.jar	Web Service Data Control JAX-RPC Client
oracle.wsm.common_11.1.1.1\wsm-policy-core.jar	Web Service Data Control JAX-RPC Client
oracle.wsm.common_11.1.1.1\wsm-secpol.jar	Web Service Data Control JAX-RPC Client
oracle.wsm.pm_11.1.1.1\wsm-pm-ejb-client-api.jar	NA
oracle.wsm.pm_11.1.1.1\wsm-pmserver.jar	NA
oracle.wsm.policies_11.1.1.1\wsm-policytool.jar	NA
oracle.wsm.policies_11.1.1.1\wsm-seed-policies.jar	Web Service Data Control
oracle.xdb_11.1.0.jar	J2EE 1.4 JAX-RPC Client
oracle.xdk_11.1.0\xml.jar	MDS Runtime Dependencies Oracle XML Parser v2 XSQL Runtime
oracle.xdk_11.1.0\xmlparserv2.jar	BC4J EJB Client ADF Model Runtime MDS Runtime Dependencies Oracle XML Parser v2 BC4J Tester ADF Model Generic Runtime BC4J Runtime XSQL Runtime Oracle SOAP BC4J Security JAX-RPC Client BC4J IAS Client
oracle.xdk_11.1.0\xquery.jar	Oracle XQuery
oracle.xdk_11.1.0\xsu12.jar	XSQL Runtime Oracle XML SQL Utility
oracle.xds_11.1.1.jar	NA

**Table A-5 (Cont.) System Classpath**

<b>JAR</b>	<b>ADF Library</b>
oracle.xmldef_11.1.1\xmldef.jar	MDS Runtime Dependencies ADF Faces Change Manager Runtime 11 ADF Model Generic Runtime Obsolete JDeveloper Extension SDK
oracle.xqs-api_11.1.1.jar	NA
org.apache.bcel_5.1.jar	NA
org.apache.commons.beanutils_1.6.jar	Commons Beanutils 1.6.1 Commons Beanutils 1.6
org.apache.commons.digester_1.7.jar	Java EE 1.5 Commons Digester 1.5 Commons Digester 1.7 J2EE 1.4 JAX-RPC Client
org.apache.commons.logging_1.0.4.jar	Commons Logging 1.0.3 Commons Logging 1.0.4
org.dom4j_1.6.1.jar	NA
org.jaxen_1.1.1.jar	Java EE 1.5 J2EE 1.4 Web Service Data Control JAX-RPC Client
org.objectweb.asm.attrs_1.5.3.jar	NA
org.objectweb.asm_1.5.3.jar	NA
org.osoa.sca_2.0.jar	NA
org.springframework_2.0.jar	Java EE 1.5 J2EE 1.4 JAX-RPC Client
sun.tools_1.6.0.jar	NA
ws.databinding.plugins_1.0.0.0.jar	NA
ws.databinding_1.0.0.0.jar	NA

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## wsadmin Command Reference for ADF Applications

This appendix describes the wsadmin commands you can use to deploy, manage, and configure Oracle ADF applications to IBM WebSphere Application Server.

This chapter includes the following sections:

- [Section B.1, "Overview of Custom wsadmin Commands for Oracle ADF"](#)
- [Section B.2, "ADF-Specific WebSphere Commands"](#)

### B.1 Overview of Custom wsadmin Commands for Oracle ADF

Use the ADF-based URL Connections wsadmin commands to navigate the hierarchy of configuration or runtime beans and control the prompt display. Use the `getADFMArchiveConfig` commands to manage the `ADFMArchiveConfig` object.

Each command must be qualified by the module name. For example, if the module is `URLConnection.py`, then the command can be invoked like this:  
`URLConnection.createFileURLConnection`. An example for the module `ADFAdmin.py` would be `ADFAdmin.getADFArchiveConfig`.

### B.2 ADF-Specific WebSphere Commands

Use the commands in [Table B-1](#) to manage ADF applications. Invocation of wsadmin commands need to include the module name where the method is defined. For example, `URLConnection.createFileURLConnection('myapp', 'tempDir', '/scratch/tmp')`.

**Table B-1** Browse Commands for wsadmin Configuration

Use this command...	To...	Use with WLST...
<a href="#">createFileURLConnection</a>	Create a new ADF file connection.	Online or Offline
<a href="#">createHttpURLConnection</a>	Create a new ADF URL connection.	Online or Offline
<a href="#">setURLConnectionAttributes</a>	Set or edit the attributes of a newly created or existing ADF connection.	Online or Offline
<a href="#">listUrlConnection</a>	List a new URL connection.	Online or Offline

**Table B-1 (Cont.) Browse Commands for wsadmin Configuration**

Use this command...	To...	Use with WLST...
<code>getADFMArchiveConfig</code>	Returns a handle to the <code>ADFMArchiveConfig</code> object for the specified archive.	Online or Offline
<code>updateADFLibrary</code>	add Batik SVG jars to ADF View JRF.	Online
<code>upgradeADFLibraryOnCluster</code>	upgrade ADF shared library for a cluster topology.	Online

## B.2.1 createFileURLConnection

Use with wsadmin: Online or Offline.

### B.2.1.1 Description

Use this command to creates a new connection based on the `oracle.adf.model.connection.url.FileURLConnection` connection class.

### B.2.1.2 Syntax

```
URLConnection.createFileURLConnection(appName, name, URL)
```

Argument	Definition
<code>appName</code>	Application name for which the connection will be created.
<code>name</code>	The name of the new connection.
<code>URL</code>	The URL associated with this connection.

### B.2.1.3 Example

```
URLConnection.createFileURLConnection('myapp', 'tempDir', '/scratch/tmp')
```

## B.2.2 createHttpURLConnection

Use with wsadmin: Online or Offline.

### B.2.2.1 Description

Use this command to create a new connection based on the `oracle.adf.model.connection.url.HttpURLConnection` connection type class.

### B.2.2.2 Syntax

```
URLConnection.createHttpURLConnection (appName, name, [URL], [authenticationType], [realm], [user], [password])
```

Argument	Definition
<code>appName</code>	Application name for which the connection will be created.
<code>name</code>	The name of the new connection.
<code>url</code>	(Optional) The URL associated with this connection.
<code>authenticationType</code>	(Optional) The default is basic.

Argument	Definition
<i>realm</i>	(Optional) If this connection deals with authentication, then this should be set. The default is basic.
<i>user</i>	(Optional)
<i>password</i>	(Optional)

### B.2.2.3 Example

```
URLConnection.createURLConnection('myapp', 'cnn', 'http://www.cnn.com')
```

## B.2.3 setURLConnectionAttributes

Use with wsadmin: Online or Offline.

### B.2.3.1 Description

Use this command to set or edit the attributes of a newly created or existing ADF connection.

### B.2.3.2 Syntax

```
URLConnection.setURLConnectionAttributes(appname, connectionname, attributes)
```

Argument	Definition
<i>appname</i>	Application name.
<i>connectionname</i>	The name of the connection.
<i>attributes</i>	The array containing attributes to set in key/value pairs.

### B.2.3.3 Example

```
URLConnection.setURLConnectionAttributes
('myapp', 'cnn', 'ChallengeAuthenticationType:digest',
'AuthenticationRealm:XMLRealm')
```

## B.2.4 listURLConnection

Use with wsadmin: Online or Offline.

### B.2.4.1 Description

Use this command to list the connections of the application.

### B.2.4.2 Syntax

```
URLConnection.listURLConnection(appname)
```

Argument	Definition
<i>appname</i>	Application name.

### B.2.4.3 Example

```
URLConnection.listURLConnection ('myapp')
```

## B.2.5 getADFMArchiveConfig

Use with wsadmin: Online or Offline.

### B.2.5.1 Description

Returns a handle to the `ADFMArchiveConfig` object for the specified archive. The returned `ADFMArchiveConfig` object's methods can be used to change application configuration in an archive.

The `ADFMArchiveConfig` object provides the following methods:

- `setDatabaseJboSQLBuilder([value])` - Sets the Database `jbo.SQLBuilder` attribute.
- `getDatabaseJboSQLBuilder()` - Returns the current value of the `jbo.SQLBuilder` attribute.
- `setDatabaseJboSQLBuilderClass([value])` - Sets the Database `jbo.SQLBuilderClass` attribute.
- `getDatabaseJboSQLBuilderClass()` - Returns the current value of the `jbo.SQLBuilderClass` attribute.
- `setDefaultRowLimit([value])` - Sets the defaults `rowLimit` attribute. Value is a long specifying the row limit (Default -1).
- `getDefaultRowLimit()` - Returns the current value of the `rowLimit` attribute.
- `save([toLocation])` - If you specify the `toLocation`, then the changes will be stored in the target archive file and the original file will remain unchanged. Otherwise, the changes will be saved in the original file itself.

### B.2.5.2 Syntax

```
archiveConfigObject = ADFMAdmin.getADFMArchiveConfig(fromLocation)
```

Argument	Definition
<i>fromLocation</i>	The name of the ear file, including its complete path.

The syntax for `setDatabaseJboSQLBuilder([value])` is:

```
archiveConfigObject.setDatabaseJboSQLBuilder([value])
```

Argument	Definition
<i>value</i>	The value of the <code>jbo.SQLBuilder</code> attribute. Valid values are: 'Oracle' (Default), 'OLite', 'DB2', 'SQL92', 'SQLServer', or 'Custom'. If 'Custom' is specified, then the <code>jbo.SQLBuilderClass</code> attribute should also be set.

The syntax for `getDatabaseJboSQLBuilder()` is:

```
archiveConfigObject.getDatabaseJboSQLBuilder()
```

The syntax for `setDatabaseJboSQLBuilderClass([value])` is:

```
archiveConfigObject.setDatabaseJboSQLBuilderClass([value])
```

Argument	Definition
<i>value</i>	The value of the <code>jbo.SQLBuilderClass</code> attribute.



The syntax for `getDatabaseJboSQLBuilderClass()` is:

```
archiveConfigObject.getDatabaseJboSQLBuilderClass()
```

The syntax for `setDefaultRowLimit([value])` is:

```
archiveConfigObject.setDefaultRowLimit([value])
```

Argument	Definition
<i>value</i>	The value of the <code>rowLimit</code> attribute.

The syntax for `getDefaultRowLimit()` is:

```
archiveConfigObject.getDefaultRowLimit([value])
```

The syntax for `save([toLocation])` is:

```
archiveConfigObject.save([toLocation])
```

Argument	Definition
<i>toLocation</i>	The file name along with the absolute path to store the changes.

### B.2.5.3 Example

In the following example, if the `adf-config.xml` file in the archive does not have the application and shared metadata repositories defined, then you should provide the complete connection information.

```
# Open something.ear and return an object which can be used
# manipulate it
archive = ADFMAdmin.getADFMArchiveConfig('/path/to/something.ear')

# Return current JBO SQL Builder value
archive.getDatabaseJboSQLBuilder()

# Change JBO SQL Builder value to Oracle
archive.setDatabaseJboSQLBuilder('Oracle')

# Save the changes back to the original file
archive.save()

archive = ADFMAdmin.getADFMArchiveConfig('/path/to/something.ear')
archive.getDatabaseJboSQLBuilder()
```

In the following example, the `jbo.SQLBuilder` attribute is set to 'DB2'.

```
wsadmin> archive =
    ADFMAdmin.getADFMArchiveConfig(fromLocation='/tmp/testArchive.ear')
wsadmin> archive.setDatabaseJboSQLBuilder(value='DB2')
wsadmin> archive.save()
```

In the following example, the `jbo.SQLBuilder` attribute is removed so that application default is used.

```
wsadmin> archive =
    ADFMAdmin.getADFMArchiveConfig(fromLocation='/tmp/testArchive.ear')
wsadmin> archive.setDatabaseJboSQLBuilder()
wsadmin> archive.save(toLocation='/tmp/targetArchive.ear')
```

In the following example, the `jbo.SQLBuilder` attribute is set to 'Custom', and the `jbo.SQLBuilderClass` attribute is set to the class 'com.example.CustomBuilder'.

```
wsadmin> archive =
           ADFMAdmin.getADFMArchiveConfig(fromLocation='/tmp/testArchive.ear')
wsadmin> archive.setDatabaseJboSQLBuilder('Custom')
wsadmin> archive.setDatabaseJboSQLBuilderClass('com.example.CustomBuilder')
wsadmin> archive.save(toLocation='/tmp/targetArchive.ear')
```

In the following example, the `rowLimit` attribute is set to 100.

```
wsadmin:/offline> archive =
getADFMArchiveConfig(fromLocation='/tmp/testArchive.ear')
wsadmin:/offline> archive.setDefaultRowLimit(100)
wsadmin:/offline> archive.save(toLocation='/tmp/targetArchive.ear')
```

## B.2.6 updateADFLibrary

Use with wsadmin: Online.

### B.2.6.1 Description

Use this command to add the Batik SVG libraries to the ADF View JRF classpath and the Apache JARs to the application classpath. The Batik libraries are required to provide printer-friendly renderings of certain DVT components such as treemap and sunburst. The Apache JARs are required for remote ADF task flows.

The following Apache JARs will be added to `$ORACLE_HOME/modules`:

- org.apache.http.components.httpclient-4.1.2.jar
- org.apache.http.components.httpclient-cache-4.1.2.jar
- org.apache.http.components.httpcore-4.1.2.jar
- org.apache.http.components.httpmime-4.1.2.jar

### B.2.6.2 Syntax

```
ADFAdmin.updateADFLibrary(cellName, nodeName, serverName)
```

Argument	Definition
cellName	WebSphere Cell name.
nodeName	WebSphere Node name.
serverName	WebSphere Server name.

### B.2.6.3 Example

```
> ADFAdmin.updateADFLibrary('DefaultCell', 'DefaultCellFederatedNode',
'OracleAdminServer')
```

## B.2.7 upgradeADFLibraryOnCluster

Use with wsadmin: Online.

### B.2.7.1 Description

Use this command to upgrade ADF shared library for WebSphere Application Servers in a cluster topology.

Use this command instead of `updateADFLibrary` when the servers are in a cluster.

### B.2.7.2 Syntax

```
upgradeADFLibraryOnCluster (cellName, ClusterName)
```

Argument	Definition
cellName	WebSphere Cell name.
ClusterName	WebSphere Cluster name.

### B.2.7.3 Example

```
> ADFAdmin.upgradeADFLibraryOnCluster('xyz1234567Cell101', 'oim_cluster')
```



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# Audit Reference for Oracle Application Development Framework

This appendix provides reference information for auditing in Oracle Application Development Framework.

This appendix contains these sections:

- [About Custom and Standard Audit Reports](#)
- [Attributes of ADF Audit Events](#)
- [Audit Events in Oracle ADF View](#)
- [Audit Events in Oracle ADF Business Components](#)
- [Audit Events in Oracle ADF Model](#)
- [Audit Events in Oracle ADF Controller](#)
- [Audit Events in Jedi](#)

## C.1 About Custom and Standard Audit Reports

The Common Audit Framework in Oracle Fusion Middleware provides a set of standard reports based on your audit records. It also enables you to modify the standard reports and create your own custom audit reports.

This appendix provides details about events that can be audited in Oracle Application Development Framework. Use this information to understand the structure of each event record to develop custom reports.

The following documents provide more information to help you write custom reports:

- "Attributes of Audit Reports in Oracle Business Intelligent Publisher" in the *Oracle Fusion Middleware Application Security Guide*
- "Customizing Audit Reports" in the *Oracle Fusion Middleware Application Security Guide*

The following documents provide additional information about how to configure auditing and view standard reports:

- "Configuring and Managing Auditing" in the *Oracle Fusion Middleware Application Security Guide*

## C.2 Attributes of ADF Audit Events

ADF audit events use the attributes specified in [Table C-1](#)

**Table C-1** *Attributes for ADF Audit Events*

<b>Attribute Name</b>	<b>Description</b>
mds-mo-name	Metadata object name.
mds-mo-type	Metadata object type.
mds-cust-layer-name	Customization layer name.
mds-cust-layer-value	Customization layer value.
mds-sandbox-name	Sandbox name.
custom-operation	The operation that triggered this event.
custom-attribute1-name	The name of custom attribute 1.
custom-attribute1-value	The value of custom attribute 1.
custom-attribute1-old-value	The old value of custom attribute 1.
custom-attribute2-name	The name of custom attribute 2.
custom-attribute2-value	The value of custom attribute 2.
custom-attribute2-old-value	The old value of custom attribute 2.
custom-attribute3-name	The name of custom attribute 3.
custom-attribute3-value	The value of custom attribute 3.
custom-attribute3-old-value	The old value of custom attribute 3.
custom-attribute4-name	The name of custom attribute 4.
custom-attribute4-value	The value of custom attribute 4.
custom-attribute4-old-value	The old value of custom attribute 4.
custom-attribute5-name	The name of custom attribute 5.
custom-attribute5-value	The value of custom attribute 5.
custom-attribute5-old-value	The old value of custom attribute 5.
custom-sub-object-name	User-recognizable name for the sub-object (XML element/attribute) that changed.
custom-sub-object-type	User-friendly type for the sub-object (XML element/attribute) that changed.
mds-repository-name	MDS repository name.
mds-partition-name	MDS repository partition name.
custom-object-name	User-friendly object name.
custom-object-type	User-recognizable object type.

### C.3 Audit Events in Oracle ADF View

Table C-2 lists the audit events for ADF View:

**Table C-2 Oracle ADF View Audit Events**

Event	Description
CreatePage	Create a new page.
CreateRegion	Add a region to a page.
CreateDataboundComponent	Add a databound component to a page.

## C.4 Audit Events in Oracle ADF Business Components

Table C-3 lists the audit events for ADF Business Components:

**Table C-3 Oracle ADF Business Components Audit Events**

Event Type	Event	Description
View Object	AddViewLinkDef	Add a view link definition.
	RemoveViewLinkDef	Remove a view link definition.
	AddAttributeDef	Add an attribute.
Entity Object	AddAttributeDef	Add an attribute definition.
	AddTrigger	Add a trigger.
	AddValidator	Add a validator.
	RemoveTrigger	Remove a trigger.
	RemoveValidator	Remove a validator.
Application Module	CreateViewObject	Create a view object.
	RemoveViewObject	Remove a view object.

## C.5 Audit Events in Oracle ADF Model

Table C-4 lists the audit events for ADF Model:

**Table C-4 Oracle ADF Model Audit Events**

Event Type	Event	Description
Page Definition	AddControBinding	Add a control binding.
	AddIterator	Add an iterator binding.
	AddVariable	Add a variable binding.
	AddExecutable	Add an executable binding.
	AddParameter	Add a parameter binding.
	AddNestedContainer	Add a nested container binding.
	RemoveExecutable	Remove an executable binding.
	RemoveIterator	Remove an iterator binding.
	RemoveParameter	Remove a parameter binding.
Application	AddDataControlReference	Add data control reference.
	AddPageDefinitionUsage	Add a page definition usage.
	AddPageMapEntry	Add a page map entry.
	RemoveDataControl	Remove data control usage.

**Table C-4 (Cont.) Oracle ADF Model Audit Events**

Event Type	Event	Description
	RemovePageDefinitionUsage	Remove page definition usage.
	RemovePageMapEntry	Remove a page map entry.
Configuration	AddDataControlDefinition	Add a data control definition.
	RemoveDataControlDefinition	Remove a data control definition.

## C.6 Audit Events in Oracle ADF Controller

Table C-5 lists the audit events for ADF Controller:

**Table C-5 Oracle ADF Controller Audit Events**

Event	Description
setPageName	Set a page name.
addControlFlowCase	Add a control flow case.
addActivity	Insert a new activity into a flow.
getMutableTaskFlowDefinition	Edit a task flow definition.
addEntry	Add a resource entry.
updateEntry	Update a resource entry.
deleteEntry	Delete a resource entry.

## C.7 Audit Events in Jedi

Table C-6 lists the audit events for Jedi:

**Table C-6 Jedi Audit Events**

Event	Description
AddAttribute	Add an attribute.
AddOperation	Add an operation.
AddValidationRule	Add a validation rule.
DeleteOperation	Delete an operation.
EditAttribute	Edit an attribute.
RemoveAttribute	Remove an attribute.
NewCustomObject	Add new custom object.
ChangedProperty	Change a property.
ChangedLabel	Display label change.
ChangedRequired	Required change.
ChangedUpdateable	Updatable change.