Oracle® Fusion Middleware

Introducing Web Services

11*g* Release 1 (11.1.1.9)

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This document describes how to implement the most common Oracle WSM interoperability scenarios.

ORACLE®

Oracle Fusion Middleware Introducing Web Services, 11*g* Release 1 (11.1.1.9)

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Preface

This preface describes the document accessibility features and conventions used in this guide—*Oracle Fusion Middleware Introducing Web Services*.

Documentation Accessibility

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Conventions

The following text conventions are used in this document:

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

1 Introducing Web Services

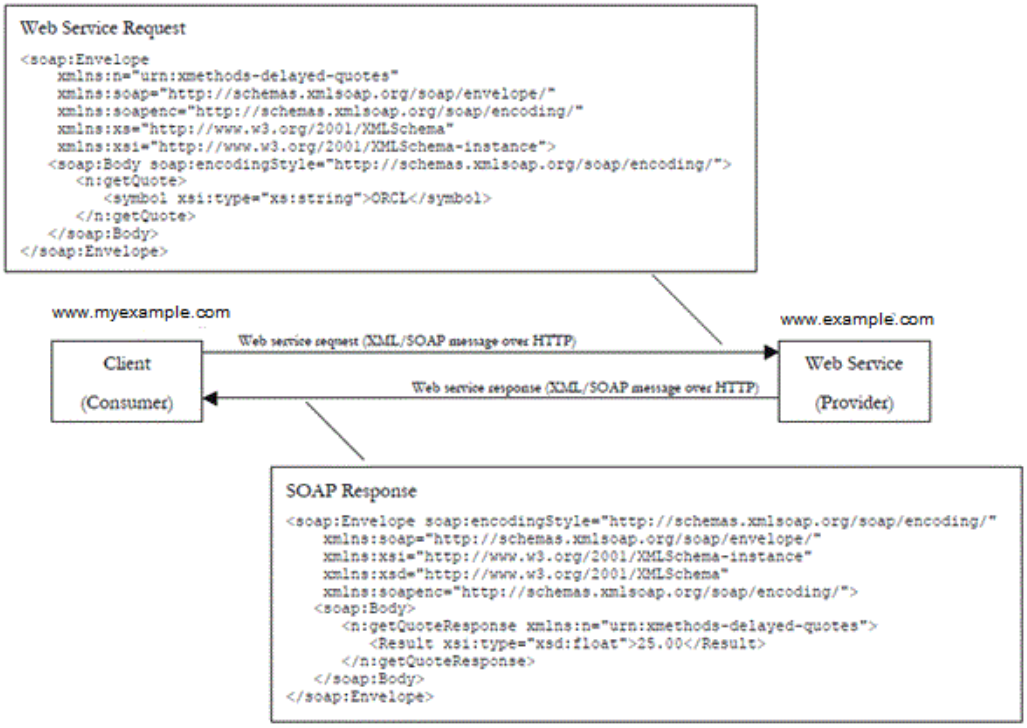
This document provides an overview of Web services in Oracle Fusion Middleware 11*g*. Sections include:

- What Are Web Services?
- Overview of Web Services in Oracle Fusion Middleware 11g
- Roadmap for Implementing Oracle Fusion Middleware Web Services
- Related Documentation

1.1 What Are Web Services?

A Web service is a program that can be accessed remotely using different XML-based languages. What this program can do (that is, the functionality it implements) is described in a standard XML vocabulary called *Web Services Description Language* (WSDL). For example, a banking Web service may implement functions to check an account, print a statement, and deposit and withdraw funds. These functions are described in a WSDL file that any consumer can invoke to access the banking Web service. As a result, a consumer does not have to know anything more about a Web service than the WSDL file that describes what it can do.

A Web service consumer (such as, a desktop application or a Java Platform, Enterprise Edition client such as a portlet) invokes a Web service by submitting a request in the form of an XML document to a Web service provider. The Web service provider processes the request and returns the result to the Web service consumer in an XML document as shown in the example below.



In this example, the Web service consumer sends a request in the form of a Simple Object Access Protocol (SOAP) message (SOAP is an XML messaging framework designed to allow heterogeneous applications to exchange structured information in a distributed environment). The Web service provider (www.example.com) processes the request and returns the response, in this case the stock quote for Oracle. In the example above, the Web service provider may have asked for credentials to access the service, for example a username and a password. Also, the Web service provider may have encrypted the response (the value of the stock).

You can also develop Representational State Transfer (REST) Web services, or "RESTful" Web services. REST describes any simple interface that transmits data over a standardized interface (such as HTTP) without an additional messaging layer, such as SOAP. REST provides a set of design rules for creating stateless services that are viewed as resources, or sources of specific information, and can be identified by their unique URIs. A client accesses the resource using the URI, a standardized fixed set of methods, and a representation of the resource is returned. The client is said to transfer state with each new resource representation.

In summary, Web services are loosely coupled, distributed environments that allow companies to integrate heterogeneous applications within the enterprise or expose business functions to their customers and partners over the Internet.

Web services are characterized by three factors:

- What they do (the business functionality they expose),
- Where they are (the web site which exposes that functionality),
- How they can be accessed (the set of published interfaces necessary to use the exposed functionality).

Web services rely on XML-based industry standards:

- Extensible Markup Language (XML)—A data format that allows uniform communication between Web services consumers and Web services providers.

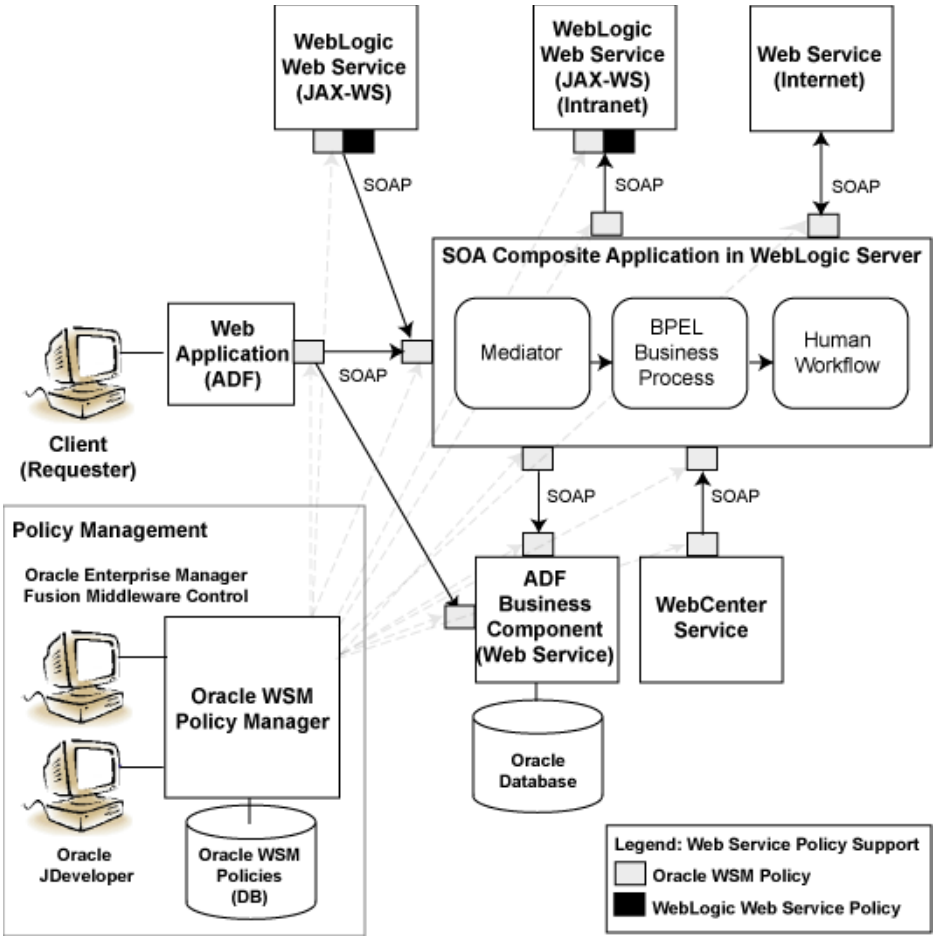
- XML Schema—A framework that describes XML vocabularies used in business transactions.
- SOAP—A protocol for exchanging structured information in the implementation of Web services.
- WSDL—An XML-based language providing a model for describing Web services.
- WS-Policy—The WS-Policy framework provides a flexible and extensible grammar for describing the capabilities, requirements, and general characteristics of Web services using policies.
- Universal Description, Discovery, and Integration (UDDI)—A framework to publish and look up Web services on the Internet.

1.2 Overview of Web Services in Oracle Fusion Middleware 11*g*

The following illustration shows common interactions between Oracle Fusion Middleware Web services and clients, and identifies Web service policy support at each interaction point.

The Oracle Web Services Manager (WSM) Policy Manager is the security and management policy lynchpin for Oracle Fusion Middleware 11*g* Web services. For more information about how the Oracle WSM Policy Manager provides the policy framework for managing policies, see "Understanding Oracle WSM Policy Framework" in *Security and Administrator's Guide for Web Services*.

Figure 1–1 Web Services in Oracle Fusion Middleware 11g



The following sections provide more detail about the Oracle Fusion Middleware 11*g* Web services architecture and each of the Web service components shown in the previous figure:

- Web Services Architecture
- Types of Web Services and Clients
- Types of Web Service Policies
- Tools for Web Service Development, Security, and Administration

For a complete roadmap of all Web service development, security, and administration tasks, see "Roadmap for Implementing Oracle Fusion Middleware Web Services" on page 9.

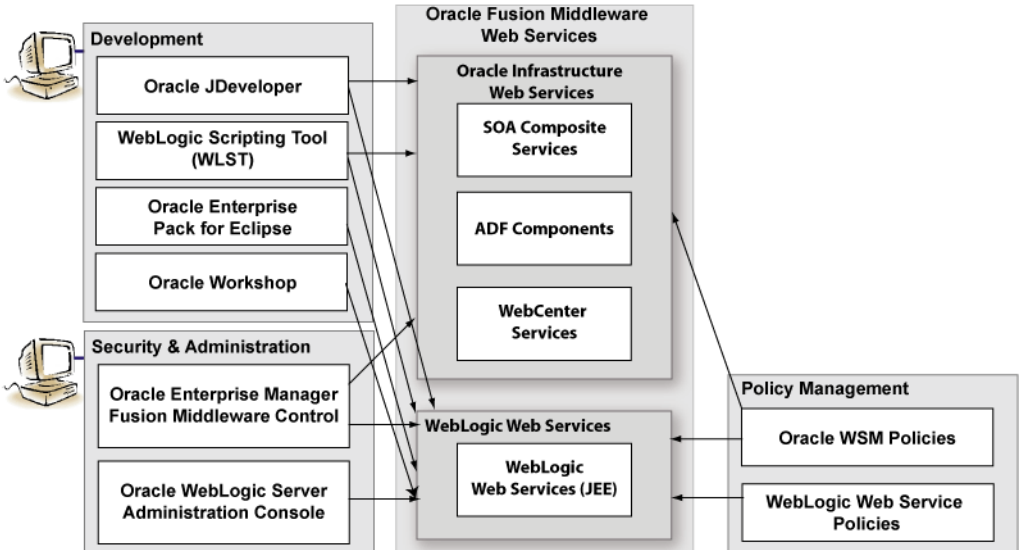
1.2.1 Web Services Architecture

In Oracle Fusion Middleware 11*g*, there are two categories of Web services:

- Oracle Infrastructure Web services—SOA, ADF, and WebCenter services
- WebLogic Web services (Java EE Web services)

The following figure illustrates the two Web services categories.

Figure 1–2 Web Services in Oracle Fusion Middleware 11g



1.2.2 Types of Web Services and Clients

Table 1–1 summarizes the types of Web services supported in Oracle Fusion Middleware 11*g*.

> **Note:** All Web services and clients can be deployed to an Oracle Fusion Middleware environment that runs on Oracle WebLogic Server. Oracle WebLogic Web services can be deployed to a standalone Oracle WebLogic Server, as well.

Table 1–1 Oracle Fusion Middleware Web Services

Web Service	Description
WebLogic Web service (Java EE)	WebLogic Web services are implemented according to the Web services for Java EE specification, available at http://www.jcp.org/en/jsr/detail?id=109, that defines the standard Java EE runtime architecture for implementing Web services in Java. For more information about developing WebLogic Web services, see: ■ Introducing Web Services in Oracle WebLogic Server ■ Getting Started Using JAX-WS Web Services for Oracle WebLogic Server ■ Getting Started Using JAX-RPC Web Services for Oracle WebLogic Server ■ "Developing with Web Services" in the *Oracle JDeveloper online help*. You can deploy WebLogic Web services to any Oracle WebLogic Server environment, including a standalone environment.

Table 1–1 (Cont.) Oracle Fusion Middleware Web Services

Web Service	Description
SOA service components	SOA composite applications include SOA service components. SOA service components are the basic building blocks of SOA applications, implementing a part of the overall business logic functionality. The following SOA service components can be managed using Oracle WSM: ■ BPEL Process—Provides process orchestration and storage of synchronous and asynchronous processes. ■ Oracle Mediator—Routes events (messages) between different components. ■ Human Workflow—Enables you to model a workflow that describes the tasks for users or groups to perform as part of an end-to-end business process flow. ■ Business Rules—Design a business decision based on rules. For more information about developing SOA service components, see *Developer's Guide for Oracle SOA Suite*. You can deploy SOA service components to the Oracle Fusion Middleware environment.
SOA service binding components	SOA Service binding components provide the outside world with an entry point to the SOA composite application. The WSDL file of the service advertises its capabilities to external applications. These capabilities are used for contacting the SOA composite application components. For more information, see *Developer's Guide for Oracle SOA Suite*.
ADF Business Components	ADF Business Components simplify the development, delivery, and customization of business applications for the Java EE platform by providing a library of reusable components and supporting design time facilities in Oracle JDeveloper. Using ADF Business Components, developers are not required to write the application infrastructure code required by the typical Java EE application to perform the following tasks: ■ Connect to the database. ■ Retrieve data. ■ Lock database records. ■ Manage transactions. Additionally, Oracle JDeveloper facilities expose ADF Business Component application modules that encapsulate built-in data manipulation operations and custom methods as Web services so that a service-enabled application module can be consumed across modules of the deploy Fusion Web application. For more information, see "Integrating Service-Enabled Application Modules" in *Fusion Developer's Guide for Oracle Application Development Framework*.

Table 1–1 (Cont.) Oracle Fusion Middleware Web Services

Web Service	Description
WebCenter services	WebCenter services expose Web 2.0 technologies for social networking and personal productivity, such as Wiki, RSS, and blogs. WebCenter provides a set of features and services (for example, portlets, customization, and content integration) that you can selectively add to your application. For more information about integrating WebCenter services, see *Developer's Guide for Oracle WebCenter*.

Table 1–2 summarizes the types of Web service clients supported in Oracle Fusion Middleware 11*g*.

Table 1–2 Oracle Fusion Middleware Web Service Clients

Web Service Client	Description
Web service clients	Client applications that invoke WebLogic Web services can be written using any technology: Java, Microsoft .NET, and so on. There are two types of client applications: ■ Stand-alone—A stand-alone client application can be a Java application, a .NET client, or any other type of client able to submit a Web service request. It runs completely separately from WebLogic Server. ■ A Java EE component deployed to WebLogic Server—In this type of client application, the Web service runs inside a Java Platform, Enterprise Edition (Java EE) Version 5 component deployed to WebLogic Server, such as an EJB, servlet, or another Web service. This type of client application, therefore, runs inside a WebLogic Server container. For more information about developing WebLogic Web service clients, see: ■ "Invoking Web Services" in *Getting Started With JAX-WS Web Services for Oracle WebLogic Server* ■ "Developing with Web Services" in the *Oracle JDeveloper online help*
SOA reference binding components	SOA reference binding components connect the SOA composite application to external partners. For more information about developing SOA reference binding components, see *Developer's Guide for Oracle SOA Suite*.
ADF Web applications	ADF Web applications can invoke a service, such as a WebLogic Web service, a SOA composite application, or a service-enabled ADF application module. For more information, see *Developer's Guide for Oracle SOA Suite*. In addition, ADF Web applications can work with Web services in the user interface using a Web service data control. For more information about generating service-enabled application modules, calling a Web service from an ADF application module, or creating Web service data controls, see *Fusion Developer's Guide for Oracle Application Development Framework*.
WebCenter portlets	WebCenter portlets enable you to surface WebCenter services. For more information about developing WebCenter portlets, see *Developer's Guide for Oracle WebCenter*.

1.2.3 Types of Web Service Policies

As shown in Figure 1–2, there are two types of policies that can be attached to Web services.

Table 1–3 Types of Web Service Policies

Type of Policy	Description
Oracle Web Services Manager (WSM) Policy	Policy provided by the Oracle WSM. For more information about the Oracle WSM and the predefined policies, see *Oracle Fusion Middleware Security and Administrator's Guide for Web Services*. You can attach Oracle WSM policies to Oracle Infrastructure Web services. You can only attach Oracle WSM *security* policies to WebLogic JAX-WS Web services. You manage Oracle WSM policies from Oracle Enterprise Manager Fusion Middleware Control.
WebLogic Web Service Policy	Policy provided by WebLogic Server. For more information about the WebLogic Web service policies, see *Securing WebLogic Web Services for Oracle WebLogic Server*. A subset of WebLogic Web service policies interoperate with Oracle WSM policies. For more information, see "Interoperability with Oracle WebLogic Server 11*g* Web Service Security Environments" in the *Interoperability Guide for Oracle Web Services Manager*. You manage WebLogic Web service policies from WebLogic Administration Console.

Note: It is recommended that you use Oracle WSM policies over WebLogic Web services whenever possible. You cannot mix your use of Oracle WSM and WebLogic Web service policies on the same Web service.

1.2.4 Tools for Web Service Development, Security, and Administration

To develop Web services, you can use the tools described in the following table, or your favorite IDE.

Table 1–4 Tools for Web Service Development

Tool	Description
Oracle JDeveloper	Provides powerful tools that help you discover and use existing Web services, and develop and deploy new Web services. For more information, see the Oracle JDeveloper online help.
Ant	Uses XML-based configuration files (called build.xml by default) to execute tasks written in Java. Ant is a Java-based build tool, similar to the make command but much more powerful. For more information, see "Ant Task Reference" in *WebLogic Web Services Reference for Oracle WebLogic Server*.
WebLogic Server Scripting Tool (WLST)	Enables administrators to view and configure Web services, and manage Web service policies from the command line. For more information, see *WebLogic Scripting Tool Command Reference*.

Table 1–4 (Cont.) Tools for Web Service Development

Tool	Description
Oracle Enterprise Pack for Eclipse (OEPE)	Provides a collection of plug-ins to the Eclipse IDE platform that facilitate development of WebLogic Web services. For more information, see the Eclipse IDE platform online help.
Oracle Workshop	Provides a collection plug-ins to the Eclipse IDE platform that facilitate development of WebLogic Web services. For more information, see `http://download.oracle.com/docs/cd/E13224_01/wlw/docs103/index.html` **NOTE**: Oracle Workshop is deprecated, and is being replaced by OEPE, described above.

To secure and administer Web services, the tools that you use vary depending on the Web service type.

Table 1–5 Tools for Web Service Security and Administration

To secure and administer . . .	Use. . .
Oracle Infrastructure Web Services	■ Oracle Enterprise Manager Fusion Middleware Control for all security and administration tasks. For more information, see *Oracle Fusion Middleware Security and Administrator's Guide for Web Services*. ■ Oracle WebLogic Scripting Tool (WLST) to view, configure, and secure Oracle Infrastructure Web services. For more information, see *Oracle Fusion Middleware Oracle WebLogic Scripting Tool*.
WebLogic Web Services	■ Oracle Enterprise Manager Fusion Middleware Control to leverage Oracle Web Service Manager (Oracle WSM) to enforce policies at runtime, and test and monitor the performance of the WebLogic Web services. For more information, see *Oracle Fusion Middleware Security and Administrator's Guide for Web Services* ■ WebLogic Server Administration Console to deploy and administer the WebLogic Web service, and attach, manage, and configure policies. For more information, see *Oracle WebLogic Server Administration Console Help*.

1.3 Roadmap for Implementing Oracle Fusion Middleware Web Services

The following sections provide roadmaps of common tasks for developing, securing, and administering Oracle Fusion Middleware Web services. Roadmaps are presented for each Web service category shown in Figure 1–2:

- Roadmap for Implementing Oracle Infrastructure Web Services
- Roadmap for Implementing WebLogic (Java EE) Web Services

1.3.1 Roadmap for Implementing Oracle Infrastructure Web Services

The following sections provides roadmaps of common tasks for developing, securing, and administering Oracle Infrastructure Web services:

- Roadmap for Implementing SOA Composite Services and Clients

- Roadmap for Implementing ADF Components and Clients
- Roadmap for Implementing WebCenter Services and Clients

1.3.1.1 Roadmap for Implementing SOA Composite Services and Clients

Table 1–6 summarizes the roadmap for implementing SOA composite services and clients.

Table 1–6 Roadmap for Implementing SOA Composite Services and Clients

Task	More Information
Develop SOA composite Web services and clients	■ *Developer's Guide for Oracle Infrastructure Web Services* ■ *Developer's Guide for Oracle SOA Suite*
Deploy Web services	■ "Deploying an SOA Composite Application" in *Developer's Guide for Oracle SOA Suite* ■ "Deploying Web Services" in *Security and Administrator's Guide for Web Services* ■ Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite
Administer Web services	Part II: "Basic Administration" and Part III "Advanced Administration" in *Security and Administrator's Guide for Web Services*
Create policies	"Managing Web Service Policies" in *Security and Administrator's Guide for Web Services*
Create custom assertions	"Creating Custom Assertions" in *Extensibility Guide for Oracle Web Services Manager*
Attach policies (development time—Oracle JDeveloper)	"Managing Policies" in *Developer's Guide for Oracle SOA Suite*
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	■ "Attaching Policies to Web Services" in *Security and Administrator's Guide for Web Services* ■ "Understanding Policies" in *Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite*
Configure policies	■ "Setting Up Your Environment for Policies" in *Security and Administrator's Guide for Web Services* ■ "Configuring Policies" in *Security and Administrator's Guide for Web Services*
Test Web services	"Testing Web Services" in *Security and Administrator's Guide for Web Services*
Monitor Web service performance	"Monitoring the Performance of Web Services" in *Security and Administrator's Guide for Web Services*
Manage application migration between environments	"Managing Application Migration Between Environments" in *Security and Administrator's Guide for Web Services*
Diagnose problems	"Diagnosing Problems" in *Security and Administrator's Guide for Web Services*

Table 1–6 (Cont.) Roadmap for Implementing SOA Composite Services and Clients

Task	More Information
Interoperate with: ■ Oracle WSM 10g ■ Oracle Containers for J2EE (OC4J) ■ Oracle Web Service Gateways 10g ■ WebLogic Server Web service policies ■ Microsoft .NET 3.5 ■ Oracle Service Bus 10g ■ Axis 1.4 and WSS4J 1.5.8	*Interoperability Guide for Oracle Web Services Manager*

1.3.1.2 Roadmap for Implementing ADF Components and Clients

Table 1–7 summarizes how to implement ADF components and clients.

Table 1–7 Roadmap for Implementing ADF Components and Clients

Task	More Information
Develop ADF components and clients	■ *Developer's Guide for Oracle Infrastructure Web Services* ■ "Publishing Service-Enabled Application Modules" in *Fusion Developer's Guide for Oracle Application Development Framework* ■ "Accessing Remote Data Over the Service-Enabled Application Module" in *Fusion Developer's Guide for Oracle Application Development Framework* ■ "Integrating Web Services Into a Fusion Web Application" in *Fusion Developer's Guide for Oracle Application Development Framework*
Deploy Web services	■ "Deploying Fusion Web Applications" in *Fusion Developer's Guide for Oracle Application Development Framework* ■ "Deploying ADF Applications" in *Administrator's Guide for Oracle Application Development Framework* ■ "Deploying Web Services" in *Security and Administrator's Guide for Web Services*
Administer Web services	Part II: "Basic Administration" and Part III "Advanced Administration" in *Security and Administrator's Guide for Web Services*
Create policies	"Managing Web Service Policies" in *Security and Administrator's Guide for Web Services*
Create custom assertions	"Creating Custom Assertions" in *Extensibility Guide for Oracle Web Services Manager*
Attach policies (development time—Oracle JDeveloper)	"Securing Web Service Data Controls" in *Fusion Developer's Guide for Oracle Application Development Framework*
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	"Attaching Policies to Web Services" in *Security and Administrator's Guide for Web Services*

Table 1–7 (Cont.) Roadmap for Implementing ADF Components and Clients

Task	More Information
Configure policies	■ "Setting Up Your Environment for Policies" in *Security and Administrator's Guide for Web Services* ■ "Configuring Policies" in *Security and Administrator's Guide for Web Services*
Test Web services	"Testing Web Services" in *Security and Administrator's Guide for Web Services*
Monitor Web service performance	"Monitoring the Performance of Web Services" in *Security and Administrator's Guide for Web Services*
Manage application migration between environments	"Managing Application Migration Between Environments" in *Security and Administrator's Guide for Web Services*
Diagnose problems	"Diagnosing Problems" in *Security and Administrator's Guide for Web Services*
Interoperate with: ■ Oracle WSM 10g ■ Oracle Containers for J2EE (OC4J) ■ Oracle Web Service Gateways 10g ■ WebLogic Server Web service policies ■ Microsoft .NET 3.5 ■ Oracle Service Bus 10g ■ Axis 1.4 and WSS4J 1.5.8 ■ Glassfish Enterprise Server Release 3.0.1	*Interoperability Guide for Oracle Web Services Manager*

1.3.1.3 Roadmap for Implementing WebCenter Services and Clients

Table 1–8 summarizes the roadmap for implementing WebCenter services and clients.

Table 1–8 Roadmap for Implementing WebCenter Services and Clients

Task	More Information
Develop WebCenter services and clients	■ *Developer's Guide for Oracle WebCenter* ■ "Developing WebCenter Framework Applications" in the Oracle JDeveloper online help
Deploy WebCenter services	■ "Testing and Deploying Your WebCenter Application" in *Developer's Guide for Oracle WebCenter* ■ "Deploying WebCenter Applications" in *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*
Administer WebCenter services	*Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*
Create policies	"Managing Web Service Policies" in *Security and Administrator's Guide for Web Services*
Create custom assertions	"Creating Custom Assertions" in *Extensibility Guide for Oracle Web Services Manager*

Table 1–8 (Cont.) Roadmap for Implementing WebCenter Services and Clients

Task	More Information
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	■ "Attaching Policies to Web Services" in *Security and Administrator's Guide for Web Services* ■ "Managing Security" in *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*
Configure policies	■ "Setting Up Your Environment for Policies" in *Security and Administrator's Guide for Web Services* ■ "Configuring Policies" in *Security and Administrator's Guide for Web Services*
Test WebCenter services	"Testing and Deploying Your WebCenter Application" in *Developer's Guide for Oracle WebCenter*
Monitor WebCenter service performance	*Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*
Manage application migration between environments	"Managing Application Migration Between Environments" in *Security and Administrator's Guide for Web Services*
Diagnose problems	"Diagnosing Problems" in *Security and Administrator's Guide for Web Services*
Interoperate with: ■ Oracle WSM 10g ■ Oracle Containers for J2EE (OC4J) ■ Oracle Web Service Gateways 10g ■ WebLogic Server Web service policies ■ Microsoft .NET 3.5 ■ Oracle Service Bus 10g ■ Axis 1.4 and WSS4J 1.5.8 ■ Glassfish Enterprise Server Release 3.0.1	*Interoperability Guide for Oracle Web Services Manager*

1.3.2 Roadmap for Implementing WebLogic (Java EE) Web Services

The following table provides a roadmap of common tasks for developing, securing, and administering WebLogic (Java EE) Web services.

Table 1–9 Roadmap for Implementing WebLogic (Java EE) Web Services

Task	More Information
Develop WebLogic Web services and clients	■ *Introducing WebLogic Web Services for Oracle WebLogic Server* ■ *Getting Started With JAX-WS Web Services for Oracle WebLogic Server* ■ *Getting Started With JAX-RPC Web Services for Oracle WebLogic Server* ■ "Developing with Web Services" in the Oracle JDeveloper online help

Table 1–9 (Cont.) Roadmap for Implementing WebLogic (Java EE) Web Services

Task	More Information
Deploy Web services	■ "Install a Web Service" in *WebLogic Server Administration Console Online Help* ■ "Deploying Web Services" in the "Designing and Developing Applications" section of the Oracle JDeveloper Online Help
Administer Web services	"Web Services" in *WebLogic Server Administration Console Online Help*
Create Oracle WSM policies	"Managing Web Service Policies" in *Security and Administrator's Guide for Web Services*
Create WebLogic Web service policies	■ "Configuring Message-Level Security" in *Securing WebLogic Web Services for Oracle WebLogic Server* ■ "Configuring Transport-Level Security" in *Securing WebLogic Web Services for Oracle WebLogic Server* ■ "Configuring Access Control Security (JAX-RPC only)" in *Securing WebLogic Web Services for Oracle WebLogic Server*
Configure Oracle WSM policies	■ "Setting Up Your Environment for Policies" in *Security and Administrator's Guide for Web Services* ■ "Configuring Policies" in *Security and Administrator's Guide for Web Services*
Configure WebLogic Web service policies	■ "Configuring Message-Level Security" in *Securing WebLogic Web Services for Oracle WebLogic Server* ■ "Configuring Transport-Level Security" in *Securing WebLogic Web Services for Oracle WebLogic Server* ■ "Configuring Access Control Security (JAX-RPC only)" in *Securing WebLogic Web Services for Oracle WebLogic Server*
Create custom Oracle WSM policy file	"Creating Custom Assertions" in *Extensibility Guide for Oracle Web Services Manager*
Create custom WebLogic Web service policy file	"Creating and Using a Custom Policy File" in *Securing WebLogic Web Services for Oracle WebLogic Server*
Attach Oracle WSM policies (development time—Oracle JDeveloper)	■ "Attaching Policies to WebLogic Web Services and Clients" in *Security and Administrator's Guide for Web Services* ■ "Using Policies with Web Services" in the Oracle JDeveloper online help

Table 1–9 (Cont.) Roadmap for Implementing WebLogic (Java EE) Web Services

Task	More Information
Attach WebLogic Web service policies (development time—Oracle JDeveloper)	■ "Using Oracle Web Service Manager Security Policies" in *Securing WebLogic Web Services for Oracle WebLogic Server* ■ "Using Policies with Web Services" in the Oracle JDeveloper online help ■ "Using Web Services Reliable Messaging" in *Programming Advanced Features of JAX-RPC Web Services for Oracle WebLogic Server*
Attach Oracle WSM policies (deployment time)	"Attaching Policies to Web Services" in *Security and Administrator's Guide for Web Services*
Attach WebLogic Web service policies (deployment time)	"Associate a WS-Policy file with a Web Service" in *WebLogic Server Administration Console Online Help*
Test Web services	■ "Testing Web Services" in *Security and Administrator's Guide for Web Services* ■ "Test a Web Service" in *WebLogic Server Administration Console Online Help* ■ "Testing and Debugging Web Services" in the Oracle JDeveloper online help
Monitor Web service performance	■ "Monitoring the Performance of Web Services" in *Security and Administrator's Guide for Web Services* ■ "Monitor a Web Service" in *WebLogic Server Administration Console Online Help*
Interoperate WebLogic and Oracle WSM Web service policies	*Interoperability Guide for Oracle Web Services Manager*

1.4 Related Documentation

The following table summarizes the documentation that is related to Web services development, security, and administration.

Table 1–10 Related Documentation

Document	Description
Introducing Web Services	This document. Provides an introduction to Web services for Oracle Fusion Middleware 11g.
Security and Administrator's Guide for Web Services	Describes how to secure and administer Oracle Infrastructure Web services.
Extensibility Guide for Oracle Web Services Manager	Describes how to build custom assertions for Oracle Web Services Manager (Oracle WSM).
Interoperability Guide for Oracle Web Services Manager	Describes how to implement the most common Oracle WSM interoperability scenarios.
Developer's Guide for Oracle Infrastructure Web Services	Introduces concepts that are relevant to Oracle Infrastructure Web services.
Introducing WebLogic Web Services for Oracle WebLogic Server	Introduces WebLogic Web services, the standards that are supported, interoperability information, and relevant samples and documentation.

Table 1–10 (Cont.) Related Documentation

Document	Description
Getting Started With JAX-WS Web Services for Oracle WebLogic Server	Provides the basic knowledge and tasks required to program a simple WebLogic Web service using JAX-WS. The guide includes use cases and examples, iterative development procedures, typical JWS programming steps, data type information, and how to invoke a Web service.
Programming Advanced Features of JAX-WS Web Services for Oracle WebLogic Server	Describes how to program more advanced features using JAX-WS, such as callbacks, XML Catalog, and SOAP message handlers.
Getting Started With JAX-RPC Web Services for Oracle WebLogic Server	Provides the basic knowledge and tasks required to program a simple WebLogic Web service using JAX-RPC. The guide includes use cases and examples, iterative development procedures, typical JWS programming steps, data type information, and how to invoke a Web service.
Programming Advanced Features of JAX-RPC Web Services for Oracle WebLogic Server	Describes how to program more advanced features using JAX-RPC, such as Web service reliable messaging, callbacks, conversational Web services, use of JMS transport to invoke a Web service, and SOAP message handlers.
Securing WebLogic Web Services for Oracle WebLogic Server	Describes how to program and configure message-level (digital signatures and encryption), transport-level, and access control security for a Web service.
WebLogic Web Services Reference for Oracle WebLogic Server	Provides reference information on JWS annotations, Ant tasks, reliable messaging WS-Policy assertions, security WS-Policy assertions, and deployment descriptors.
Developer's Guide for Oracle SOA Suite	Describes how to develop SOA composite services.
Fusion Developer's Guide for Oracle Application Development Framework	Describes how to develop ADF components.
Developer's Guide for Oracle WebCenter	Describes how to develop WebCenter services.
"Developing with Web Services" in the Oracle JDeveloper online help	Describes how to develop Web services and attach policies using Oracle JDeveloper.
Oracle Workshop for WebLogic Server	Explains how to use Workshop to write and manage source code and design with sophisticated visual tools and Java frameworks. **NOTE**: Oracle Workshop is deprecated, and is being replaced by OEPE, described above.