

Oracle® Fusion Middleware

Introducing Web Services

11g Release 1 (11.1.1.7)

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

- [What Are Web Services?](#)
- [Overview of Web Services in Oracle Fusion Middleware](#)
- [Roadmap for Implementing Oracle Fusion Middleware Web Services](#)
- [Related Documentation](#)
- [Documentation Accessibility](#)

1 What Are Web Services?

A Web service is a program that can be accessed remotely using different standards-based languages. What this program can do (that is, the functionality it implements) is described in a standard vocabulary.

Major benefits of Web services include:

- Interoperability among distributed applications that span diverse hardware and software platforms
- Easy, widespread access to applications through firewalls using Web protocols
- A cross-platform, cross-language data model that facilitates developing heterogeneous distributed applications

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).

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. Because you access Web services using standard Web protocols such as XML or HTTP, the diverse and heterogeneous applications on the Web (which typically already understand XML and HTTP) can automatically access Web services and communicate with each other.

[Table 1](#) lists the supported Web service protocols.

1.1 SOAP Web Services

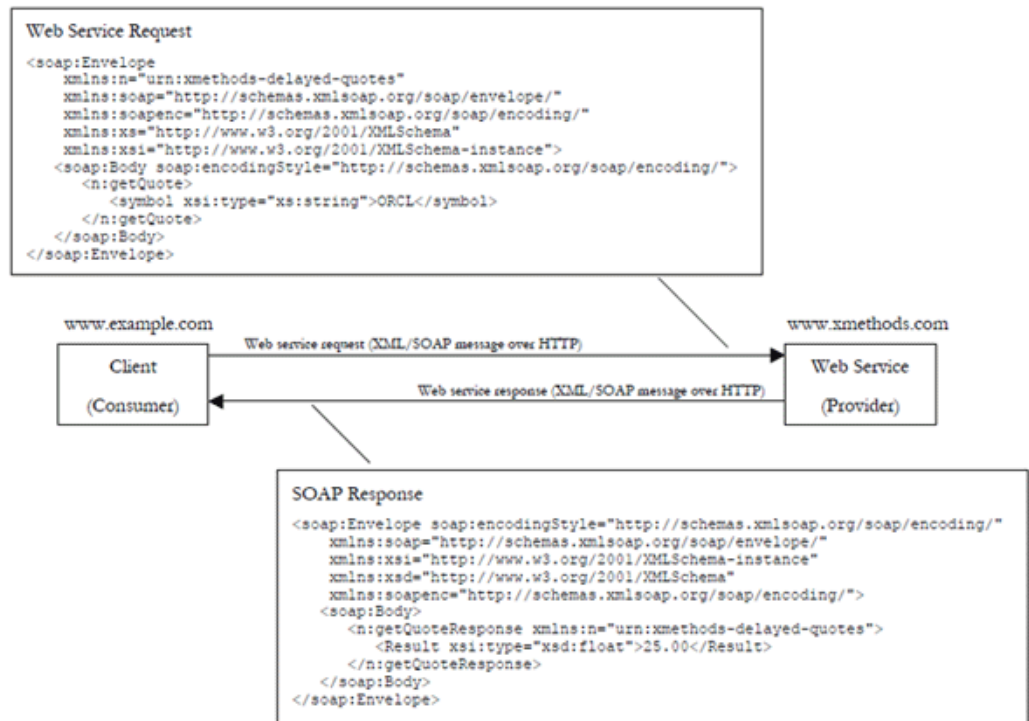
SOAP provides a protocol for exchanging structured information in the implementation of Web services. SOAP Web services rely on XML-based and other industry standards:

- Simple Object Access Protocol (SOAP)—A protocol for exchanging structured information in the implementation of Web services.
- 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.
- Web Services Description Language (WSDL)—An XML-based language providing a model for describing SOAP-based 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.

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.

Figure 1 Example of SOAP Message Exchange Between Web Service Consumer and Provider



This figure shows a Web service request and response SOAP messages.

In this example, the Web service consumer sends a request in the form of a 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.xmethods.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).

1.2 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.

RESTful Web services are services that are built according to REST principles and, as such, are designed to work well on the Web. RESTful Web services conform to the architectural style constraints defined in "Introduction to the REST Architectural Style" in *Using the Jersey JAX-RS Reference Implementation*. Typically, RESTful Web services are built on the HTTP protocol and implement operations that map to the common HTTP

methods, such as GET, POST, PUT, and DELETE to create, retrieve, update, and delete resources, respectively.

The Java API for RESTful Web Services (JAX-RS) provides support for creating Web services according to REST architectural style. JAX-RS uses **annotations** to simplify the development of RESTful Web services. By simply adding annotations to your Web service, you can define the resources and the actions that can be performed on those resources.

A JAX-RS *resource* is an annotated POJO that provides resource methods that are able to handle HTTP requests for URI paths that the resource is bound to. Consider the following example:

```
package com.example;

import javax.ws.rs.GET;
import javax.ws.rs.Path;
import javax.ws.rs.Produces;
import javax.ws.rs.core.MediaType;

/**
 * Root resource (exposed at "myresource" path)
 */
@Path("myresource")
public class MyResource {

    /**
     * Method handling HTTP GET requests. The returned object will be sent
     * to the client as "text/plain" media type.
     *
     * @return String that will be returned as a text/plain response.
     */
    @GET
    @Produces(MediaType.TEXT_PLAIN)
    public String getIt() {
        return "Got it!";
    }
}
```

In this example, the resource:

- Exposes a single resource method that is able to handle HTTP GET requests.
- Is bound to /myresource URI path.
- Can produce responses with response message content represented in text/plain media type.
- Returns the same "Got it!" response to all client requests.

RESTful Web services rely on the following industry standards:

- Web Application Description Language (WADL)—An XML-based language providing a model for describing RESTful 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.

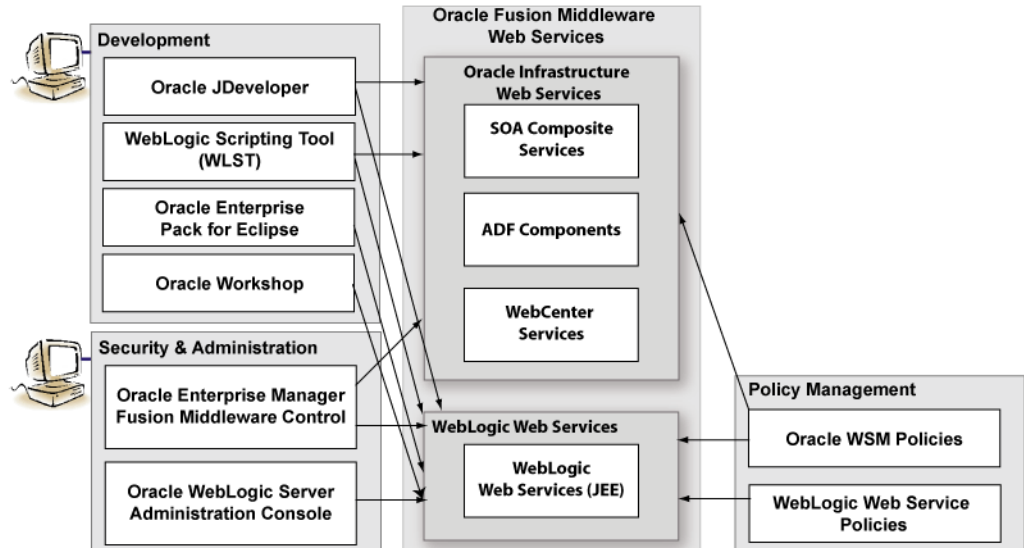
2 Overview of Web Services in Oracle Fusion Middleware

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

- Oracle Infrastructure web services—SOA, Application Development Framework (ADF, and WebCenter), and Web Center services
- Java EE web services—SOAP (Java API for XML Web Services (JAX-WS)) and RESTful (JAX-RS) web services

The following figure illustrates the two Web services categories.

Figure 2 Web Services in Oracle Fusion Middleware 11g



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

- [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 10.

2.1 Types of Web Services and Clients

[Table 2](#) summarizes the types of Web services supported in Oracle Fusion Middleware 11g.

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.

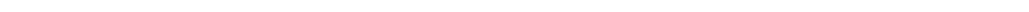
Table 2 Oracle Fusion Middleware Web Services

Web Service	Description
Java EE web service (SOAP and RESTful)	<p>SOAP Java EE 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.</p> <p>RESTful Java EE web services are implemented according to the JSR-311 JAX-RS 1.1 specification, defined at: https://jcp.org/en/jsr/summary?id=311.</p> <p>For more information about developing WebLogic Web services, see:</p> <ul style="list-style-type: none">■ <i>Introducing Web Services in Oracle WebLogic Server</i>■ <i>Getting Started Using JAX-WS Web Services for Oracle WebLogic Server</i>■ <i>Using the Jersey JAX-RS Reference Implementation</i>■ <i>Getting Started Using JAX-RPC Web Services for Oracle WebLogic Server</i>■ "Developing with Web Services" in the <i>Oracle JDeveloper online help</i> <p>You can deploy WebLogic Web services to any Oracle WebLogic Server environment, including a standalone environment.</p>
SOA service components	<p>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.</p> <p>The following SOA service components can be managed using Oracle WSM:</p> <ul style="list-style-type: none">■ 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. <p>For more information about developing SOA service components, see <i>Developer's Guide for Oracle SOA Suite</i>.</p> <p>You can deploy SOA service components to the Oracle Fusion Middleware environment.</p>

Table 2 (Cont.) Oracle Fusion Middleware Web Services

Web Service	Description
SOA service binding components	<p>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 <i>Developer's Guide for Oracle SOA Suite</i>.</p>
ADF Business Components	<p>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.</p> <p>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:</p> <ul style="list-style-type: none">■ Connect to the database.■ Retrieve data.■ Lock database records.■ Manage transactions. <p>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.</p> <p>For more information, see "Integrating Service-Enabled Application Modules" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i>.</p>
WebCenter services	<p>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 <i>Developer's Guide for Oracle WebCenter</i>.</p>

Table 3 summarizes the types of Web service clients supported in Oracle Fusion Middleware 11g.



2.2 Types of Web Service Policies

As shown in [Figure 2](#), there are two types of policies that can be attached to Web services.

Table 5 (Cont.) Tools for Web Service Development

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

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

Table 6 Tools for Web Service Security and Administration

To secure and administer . . .	Use . . .
Oracle Infrastructure Web Services	<ul style="list-style-type: none">■ Oracle Enterprise Manager Fusion Middleware Control for all security and administration tasks. For more information, see <i>Oracle Fusion Middleware Security and Administrator's Guide for Web Services</i>.■ Oracle WebLogic Scripting Tool (WLST) to view, configure, and secure Oracle Infrastructure Web services. For more information, see <i>Oracle Fusion Middleware Oracle WebLogic Scripting Tool</i>.
WebLogic Web Services	<ul style="list-style-type: none">■ 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 <i>Oracle Fusion Middleware Security and Administrator's Guide for Web Services</i>■ WebLogic Server Administration Console to deploy and administer the WebLogic Web service, and attach, manage, and configure policies. For more information, see <i>Oracle WebLogic Server Administration Console Help</i>.

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 2](#):

- [Roadmap for Implementing Oracle Infrastructure Web Services and Clients](#)
- [Roadmap for Implementing WebLogic \(Java EE\) Web Services and Clients](#)

3.1 Roadmap for Implementing Oracle Infrastructure Web Services and Clients

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](#)

3.1.1 Roadmap for Implementing SOA Composite Services and Clients

[Table 7](#) summarizes the roadmap for implementing SOA composite services and clients.

Table 7 Roadmap for Implementing SOA Composite Services and Clients

Task	More Information
Develop SOA composite Web services and clients	<ul style="list-style-type: none"> ■ <i>Developer's Guide for Oracle Infrastructure Web Services</i> ■ <i>Developer's Guide for Oracle SOA Suite</i>
Deploy Web services	<ul style="list-style-type: none"> ■ "Deploying an SOA Composite Application" in <i>Developer's Guide for Oracle SOA Suite</i> ■ "Deploying Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ <i>Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite</i>
Administer Web services	Part II: "Basic Administration" and Part III "Advanced Administration" in <i>Security and Administrator's Guide for Web Services</i>
Create policies	"Managing Web Service Policies" in <i>Security and Administrator's Guide for Web Services</i>
Create custom assertions	"Creating Custom Assertions" in <i>Extensibility Guide for Oracle Web Services Manager</i>
Attach policies (development time—Oracle JDeveloper)	"Managing Policies" in <i>Developer's Guide for Oracle SOA Suite</i>
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	<ul style="list-style-type: none"> ■ "Attaching Policies to Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ "Understanding Policies" in <i>Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite</i>
Configure policies	<ul style="list-style-type: none"> ■ "Setting Up Your Environment for Policies" in <i>Security and Administrator's Guide for Web Services</i> ■ "Configuring Policies" in <i>Security and Administrator's Guide for Web Services</i>
Test Web services	"Testing Web Services" in <i>Security and Administrator's Guide for Web Services</i>
Monitor Web service performance	"Monitoring the Performance of Web Services" in <i>Security and Administrator's Guide for Web Services</i>
Manage application migration between environments	"Managing Application Migration Between Environments" in <i>Security and Administrator's Guide for Web Services</i>
Diagnose problems	"Diagnosing Problems" in <i>Security and Administrator's Guide for Web Services</i>

Table 7 (Cont.) Roadmap for Implementing SOA Composite Services and Clients

Task	More Information
Interoperate with:	<i>Interoperability Guide for Oracle Web Services Manager</i>
<ul style="list-style-type: none"> ■ 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 	

3.1.2 Roadmap for Implementing ADF Components and Clients

Table 8 summarizes how to implement ADF components and clients.

Table 8 Roadmap for Implementing ADF Components and Clients

Task	More Information
Develop ADF components and clients	<ul style="list-style-type: none"> ■ <i>Developer's Guide for Oracle Infrastructure Web Services</i> ■ "Publishing Service-Enabled Application Modules" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i> ■ "Accessing Remote Data Over the Service-Enabled Application Module" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i> ■ "Integrating Web Services Into a Fusion Web Application" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i>
Deploy Web services	<ul style="list-style-type: none"> ■ "Deploying Fusion Web Applications" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i> ■ "Deploying ADF Applications" in <i>Administrator's Guide for Oracle Application Development Framework</i> ■ "Deploying Web Services" in <i>Security and Administrator's Guide for Web Services</i>
Administer Web services	Part II: "Basic Administration" and Part III "Advanced Administration" in <i>Security and Administrator's Guide for Web Services</i>
Create policies	"Managing Web Service Policies" in <i>Security and Administrator's Guide for Web Services</i>
Create custom assertions	"Creating Custom Assertions" in <i>Extensibility Guide for Oracle Web Services Manager</i>
Attach policies (development time—Oracle JDeveloper)	"Securing Web Service Data Controls" in <i>Fusion Developer's Guide for Oracle Application Development Framework</i>
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	"Attaching Policies to Web Services" in <i>Security and Administrator's Guide for Web Services</i>

Table 8 (Cont.) Roadmap for Implementing ADF Components and Clients

Task	More Information
Configure policies	<ul style="list-style-type: none"> ■ "Setting Up Your Environment for Policies" in <i>Security and Administrator's Guide for Web Services</i> ■ "Configuring Policies" in <i>Security and Administrator's Guide for Web Services</i>
Test Web services	"Testing Web Services" in <i>Security and Administrator's Guide for Web Services</i>
Monitor Web service performance	"Monitoring the Performance of Web Services" in <i>Security and Administrator's Guide for Web Services</i>
Manage application migration between environments	"Managing Application Migration Between Environments" in <i>Security and Administrator's Guide for Web Services</i>
Diagnose problems	"Diagnosing Problems" in <i>Security and Administrator's Guide for Web Services</i>
Interoperate with:	<i>Interoperability Guide for Oracle Web Services Manager</i>
<ul style="list-style-type: none"> ■ 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 	

3.1.3 Roadmap for Implementing WebCenter Services and Clients

Table 9 summarizes the roadmap for implementing WebCenter services and clients.

Table 9 Roadmap for Implementing WebCenter Services and Clients

Task	More Information
Develop WebCenter services and clients	<ul style="list-style-type: none"> ■ <i>Developer's Guide for Oracle WebCenter</i> ■ "Developing WebCenter Framework Applications" in the Oracle JDeveloper online help
Deploy WebCenter services	<ul style="list-style-type: none"> ■ "Testing and Deploying Your WebCenter Application" in <i>Developer's Guide for Oracle WebCenter</i> ■ "Deploying WebCenter Applications" in <i>Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter</i>
Administer WebCenter services	<i>Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter</i>
Create policies	"Managing Web Service Policies" in <i>Security and Administrator's Guide for Web Services</i>
Create custom assertions	"Creating Custom Assertions" in <i>Extensibility Guide for Oracle Web Services Manager</i>

Table 9 (Cont.) Roadmap for Implementing WebCenter Services and Clients

Task	More Information
Attach policies (deployment time—Oracle Enterprise Manager Fusion Middleware Control)	<ul style="list-style-type: none"> ■ "Attaching Policies to Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ "Managing Security" in <i>Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter</i>
Configure policies	<ul style="list-style-type: none"> ■ "Setting Up Your Environment for Policies" in <i>Security and Administrator's Guide for Web Services</i> ■ "Configuring Policies" in <i>Security and Administrator's Guide for Web Services</i>
Test WebCenter services	"Testing and Deploying Your WebCenter Application" in <i>Developer's Guide for Oracle WebCenter</i>
Monitor WebCenter service performance	<i>Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter</i>
Manage application migration between environments	"Managing Application Migration Between Environments" in <i>Security and Administrator's Guide for Web Services</i>
Diagnose problems	"Diagnosing Problems" in <i>Security and Administrator's Guide for Web Services</i>
Interoperate with:	<i>Interoperability Guide for Oracle Web Services Manager</i>
<ul style="list-style-type: none"> ■ 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 	

3.2 Roadmap for Implementing WebLogic (Java EE) Web Services and Clients

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

Table 10 Roadmap for Implementing WebLogic (Java EE) Web Services and Clients

Task	More Information
Develop WebLogic Web services and clients	<ul style="list-style-type: none">■ <i>Introducing WebLogic Web Services for Oracle WebLogic Server</i>■ <i>Getting Started With JAX-WS Web Services for Oracle WebLogic Server</i>■ "Creating RESTful Web Services and Clients" in <i>Using the Jersey JAX-RS Reference Implementation</i>■ <i>Getting Started With JAX-RPC Web Services for Oracle WebLogic Server</i>■ "Developing with Web Services" in the Oracle JDeveloper online help
Deploy Web services	<ul style="list-style-type: none">■ "Install a Web Service" in <i>WebLogic Server Administration Console Online Help</i>■ "Deploying Web Services" in the "Designing and Developing Applications" section of the Oracle JDeveloper Online Help
Administer Web services	"Web Services" in <i>WebLogic Server Administration Console Online Help</i>
Create Oracle WSM policies	"Managing Web Service Policies" in <i>Security and Administrator's Guide for Web Services</i>
Create WebLogic Web service policies	<ul style="list-style-type: none">■ "Configuring Message-Level Security" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>■ "Configuring Transport-Level Security" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>■ "Configuring Access Control Security (JAX-RPC only)" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>
Configure Oracle WSM policies	<ul style="list-style-type: none">■ "Setting Up Your Environment for Policies" in <i>Security and Administrator's Guide for Web Services</i>■ "Configuring Policies" in <i>Security and Administrator's Guide for Web Services</i>
Configure WebLogic Web service policies	<ul style="list-style-type: none">■ "Configuring Message-Level Security" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>■ "Configuring Transport-Level Security" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>■ "Configuring Access Control Security (JAX-RPC only)" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>
Create custom Oracle WSM policy file	"Creating Custom Assertions" in <i>Extensibility Guide for Oracle Web Services Manager</i>
Create custom WebLogic Web service policy file	"Creating and Using a Custom Policy File" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i>

Table 10 (Cont.) Roadmap for Implementing WebLogic (Java EE) Web Services and

Task	More Information
Attach Oracle WSM policies (development time—Oracle JDeveloper)	<ul style="list-style-type: none"> ■ "Attaching Policies to WebLogic Web Services and Clients" in <i>Security and Administrator's Guide for Web Services</i> ■ "Securing RESTful Web Service Clients Using Feature Classes" in <i>Using the Jersey JAX-RS Reference Implementation</i> ■ "Using Policies with Web Services" in the Oracle JDeveloper online help
Attach WebLogic Web service policies (development time—Oracle JDeveloper)	<ul style="list-style-type: none"> ■ "Using Oracle Web Service Manager Security Policies" in <i>Securing WebLogic Web Services for Oracle WebLogic Server</i> ■ "Using Policies with Web Services" in the Oracle JDeveloper online help ■ "Using Web Services Reliable Messaging" in <i>Programming Advanced Features of JAX-RPC Web Services for Oracle WebLogic Server</i>
Attach Oracle WSM policies (deployment time)	<ul style="list-style-type: none"> ■ "Attaching Policies to Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ "Securing RESTful Web Service Clients Using Feature Classes" in <i>Using the Jersey JAX-RS Reference Implementation</i>
Attach WebLogic Web service policies (deployment time)	"Associate a WS-Policy file with a Web Service" in <i>WebLogic Server Administration Console Online Help</i>
Attach Oracle WSM to servlet applications	<ul style="list-style-type: none"> ■ "Securing the Jersey Servlet Application" in <i>Using the Jersey JAX-RS Reference Implementation</i> ■ "Attaching Policies to Servlet Applications" in <i>Security and Administrator's Guide for Web Services</i>
Test Web services	<ul style="list-style-type: none"> ■ "Testing Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ "Test a Web Service" in <i>WebLogic Server Administration Console Online Help</i> ■ "Testing and Debugging Web Services" in the Oracle JDeveloper online help
Monitor Web service performance	<ul style="list-style-type: none"> ■ "Monitoring the Performance of Web Services" in <i>Security and Administrator's Guide for Web Services</i> ■ "Monitor a Web Service" in <i>WebLogic Server Administration Console Online Help</i>
Interoperate WebLogic and Oracle WSM Web service policies	<i>Interoperability Guide for Oracle Web Services Manager</i>

4 Related Documentation

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

Table 11 Related Documentation

Document	Description
<i>Introducing Web Services</i>	This document. Provides an introduction to Web services for Oracle Fusion Middleware 11g.
<i>Security and Administrator's Guide for Web Services</i>	Describes how to secure and administer Oracle Infrastructure Web services.
<i>Extensibility Guide for Oracle Web Services Manager</i>	Describes how to build custom assertions for Oracle Web Services Manager (Oracle WSM).
<i>Interoperability Guide for Oracle Web Services Manager</i>	Describes how to implement the most common Oracle WSM interoperability scenarios.
<i>Developer's Guide for Oracle Infrastructure Web Services</i>	Introduces concepts that are relevant to Oracle Infrastructure Web services.
<i>Introducing WebLogic Web Services for Oracle WebLogic Server</i>	Introduces WebLogic Web services, the standards that are supported, interoperability information, and relevant samples and documentation.
<i>Getting Started With JAX-WS Web Services for Oracle WebLogic Server</i>	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.
<i>Programming Advanced Features of JAX-WS Web Services for Oracle WebLogic Server</i>	Describes how to program more advanced features using JAX-WS, such as callbacks, XML Catalog, and SOAP message handlers.
<i>Using the Jersey JAX-RS Reference Implementation</i>	Describes how to use the Jersey JAX-RS Reference Implementation (RI) with Oracle Fusion Middleware 11g to develop and secure RESTful Web services and clients.
<i>Getting Started With JAX-RPC Web Services for Oracle WebLogic Server</i>	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.
<i>Programming Advanced Features of JAX-RPC Web Services for Oracle WebLogic Server</i>	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.
<i>Securing WebLogic Web Services for Oracle WebLogic Server</i>	Describes how to program and configure message-level (digital signatures and encryption), transport-level, and access control security for a Web service.
<i>WebLogic Web Services Reference for Oracle WebLogic Server</i>	Provides reference information on JWS annotations, Ant tasks, reliable messaging WS-Policy assertions, security WS-Policy assertions, and deployment descriptors.
<i>Developer's Guide for Oracle SOA Suite</i>	Describes how to develop SOA composite services.
<i>Fusion Developer's Guide for Oracle Application Development Framework</i>	Describes how to develop ADF components.
<i>Developer's Guide for Oracle WebCenter</i>	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.

Table 11 (Cont.) Related Documentation

Document	Description
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.

5 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

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