

# Web Services Overview

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## 1. Beehive Web Services Features

### Metadata Annotations

Beehive web services use Java metadata annotations to simplify the web service development process. Metadata annotations are easy to learn and use, and offer the developer an especially quick way to change the web service implementation. The annotations offer implementations of the most common web service features, such as (1) conforming to basic SOAP and WSDL standards, (2) separating the public contract and the private implementation, and (3) creating asynchronous communication between the web service and its clients. The basic idea underlying all Beehive web service development is that the developer writes an ordinary Java class, whose functionality is exposed as a web service. The manner of exposure is specified by the metadata annotations that decorate the class and its methods.

### Standards Based

Beehive web services are based on the [JSR 181](http://jcp.org/en/jsr/detail?id=181) (<http://jcp.org/en/jsr/detail?id=181>) web service standard. JSR 181 sets out the core annotations used to expose Java classes as web services.

### No Expertise with APIs and Deployment Descriptors Required

Beehive web services are implemented as ordinary Java classes decorated with metadata annotations. The metadata annotations (1) replace the deployment descriptors (that would ordinarily be used to configure the Java class) and (2) encapsulate the web service APIs (that would ordinarily be used by the developer as an implementation resource). The result is a web service implementation that is much easier to learn and understand. Instead of keeping multiple Java classes and XML configuration files in sync, the developer needs to edit only one file: the annotated Java class.

### Containers

[todo]

## 2. Web Service Basics

### What Do Web Services Do?

At the most basic level, web services are servlets that take requests (in the form of XML documents) and sends back responses (in the form of XML documents).

### SOAP

## *Web Services Overview*

### **Design Considerations**

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