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| --- | --- |
| 1 | understanding web services |
| 2 | understanding request URI |
| 3 | understanding CRUD operations of API (GET POST etc) |
| 4 | understanding query parameters and headers |
| 5 | Difference between Soap and REST API |
| 6 | Installation and walkthrough of tool. |
| 7 | Creating API request test case |
| 8 | Adding assertions |
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web service is, therefore, any service that −

* Is available over the Internet or private (intranet) networks
* Uses a standardized XML messaging system
* Is not tied to any one operating system or programming language
* Is self-describing via a common XML grammar
* Is discoverable via a simple find mechanism

Components of Web Services

The basic web services platform is XML + HTTP. All the standard web services work using the following components −

* SOAP (Simple Object Access Protocol)
* UDDI (Universal Description, Discovery and Integration)
* WSDL (Web Services Description Language)

All these components have been discussed in the [Web Services Architecture](https://www.tutorialspoint.com/webservices/web_services_architecture.htm) chapter.

How Does a Web Service Work?

A web service enables communication among various applications by using open standards such as HTML, XML, WSDL, and SOAP. A web service takes the help of −

* XML to tag the data
* SOAP to transfer a message
* WSDL to describe the availability of service.

You can build a Java-based web service on Solaris that is accessible from your Visual Basic program that runs on Windows.

You can also use C# to build new web services on Windows that can be invoked from your web application that is based on JavaServer Pages (JSP) and runs on Linux.

Example

Consider a simple account-management and order processing system. The accounting personnel use a client application built with Visual Basic or JSP to create new accounts and enter new customer orders.

The processing logic for this system is written in Java and resides on a Solaris machine, which also interacts with a database to store information.

The steps to perform this operation are as follows −

* The client program bundles the account registration information into a SOAP message.
* This SOAP message is sent to the web service as the body of an HTTP POST request.
* The web service unpacks the SOAP request and converts it into a command that the application can understand.
* The application processes the information as required and responds with a new unique account number for that customer.
* Next, the web service packages the response into another SOAP message, which it sends back to the client program in response to its HTTP request.
* The client program unpacks the SOAP message to obtain the results of the account registration process.

## Web Service Roles

There are three major roles within the web service architecture −

### **Service Provider**

This is the provider of the web service. The service provider implements the service and makes it available on the Internet.

### **Service Requestor**

This is any consumer of the web service. The requestor utilizes an existing web service by opening a network connection and sending an XML request.

### **Service Registry**

This is a logically centralized directory of services. The registry provides a central place where developers can publish new services or find existing ones. It therefore serves as a centralized clearing house for companies and their services.





