Web Services Overview

Web services provide web-based APIs to support machine-to-machine communication over networks. Because these APIs are web-based, they inherently support interaction between devices running on different architectures and speaking different native languages.

Common examples of web services include weather forecasts, stock market quotes, and book inventories. A server with a database responds to remote queries for data, where the client specifies a particular city, stock symbol, or book title, for example. The client application sends queries to the server, parses the response, and processes the returned data.

All web service schemes utilize a web-based transport mode, such as HTTP, HTTPS.

REST (REpresentational State Transfer) is an architectural style, and an approach to communications that is often used in the development of [Web services](http://searchsoa.techtarget.com/definition/Web-Services-Glossary). The use of REST is often preferred over the more heavyweight [SOAP](http://searchsoa.techtarget.com/definition/SOAP) (Simple Object Access Protocol) style because REST does not leverage as much bandwidth, which makes it a better fit for use over the Internet. The SOAP approach requires writing or using a provided server program (to serve data) and a client program (to request data).

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| **No.** | **SOAP** | **REST** |
| 1) | SOAP is a **protocol**. | REST is an **architectural style**. |
| 2) | SOAP stands for **Simple Object Access Protocol**. | REST stands for **REpresentational State Transfer**. |
| 3) | SOAP **can't use REST** because it is a protocol. | REST **can use SOAP** web services because it is a concept and can use any protocol like HTTP, SOAP. |
| 4) | SOAP **uses services interfaces to expose the business logic**. | REST **uses URI to expose business logic**. |
| 5) | **JAX-WS** is the java API for SOAP web services. | **JAX-RS** is the java API for RESTful web services. |
| 6) | SOAP **defines standards**to be strictly followed. | REST does not define too much standards like SOAP. |
| 7) | SOAP **requires more bandwidth** and resource than REST. | REST **requires less bandwidth** and resource than SOAP. |
| 8) | SOAP **defines its own security**. | RESTful web services **inherits security measures** from the underlying transport. |
| 9) | SOAP **permits XML** data format only. | REST **permits different** data format such as Plain text, HTML, XML, JSON etc. |
| 10) | SOAP is **less preferred** than REST. | REST **more preferred** than SOAP. |