

About API and Web Services

In this lesson, we'll discuss API and web services.

We'll cover the following ^

- What is an API?
- What is a web service?
- Types of web services
- API vs web services
- SOAP vs REST

What is an API?

API stands for **Application Programming Interface**.

It is a software interface that allows two distinct services/applications to interact without one having to know the implementation details of the other. It is what we call, protocol agnostic.

What is a web service?

A **web service** is a medium that lets two machines communicate with each other over a network.

In other words, it allows communication between the *client* and the *server* applications using the XML, JSON, and other plain text open standards over the *World Wide Web* (WWW).

The **W3C** defined a **web service** as:

A web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL). Other systems interact with the web service in a manner prescribed by its description using SOAP messages, typically conveyed using HTTP with an XML serialization in conjunction with

Types of web services

There are two main types of web services:

- **SOAP web services** – *SOAP* which stands for **Simple Object Access Protocol**, is a specification that enables applications to communicate with other applications. It uses an *XML-based* protocol to access web services over **HTTP**.
- **RESTful web services** – *REST* which stands for **Representational State Transfer**, is a service developed on the REST architecture and is often called a *RESTful* service. They are lightweight, maintainable, and scalable in nature. The underlying protocol for *REST* is **HTTP**.

API vs web services

API	Web Services
Not all APIs are web services	All web services are APIs
APIs can use any style for communication	A web service can use SOAP, REST, and XML-RPC for communication
APIs can also be used to invoke functions within a software, so it does not always need a network for its operation	A web service will always need a network for its operation

SOAP vs REST

Please refer to this [SOAP Vs REST](#) article to understand the differences between them.

Let's wrap up this chapter by solving a quiz in the upcoming lesson.

