SOAP API

By

Naveen Suryadevara

**INTRODUCTION:**

**SOAP** (**Simple Object Access Protocol**) is a messaging protocol specification for exchanging structured information in the implementation of web services in Computer Networks. It is set of rules formalizing and governing the format and processing rules for information exchanged between a SOAP sender and a SOAP receiver. SOAP provides a messaging framework only. However, it can be extended to add features such as reliability, security etc. SOAP is platform- and language independent. There are rules to be followed when adding features to the SOAP framework. It uses XML for its message format, and relies on application layer protocols, most often Hyper Text Transfer Protocol (HTTP) or Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission. SOAP allows processes running on disparate operating systems (such as Windows and Linux) to communicate using Extensible Markup Language (XML). Since Web protocols like HTTP are installed and running on all operating systems, SOAP allows clients to invoke web services and receive responses independent of language and platforms.

**SOAP has three major characteristics:**

* Extensibility (Security)
* Neutrality (It can accept any protocol such as HTTP, SMTP, TCP, UDP or JMS)
* Independence (It allows for any Programming model)

**ADVANTAGES:**

There are some use cases that SOAP tends to be better suited for. For instance, if you need more robust security, SOAP’s support for WS-Security can come in handy. It offers some additional assurances for data privacy and integrity. It also provides support for identity verification through intermediaries rather than just point-to-point, as provided by SSL.

It offers built-in retry logic to compensate for failed communications. REST, on the other hand, doesn’t have a built-in messaging system. If a communication fails, the client has to deal with it by retrying. There’s also no standard set of rules for REST. This means that both parties (the service and the consumer) need to understand both content and context.

**DISADVANTAGES:**

SOAP allows only XML where as REST allows greater variety of data formats. SOAP doesn’t support JSON(which typically works better with data and offers faster parsing). SOAP uses High Bandwidth(more resources such as memory).

Still, SOAP remains the preferred protocol for certain use cases. The general consensus among experts these days is that REST is the typically preferred protocol unless there’s a compelling reason to use SOAP.

**WHEN TO USE:**

SOAP is particularly used so that it is secured where as REST we can make it secured. So security is main reason SOAP is preferred. An optional Fault element that contains information about any errors encountered during the API request and response.