

Rest Vs Soap

REST and SOAP are 2 different approaches to online data transmission. Specifically, both define how to build application programming interfaces (APIs), which allow data to be communicated between web applications.

Representational state transfer (REST) is a **set of architectural principles**.

Simple object access protocol (SOAP) is an **official protocol maintained by the World Wide Web Consortium (W3C)**.

The main difference is that **SOAP is a protocol while REST is not**.

REST:representational state transfer

it's a set of guidelines, it leaves the implementation of these recommendations to developers.

When a request for data is sent to a REST API, it's usually done through the hypertext transfer protocol (HTTP).

Once a request is received, APIs designed for REST (called RESTful APIs or RESTful web services) can return messages in a variety of formats: **HTML, XML, plain text, and JSON**.

JSON (JavaScript object notation) is favoured as a message format because it can be read by any programming language (despite the name), is human- and machine-readable, and is lightweight. In this way, RESTful APIs are more flexible and can be easier to set up.

6 Six Architectural guidelines :

1. A client-server architecture composed of clients, servers, and resources.
2. **Stateless** client-server communication, meaning no client content is stored on the server between requests. Information about the session's state is instead held with the client.
3. Cacheable data to eliminate the need for some client-server interactions.
4. A uniform interface between components so that information is transferred in a standardised form instead of specific to an application's needs.
5. A layered system constraint, where client-server interactions can be mediated by hierarchical layers.
6. Code on demand, allowing servers to extend the functionality of a client by transferring executable code.

SOAP: simple object access protocol

SOAP is a standard protocol that imposes built-in rules that increase its complexity and overhead, which can lead to longer page load times.

SOAP vs. REST

REST is a set of guidelines that offers flexible implementation, whereas SOAP is a protocol with specific requirements like XML messaging.

REST APIs are lightweight, making them ideal for newer contexts like [the Internet of Things \(IoT\)](#), mobile application development, and [serverless computing](#).

SOAP web services offer built-in security and transaction compliance that align with many enterprise needs, but that also makes them heavier. Additionally, many public APIs, like the Google Maps API, follow the REST guidelines.