Automation Testing

SOAP API Testing

A Day in the Life of an Automation Testing Engineer

John has been assigned a task by his manager to perform SOAP API Testing in Postman. He is now exploring the capabilities of Postman to perform SOAP API testing.

After completing this session, John will be able to create SOAP Requests and run SOAP API Testing in Postman.

Learning Objectives

By the end of this lesson, you will be able to:

- Explain SOAP
- State SOAP API and its key components
- List the steps to run SOAP APIs in Postman

Introduction to SOAP

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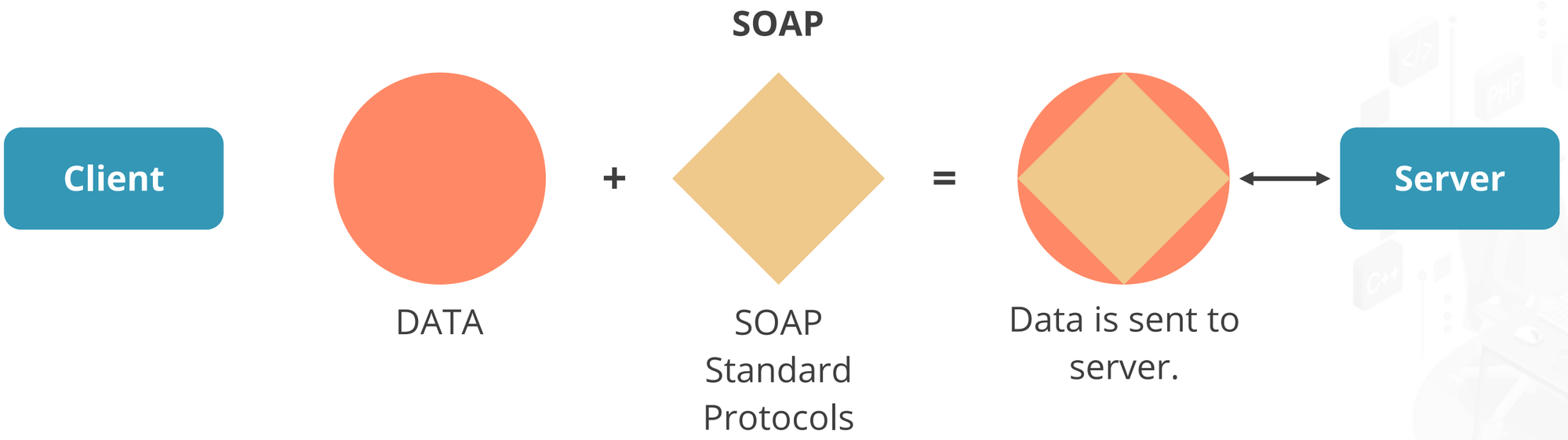
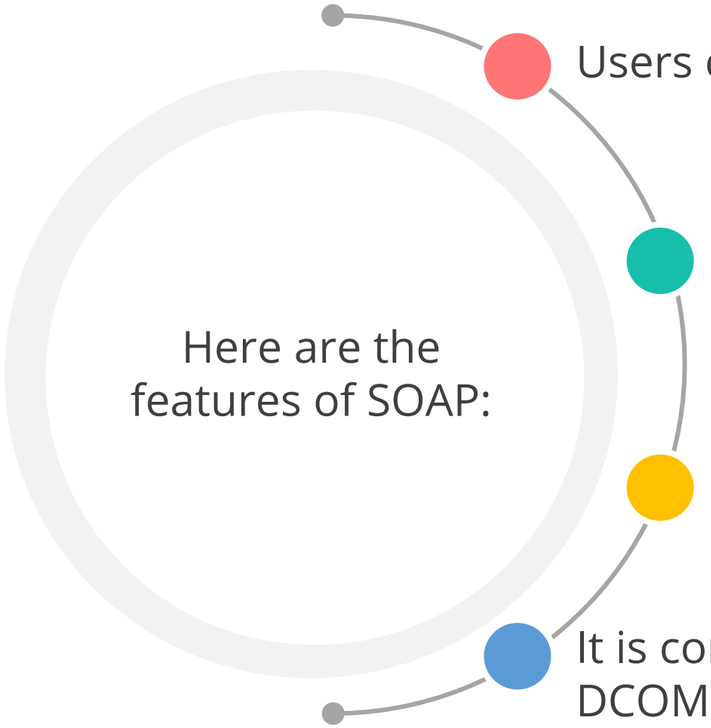
Simple Object Access Protocol (SOAP) is a communication protocol that allows remote applications to communicate with one another.



Users can send SOAP through various standard protocols, including the Hypertext Transfer Protocol (HTTP), which the Internet uses.

Source: https://jelvix.com/wp-content/uploads/2020/09/%D1%81lient-server.jpg

Introduction to SOAP



- Users can broadcast a message using SOAP.
- SOAP extends HTTP for XML Messaging.
- It is language and platform independent.
- It is compatible to other frameworks, such as CORBA, DCOM, and Java RMI.

As SOAP messages get expressed only in XML, they are completely platform driver and language independent.

Introduction to SOAP API

Introduction to SOAP API

SOAP API message has four parts:

- Envelope
- Header
- Body
- Fault

Envelope

An Envelope is an essential component of a SOAP message.

- The SOAP message must include an Envelope.
- A root Envelope element is present in every SOAP message.
- There must be exactly one Body element for every Envelope element.
- Only one Header element may be present in an Envelope. It must be the first child of the Envelope appearing before the Body.
- When SOAP versions change, the Envelope also does.

Header

A Header is a component of a SOAP message. Here are some of its features:

- It is a SOAP message component that is optional.
- It may appear more than once.
- It is designed to include additional functions and features.
- It comprises namespace-defined Header items.
- It is encoded as the element with the first immediate child.
- In case of more than one Header, the SOAP Header's direct child elements are treated as separate SOAP Header blocks.

A Soap Header can have two attributes:

1. mustUnderstand attribute
2. Actor attribute

Body

A SOAP Body contains the application-defined XML data that is being exchanged in the SOAP message. Here are some of its features:

- It must fit inside the Envelope and come after any established Header.
- The semantics for the SOAP Body is specified in the related SOAP Schema.
- It is defined as a child element of the Envelope.
- It contains information for the message's final recipient.

Fault

If a processing problem occurs, a SOAP Fault element is delivered to the SOAP message sender together with the SOAP message as a whole. Here are some of the features of a SOAP Fault:

- A SOAP message can include only one Fault block.
- A SOAP Fault is an optional component of a SOAP message.
- The 200 to 299 range of status codes corresponds to a successful response for HTTP binding.
- The 500 to 599 range of status codes corresponds to a SOAP Fault.

Advantages of SOAP API

Here are some of the advantages of a SOAP API:

The security of SOAP is significantly tighter. WS-Security is a built-in standard that gives SOAP additional enterprise-level security features, if needed, and SSL support.

If offers a reliable communications functionality with successful or retry logic. As REST lacks a standardized messaging mechanism, it can only retry when communication fails.

Even when using SOAP intermediaries, SOAP offers end-to-end reliability because of its built-in successful or retry logic.

How to Run SOAP Requests in Postman?

Run SOAP Requests in Postman

Here are some aspects to keep in mind when running SOAP requests in Postman:

Along with REST, GraphQL, and WebSocket requests, Postman can also make HTTP calls utilizing the platform-neutral messaging protocol specification known as SOAP.

The SOAPUI tool is available to test the SOAP API. However, it is an open-source version that gathers data. As a result, it might not comply with users' company regulations.

The SOAPUI can be a handful for first-time users and has lower stability.

Key Takeaways

- SOAP stands for Simple Object Access Protocol.
- SOAP API allows machines on the Internet to communicate with one other.
- SOAP messages are in XML.
- The message has four parts: Envelope, Header, Body, and Fault.