



# Webservice/API Testing

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# Types of WebService

- SOAP SERVICES
- REST SERVICES ( REST API)

# SOAP SERVICES

- SOAP Stands for SIMPLE OBJECT ACCESS PROTOCOL
- It is use to exchange message between APPLICATIONS/ SYSTEMS
- Internally it use HTTP protocol to transfer XML Messages, SOAP protocol is a wrapper over HTTP protocol
- Support XML for data exchange (Request and Response)
- Heavy Weight / Slow
- Use WSDL (Web service definition language)

# WSDL

- Stands for WEB SERVICE DEFINITION LANGUAGE
- It is written in XML Format
- It is a base file, which is use to describe web service and how to access them
- It also describe different functionalities, how to access them, format, request content etc

# RESTful Services(API)

- Representation State Transfer
- REST is set of guidelines which described how a client should interact with server
- RESTful services use HTTP protocol for data exchange between 2 application / machines
- Here we can use standard operations like GET, POST, PUT, DELETE
- Light Weight, Fast
- Data or functionality that a client can access from server is called resource.
- We can use WADL or URI to access resource
- IT support different types for request and response like XML, JSON, HTML, TXT, PDF

# Difference between SOAP & REST

SOAP	REST
SOAP is a protocol.	REST is an architectural style.
SOAP stands for Simple Object Access Protocol.	REST stands for Representational State Transfer.
SOAP uses services interfaces to expose the business logic.	REST uses URI to expose business logic.

# Difference between SOAP & REST

SOAP defines standards to be strictly followed.	REST does not define too much standards like SOAP.
SOAP requires more bandwidth and resource than REST.	REST requires less bandwidth and resource than SOAP.
SOAP defines its own security.	RESTful web services inherits security measures from the underlying transport.



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SOAP defines its own security.	RESTful web services inherits security measures from the underlying transport.
SOAP permits XML data format only.	REST permits different data format such as Plain text, HTML, XML, JSON etc.



# Advantage of REST over SOAP

- REST support multiple format to exchange data between 2 application or machine
- REST services are faster than SOAP
- Less data transfer between machines
- SOAP is a protocol but REST is set of guidelines which described how a client should interact with server
- SOAP can be access through WSDL only but REST can be access through WADL or URI
- << SOAP Can apply extra security features using SOAP Protocol

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# Microservice Architecture

