

# SOAP vs REST

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| # | SOAP   | REST   |
|---|--|--|
| 1 | A XML-based message protocol   | An architectural style protocol  |
| 2 | Uses WSDL for communication between consumer and provider                | Uses XML or JSON to send and receive data  |
| 3 | Invokes services by calling RPC method                                   | Simply calls services via URL path   |
| 4 | Does not return human readable result                                    | Result is readable which is just plain XML or JSON                                 |
| 5 | Transfer is over HTTP. Also uses other protocols such as SMTP, FTP, etc. | Transfer is over HTTP only   |
| 6 | JavaScript can call SOAP, but it is difficult to implement               | Easy to call from JavaScript   |
| 7 | Performance is not great compared to REST                                | Performance is much better compared to SOAP - less CPU intensive, leaner code etc. |

| No. | SOAP  | REST  |
|-----|---|---|
| 1)  | SOAP is a <b>protocol</b> .   | REST is an <b>architectural style</b> .   |
| 2)  | SOAP stands for <b>Simple Object Access Protocol</b> .              | REST stands for <b>REpresentational State Transfer</b> .  |
| 3)  | SOAP <b>can't use REST</b> because it is a protocol.                | REST <b>can use SOAP</b> web services because it is a concept and can use any protocol like HTTP, SOAP. |
| 4)  | SOAP <b>uses services interfaces to expose the business logic</b> . | REST <b>uses URI to expose business logic</b> .   |
| 5)  | <b>JAX-WS</b> is the java API for SOAP web services.                | <b>JAX-RS</b> is the java API for RESTful web services.   |
| 6)  | SOAP <b>defines standards</b> to be strictly followed.              | REST does not define too much standards like SOAP.  |
| 7)  | SOAP <b>requires more bandwidth</b> and resource than REST.         | REST <b>requires less bandwidth</b> and resource than SOAP.   |
| 8)  | SOAP <b>defines its own security</b> .                              | RESTful web services <b>inherits security measures</b> from the underlying transport.                   |
| 9)  | SOAP <b>permits XML</b> data format only.                           | REST <b>permits different</b> data format such as Plain text, HTML, XML, JSON etc.                      |
| 10) | SOAP is <b>less preferred</b> than REST.                            | REST <b>more preferred</b> than SOAP.   |

From <<https://www.javatpoint.com/soap-vs-rest-web-services>>