* **Difference Between API and Web Service?**
* Web service helps in interacting between two machines over a network.

An API acts as an interface so that they can communicate with each other between two different applications.

* An API is a method by which the third-party vendors can write programs that combines easily with other programs.

A Web[service is designed](http://www.differencebetween.net/business/difference-between-product-and-service/) with a specific format usually in Web Service Description Language (WSDL). HTTP is the most commonly used protocol for communication.

* Web service uses SOAP, [REST](http://www.differencebetween.net/technology/internet/difference-between-rest-and-soap/), and XML-RPC as a means of communication.

API can use any means of communication to interact between applications.

* An API calls the methods from one [software](http://www.differencebetween.net/category/technology/software-technology/) program to interact with the other.

When this is sending [data](http://www.differencebetween.net/technology/difference-between-data-warehousing-and-data-marts/) over a network, Web services come into the picture.

* **Difference between RESTful Webservices and SOAP Webservices?**

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| --- | --- |
| **REST** | **SOAP** |
| 1. XML based message protocol. | 1. An architectural style protocols. |
| 1. Uses WSDL for communication between consumer and producer. | 1. Uses XML or JSON to send and receive data. |
| 1. Invokes services by calling RPC method. | 3**.** Simply calls services via URI path. |
| 1. Not human readable format. | 4. Result is readable is in the form of XML or JSON. |
| 1. Transfer is over HTTP. Also uses other protocols such as SMTP, FTP etc. | 5. Transfer is over HTTP only. |
| 1. JavaScript can call SOAP, but it is difficult to implement. | 6. Easy to call from JavaScript. |

* **Difference between Hud/Spoke and ESB?**
* ESB initiates communication between different services using a bus where clients can easily plug in and out.

Hub and Spoke uses custom connectors and data transformations for each client.

* In Hub and Spoke all the integration applications are connected through a central server. Any new system is to be connected it integrates with the hub. If one gets affected all of them will be disturbed.

ESB acts as a bus for messages to reach their destinations. It has better performance. There is no single point of failure as the client and server are decoupled from each other.

* **Difference between Micro Services and SOA?**

|  |  |
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| **SERVICE-ORIENTED ARCHITECTURE** | **MICROSERVICES ARCHITECTURE** |
| 1. Maximizes application service reusability. | 1. Focused on decoupling. |
| 1. DevOps and Continuous Delivery are becoming popular but are not mainstream. | 1. Strong focus on DevOps and Continuous Delivery. |
| 1. For communication it uses Enterprise Service Bus. | 1. For communication it uses simple messaging systems. |
| 1. Uses a common platform for all services deployed to it. | 1. It commonly to uses cloud platforms. |
| 1. Supports multiple message protocols. | 1. Uses lightweight protocols such as HTTP, FTP. |
| 1. Use of containers is less popular. | 1. Containers work very well with microservices. |
| 1. SOA services share the data storage. | 1. Each microservice can have an independent data storage. |

* **Persistent and Non-Persistent?**
* By using persistent delivery, messages are persisted to disk/database so that they will survive a broker restart.

When using non-persistent delivery, if the broker is killed then all the in-transit messages are lost.

Ex: Active MQ supports both persistent and non-persistent delivery. For JMS specification, the default delivery mode is persistent.

* **One-way SSL and Two-way SSL?**
* In One-way SSL authentication only, client verifies the server. This is done to make sure it is the expected server and no third party is in the middle.

In Two-way SSL authentication, server verifies the certificate of the client. This is done to authenticate the client against the server using a certificate.