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| **Sr. No** | **Features** | **ASP.net Web Service** | **WCF Service** |
| 1 | File Format/Extension | ASP.net web services uses**.asmx** as a file extension. | WCF web service uses **.svc** as a file extension. |
| 2 | Hosting | ASP.net Web service can be hosted in [IIS](http://www.csharptutorial.in/?p=38). As well as ASP.net WebService can be hosted outside of IIS like ASP.net web service can be hosted in a Windows Service. | WCF service is flexible because it can be hosted in [IIS](http://www.csharptutorial.in/?p=32), Windows Activation Services(WAS), Managed [Windows Services](http://www.csharptutorial.in/?p=31) and It also supports [Self-Hosting](http://www.csharptutorial.in/?p=29). |
| 3 | Transport Protocols/Binding | ASP.net Web service supports HTTP & TCP protocols along with custom binding. | WCF service supports HTTP, WS-HTTP, TCP, Custom, Named Pipes, MSMQ & P2P(Point to Point) etc. |
| 4 | Data Transformation | It uses XML serializer for Data Transformation. | WCF service uses**DataContractSerializer** for Data Transformation. |
| 5 | Serialization NameSpace | System.XML.Serialization | System.RunTime.Serialization |
| 6 | Supported Operations | The supported operations are only One-Way and Request-Response type. | The supported operations includes One-Way, Request-Response and Duplex. |
| 7 | Encoding | It uses following encoding mechanisms – XML1.0, MTOM (Message Transmission Optimization Mechanism), [DIME](http://en.wikipedia.org/wiki/Direct_Internet_Message_Encapsulation) (Direct Internet Message Encapsulation) | It uses following encoding mechanisms – XML1.0, MTOM, Binary |
| 8 | WebMethods and DataContract | Uses **WebMethods** to translate .Net FW types in to XML.   * **[WebService]** attribute has to be added to into the class. * **[WebMethod]** attribute represents the method exposed to the client. | Uses **DataContractAttributes**and **DataMemberAttribute** to translate .Net FW types in to XML.   * **[ServiceContract]** attribute has to be added to into the class. * **[OperationContract]**attribute represents the method exposed to the client. |
| 9 | Messaging | Asp.Net web service supports only **SOAP**(Simple Object Access Protocol) as messaging service. | WCF service can send/receive message through any transport protocol message format. However, by default it uses SOAP for communication. |
| 10 | Security | This is not much secured as compared to WCF. It is less secured to protect data between Server and Client. Certificates can protect the data but it is very complicated to use Certificates. For security, normally we use UserName/Password. | As compared to ASP.net web service, WCF services are more secured. WCF does not need IIS to run, it can run as a System Service on the Server, using a command ambient. We can say that WCF is a service and not a Web Service. |
| 11 | Performance | Performance wise web services are slower than WCF service. | WCF services are than WebService. The performance measures in terms of xml serialization. |
| 12 | Exception Handling | This returns all unhandled exceptions to the client as SOAP faults. | WCF does not returns unhandled Exceptions to the client as SOAP faults. A configuration setting is provided to have the unhandled exceptions returned to the Client for the purpose of debugging. |
| 13 | Limitations | * Hash Table cannot be serialized. * Only public properties/fields can be serialized | * The DataContractSerializer translate the Hash table into the XML. * Public/Private properties/fields can be serialized. |