QCF questions and terms

# Terms

## WCF – Windows Communication Foundation

* A framework for building service-oriented applications (SOA).
* Ability to send asynch messages from one service endpoint to another
* A service endpoint can be part of a service hosted in IIS, or a service hosted in an application

# Q&A

## What is *service* *and client* in perspective of data communication?

A service is a unit of functionality (API) exposed to the outside world.

A client is one who consumes that service.

## What is address, and how many types of transport schemas are there ?

Address identifies the location of the service and its transport schemas.

The various transport schemas are:

* TCP (net.tcp://localhost:82/MyService)
* Http (http://localhost:81/MyService)
* Peer Network
* IPC (inter-process communication over names pipes) (net.pipe://localhost/MyPipeService)
* MSMQ (net.msmq://localhost/MyMsMqService)

## What are contracts in WCF ?

A platform-neutral way of describing what the service does.

Four types of contracts

* Service contracts – what operations the client can perform (two types)
  + ServiceContract – the attribute used to define the interface
  + OperationContract – attribute defines the methods inside the interface
* Data contracts – which data types of passed to/from the service (two data contracts)
  + DataContract – defines the class
  + DataMember – defined the properties of the class
* Fault contracts – which errors are raised, and how they propagate to the client
* Message contracts – allows to directly interact with messages, whether types of untyped.

## What is binding and how many types of bindings are there ?

* It defines how the endpoint communicates to the world.
* It defines the transport (http, TCP) and the encoding (text, binary)
* Types of bindings
  + Basic binding – exposed as a legacy ASMX Web Service for older clients
  + TCP binding – uses TCP and requires the client to also use WCF
  + Web Service (WS) – uses http or https transport, and designed for reliability, transactions, and security
  + Duplex WS – supports bidirectional comm between service and client

## What is an endpoint in WCF ?

Is it the relationship between **Address** (location), **Binding** (transport), and **Contract** (functionality).

## How to define a REST service in WCF ?

* WCF 3.5 provides the WebHttpBinding namespace
* The [WebGet] attribute exposes the Http GET method

## What is Proxy and how to generate it for WCF Services ?

* A CLR class which exposes a single CLR interface to the contract
* It provides the same methods as the contract with additional methods for managing the proxy life cycle and connection to the service
* The proxy completely encapsulates every aspect of the service (i.e. location, runtime platform, comm transport)

## What are the main components of WCF ?

* Service class
* Hosting environment
* Endpoint

## What are the ways to host WCF ?

* Self-hosting in its own application domain
* IIS hosted, either within an app domain or a process
* Hosted in app domain by WAS Server (Windows Activation Service)

## What is the difference between Web Services and WCF ?

* Web Svc only invoked by Http (traditional webservice with .asmx)
* WCF Service can be invoked by any protocol (http, tcp, etc.) and transport type

## [What is three major points in WCF?](http://www.dotnetfunda.com/interviews/show/664/what-is-three-major-points-in-wcf" \o "What is three major points in WCF?" \t "_blank)

We Should remember ABC - **Address / Binding / Contract**