

WebService & WCF Syllabus

Web Services

1. What is Distributed Application
2. High Level Architecture on how RMI/CORBA/DCOM works
3. Introduction to WebService & SOAP
4. To build an WebService application and client
5. Pass by value and reference behavior
6. Working with SoapHeader Attribute
7. Asynchronous Call to the WebMethod
8. Security in WebService

Introduction to WCF

1. Evolution of WCF
2. Evolution of Service Oriented Architecture (SOA)
3. Four Tenets of SOA
4. What is WCF
5. Where does WCF Services fit in?

Developing WCF Service Application and Client

1. Hosting WCF Service in IIS/ASP.NET Development Server
2. Using a Service in the client application
3. Understand Contracts in the service.
 - a. ServiceContract.
 - b. OperationContract.
 - c. DataContract.
4. Understand Instancing behavior in the service.
 - a. Single
 - b. PerCall
 - c. PerSession
5. Building WCF Library based Host and Client application.

Endpoints in configuration file

1. End points in Configuration File.
2. ABC - Address, Binding & Contract of the service in Configuration File.
3. Understanding importance of base address.
4. Importance of IMetadataExchange Contract / Endpoint.
5. Configuring service behavior in configuration file
6. WCF Service Configuration Editor
7. Creating Endpoints through Code

Channel Stacks & Bindings in WCF

1. Understanding Channel Stack
2. Introduction to Binding
3. Types of Bindings.
4. Binding Comparison
5. Thumb rules in choosing endpoint binding
6. Configuring a Service and Client for Multiple Bindings
7. Binding Class Properties.

Understanding Service and Data Contracts

1. About Service Contract
2. Data Contract & Data Member
3. Versioning using Interface IExtensibleDataObject
4. Version Tolerance
5. Implications of Modifying Service Operations
6. Implications of Modifying Data Contracts
7. Working with Known Types

Handling WCF Exceptions/Faults

1. Overview
2. Producing Faults
 - SOAP fault with FaultCode and FaultReason
 - Culture specific SOAP fault
 - Strongly Typed SOAP fault
3. Consuming Faults
4. Proxy State for Managed Exceptions Vs SOAP Fault

Message Exchange Patterns

1. Request – Reply Pattern
2. One way Operations
3. Duplex Pattern
4. Duplex Publisher Subscriber Example

Transactions

1. What is Transaction and ACID
2. How to enable Transaction in WCF Service
3. TransactionScope in to begin a transaction.
4. Transaction Isolation
5. Transactions and Sessions

MSMQ

1. Introduction
2. Advantages of using MSMQ
3. Transactional Queues
4. Steps to follow to Build a MSMQ application

WCF Security

1. Concepts.
2. Security Mechanisms.
3. Default Security Settings.
4. Demonstrate how Messages are encrypted.
5. Authentication
 - a. Windows Authentication
 - b. HTTPS / SSL Authentication.
 - c. ASP.NET Membership Authentication
 - d. Custom Authentication
6. Authorization
 - a. Windows Group/Role based Authorization
 - b. Custom Role based Authorization
 - c. ASP.NET Role Provider