

Workshop	
Name	WCF 4.0
Duration	5 days
Objective	Understanding the WCF Features introduced in the .NET Framework 4.0
Participants' Entry Profile	Participants attending this course must have worked on: WCF 3.0 - .NET 3.5 Basic Knowledge of XML
Training Methodology	The workshop will follow Synergetic methodology of Concept Visualization Active Experimentation Application Development. The workshop will be 100% Hands-On with each participant having access to system during the session

Setup Requirements	
Hardware and Software Requirements	Participant's as well as Trainer's Machine are required to have : Hardware Pentium 4 2.0 GHz 2 GB RAM LAN Connectivity 200MB HDD (Free Space) Software Windows 7 & Windows 8 Microsoft SQL Server 2008 R2 Microsoft Visual Studio 2010
Training Lab Requirements	Whiteboard 6 feet by 4 feet (minimum) Whiteboard markers – Red, Blue, Green, Black Video Projector (1024 X 768 resolutions)

Course Contents

Day 1

- **Introducing Distributed System**
 - Microsoft connected systems
 - The move towards services
 - Service design philosophies
 - SOAP-based services
 - RESTful services
 - Service-orientation and SOA
 - Communication framework

- **Elements of WCF Communication**
 - Introduction to WCF
 - Benefits of WCF
 - ABC of WCF

- Address
- Binding
- Contract

- **Overview of Bindings**
 - BasicHttpBinding
 - WsHttpBinding
 - NetTcpBinding
 - DualHttpBinding

- **Overview of Contract Types**
 - Service Contracts
 - Data Contracts
 - Fault Contracts
 - Message Contracts
 - Duplex Contracts

- **Creating and Invoking a WCF Service**
 - Retrieving endpoint definitions
 - Using SvcUtil.exe
 - Using Service References
 - Programming channels
 - Specifying client endpoints
 - Channel lifecycle
 - Using the proxy class
 - Configuring client channels
 - Exceptions and faults
 - Invoking services asynchronously

Day 2

- **Runtime Execution**
 - WCF runtime behaviors
 - Instancing
 - InstanceContextMode.PerCall
 - InstanceContextMode.Single
 - InstanceContextMode.PerSession
 - Sessionful bindings
 - Managing session lifetime
 - Durable services

- **WCF Threading**
 - ConcurrencyMode.Single
 - ConcurrencyMode.Reentrant
 - ConcurrencyMode.Multiple
 - UseSynchronizationContext

- **WCF Transactions**
 - Transaction Flow
 - Local and Distributed
 - Client-Service Transaction Propagation

- WCF Bindings and Transaction Protocols

Day 3

➤ **WCF Security**

- Securing Intranet Services
- Securing Internet Services
- Working with Certificate
- Building a Claims-Based Security Model
- Exploring Federated Security

➤ **Exception and Faults**

- SOAP Fault
- WCF Exception handling
- Exception and Debugging
- Fault contract
- IErrorHandler

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Day 4

➤ **WCF 4.0 New Features**

- Simplified Configuration
- RESTful WCF Services
- Dynamic Service and Endpoint discovery
- Routing Service

➤ **Simplified Configuration**

- Default End Points
- Protocol Mapping
- Default Binding Configuration
- Default Service Behavior Configuration
- New Standard Endpoints
- Svc-less Services

➤ **RESTful WCF Services**

- Introduction to REST
- Creating RESTful WCF Services

- WebGet and WebInvoke attributes
- Configuring the webHttpBinding and webHttp Behavior
- Hosting using the WebServiceHost
- Creating client for RESTful WCF Service
- Automatic Help Page
- Http Caching support

Day 5

- **Dynamic Service and Endpoint Discovery**
 - DiscoveryEndpoints for Ad-hoc service discovery
 - DiscoveryClient to find services
 - Scopes in DiscoveryEndpoints
 - Service Announcements in Service behaviors
 - Listening for announcements using AnnouncementService
- **Routing Service**
 - Need for RoutingService
 - RoutingService contracts
 - Hosting RoutingService
 - Configuring Message Filters
 - Content based routing
 - Protocol Bridging