



Windows Communication Foundation (WCF)

Course Description:

WCF Essentials, Part 1

Problem background. Need for and benefits of web services. Architectural layout of WCF. Use of interception regardless of hosting model. Concept of a Service Contract and an Operation Contract. Supported bindings. Concept of an Endpoint: combination of address, contract, and binding. Configuration of endpoints, administrative and programmatic.

WCF Essentials, Part 2

Choices in hosting, IIS, NT Service, self-hosting application, and WAS. Advantages and disadvantages of each. Implementation of simplest WCF application. Exposing service metadata, generating client-side proxy. Examination of client-side proxy, its capabilities and limitations. Examination of Data Contracts.

Instance Management

Use of per-call, session-full, and singleton object models. Advantages and disadvantages of each. Configuring instance management attributes. Concepts of session modes and reliability. Demarcating operations within a session, use of Is Initiating and Is Terminating attributes. Deactivating instances.

WCF Operations

Request-reply operations. One-way operations. Callback operations. Use with session-full and reliable operations. Server-side callbacks on bi-directional bindings. Re-entrant operations. Streaming and stream management. Throttling of calls.

Security

Concepts of authentication and authorization. Different types of authentication credentials. Discussion of transfer security, dealing with message integrity and message privacy, mutual authentication. Use of transport security. Identity management – which identity does the service run under? Trusted user versus impersonation. Use of security call context. Discussion of common WCF security scenarios.

Transaction Management

Need for graceful handling of failures. Concept of a transaction. Coordinating a transaction among multiple participants. Using transactions with supported bindings. Transaction flow into and out of a WCF service. Transaction protocols and managers. Transaction voting and completion in a WCF service. Use of transactions with callbacks.

Concurrency Management

Instance management and concurrency. Use of Concurrency Mode attribute. Examination of single, multiple and reentrant concurrency cases. Managing concurrency in reentrant cases. Avoiding deadlocks. Detecting and fixing deadlocks. Dealing with thread affinity in WCF. Use of synchronization in user interface cases. Use of concurrency management in callback cases. Making and handling asynchronous calls, how they differ from one-way calls.

Teacher: David Platt. Details at <http://www.rollthunder.com>.

Time: Mon. 16. – Wed. 18. April at 08:30-16:00 (3x).

Place: Endurmenntun Háskóla Íslands, Dunhagi 7.

Price: 128.500 kr.



**Further information and registration at endurmenntun.is
or by phone: 525-4444**