

Windows Communication Foundation (WCF) Master Class

Duration

5 days

Instructor

Brian Noyes

Class Limit

30 students

Prerequisite

None

Price

On-site

Please contact SPC
for pricing (contact
information on page 2)

Public Training

\$3,250 (5 days)

*Discount available for
early registration

Materials Provided

- Student manual containing the course slides
- Student handouts with class exercises

Windows Communication Foundation (WCF) is Microsoft's implementation of set of industry standards defining service interactions. WCF unifies the previous generations of Microsoft's technologies, offering the interoperability of ASP.NET web services, the extensibility of remoting and the productivity and power of Enterprise Services.

IDesign's WCF Master Class is five days of intense training. It starts by explaining the motivation for service-orientation, then continues to discuss in depth how to develop service-oriented applications using WCF. You will see how to take advantage of built-in features such as service hosting, instance management, asynchronous calls, synchronization, reliability, transaction management, disconnected queued calls and security.

While the training shows how to use these features, it also sets the focus on the 'why' and the rationale behind particular design decisions, often shedding light on poorly-documented and understood aspects.

You will learn not only WCF programming, but also relevant design guidelines, best practices, and pitfalls. The material presented includes IDesign's original techniques and utilities and goes well beyond anything you can find in conventional training sources. The objective of the training is not to just make you a WCF expert, but also a better software engineer.

In addition to front-of-room presentations, the seminar incorporates lab exercises, numerous conceptual demos and original tools and utilities.

Instructor

Brian Noyes is a Chief Architect with IDesign, Microsoft's Regional Director for the Mid-Atlantic Region, and a Microsoft Most Valuable Professional (MVP). He specializes in smart client architecture and development, presentation tier technologies including Windows Presentation Foundation, Windows Forms and ASP.NET, and middle tier technologies including workflow, services and data access. Brian's latest publication is Developing Applications with Windows Workflow Foundation, a LiveLesson training DVD. His two previous books Smart Client Deployment with ClickOnce and Data Binding with Windows Forms 2.0 continue to sell well.

Intended Audience

Any .NET developer or architect would benefit greatly from the WCF training. Basic familiarity with C# 2.0 and system programming is recommended.

TRAINING

The Windows Communication Foundation Master Class

Outline

Introduction to Service-Orientation

- What are services
- Service-oriented architecture
- Service-oriented applications
- Service-oriented programming

WCF Essentials

- Addresses
- Service contracts
- Hosting
- Binding
- Endpoints
- Client-side programming
- WCF architecture
- Transport session
- Reliability

Service Contracts

- Contract overloading
- Contract inheritance
- Contract queries and dynamic metadata exchange

Data Contracts

- Service parameters and serialization
- Data contracts
- Data sets & tables conversion
- Data contract hierarchy
- Generic type parameters
- Collections

Outline Cont'd

Headers and Contexts

- Out-of-band parameters
- Developing custom contexts
- Context bindings

Service Instance Management

- Design for scalability
- Per-call services
- Service behaviors
- Session-full services
- Session termination
- Singleton service
- Demarcating operations
- Durable Services
- Throttling

Operations

- Operations and bindings
- Request-reply operations
- One-way operations
- Duplex calls and callbacks
- Events
- Publish/Subscribe service
- Streaming

Faults and Errors

- Fault propagation policies
- Faults Vs. exceptions
- Fault contracts
- Debugging
- Callback faults
- Error handling extension

Outline Cont'd

Transactions

- Transaction management & propagation
- Transaction objects
- Service transaction configuration
- Declarative and explicit voting
- Timeout and isolation
- Explicit transactional programming

Concurrency Management

- Service thread safety
- Concurrency modes
- Callback and reentrancy
- Deadlock avoidance
- One-way calls and concurrency
- UI thread affinity
- Custom synchronization context
- Callbacks and client safety
- Proxy-based async calls
- Async. vs synch calls

Queued Services

- Disconnected services & clients
- Queued contract
- Configuration and setup
- Transactions and queues
- Instance modes & queued calls
- Concurrency management
- Failure handling
- Design and architecture
- Response service
- Queued pub/sub service
- Queued calls over the Internet

Security

- Security aspects
- Transfer security modes
- Transport security
- Message security
- Authentication
- Authorization
- WCF security model
- Identity management
- Securing Intranet applications
- Securing Internet applications
- Business to Business security
- Anonymous callers
- IDesign's declarative security
- Security audits



TRAINING

For more information on this or other SPC Springboard courses, please visit www.spcspringboard.com or e-mail SPC at info@spc.ca

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