

WINDOWS COMMUNICATION FOUNDATION WEB SERVICES

WINDOWS COMMUNICATION FOUNDATION WEB SERVICES REPRESENT A CRITICAL TECHNOLOGY IN THE MICROSOFT ECOSYSTEM FOR BUILDING AND DEPLOYING SECURE, RELIABLE, AND INTEROPERABLE WEB SERVICES. AS AN INTEGRAL PART OF THE .NET FRAMEWORK, WINDOWS COMMUNICATION FOUNDATION (WCF) SIMPLIFIES THE DEVELOPMENT OF SERVICE-ORIENTED APPLICATIONS BY PROVIDING A UNIFIED PROGRAMMING MODEL FOR DISTRIBUTED SYSTEMS. THIS ARTICLE EXPLORES THE ARCHITECTURE, FEATURES, AND PRACTICAL APPLICATIONS OF WCF WEB SERVICES, HIGHLIGHTING HOW THEY FACILITATE COMMUNICATION ACROSS DIVERSE PLATFORMS AND PROTOCOLS. IT ALSO DELVES INTO KEY CONCEPTS SUCH AS BINDINGS, CONTRACTS, AND ENDPOINTS THAT DEFINE THE FUNCTIONALITY AND INTERACTION PATTERNS WITHIN WCF SERVICES. ADDITIONALLY, THIS COMPREHENSIVE GUIDE ADDRESSES SECURITY, PERFORMANCE OPTIMIZATION, AND DEPLOYMENT STRATEGIES, OFFERING INSIGHTS VALUABLE TO DEVELOPERS AND IT PROFESSIONALS AIMING TO LEVERAGE WCF FOR ROBUST WEB SERVICE SOLUTIONS. THE FOLLOWING SECTIONS PROVIDE A DETAILED OVERVIEW OF WINDOWS COMMUNICATION FOUNDATION WEB SERVICES, STARTING WITH THEIR FUNDAMENTAL ARCHITECTURE AND MOVING THROUGH ADVANCED IMPLEMENTATION CONSIDERATIONS.

- UNDERSTANDING WINDOWS COMMUNICATION FOUNDATION ARCHITECTURE
- KEY COMPONENTS OF WCF WEB SERVICES
- DEVELOPING WCF WEB SERVICES
- SECURITY IN WINDOWS COMMUNICATION FOUNDATION
- PERFORMANCE AND SCALABILITY CONSIDERATIONS
- DEPLOYMENT AND HOSTING OPTIONS

UNDERSTANDING WINDOWS COMMUNICATION FOUNDATION ARCHITECTURE

THE ARCHITECTURE OF WINDOWS COMMUNICATION FOUNDATION WEB SERVICES IS DESIGNED TO SUPPORT A WIDE RANGE OF COMMUNICATION SCENARIOS BY ABSTRACTING THE UNDERLYING TRANSPORT PROTOCOLS AND MESSAGE FORMATS. WCF PROVIDES A SERVICE-ORIENTED ARCHITECTURE (SOA) MODEL WHERE SERVICES EXPOSE ENDPOINTS THAT CLIENTS USE TO INTERACT WITH THEM. THIS ARCHITECTURE ENABLES DEVELOPERS TO FOCUS ON BUSINESS LOGIC WHILE WCF HANDLES COMMUNICATION DETAILS.

SERVICE-ORIENTED ARCHITECTURE MODEL

WCF IS BUILT ON THE PRINCIPLES OF SOA, ALLOWING SERVICES TO BE LOOSELY COUPLED, DISCOVERABLE, AND INTEROPERABLE. EACH WCF SERVICE DEFINES CONTRACTS THAT SPECIFY THE OPERATIONS AVAILABLE TO CLIENTS, WHICH PROMOTES MODULARITY AND REUSABILITY. BY EMBRACING SOA, WCF FACILITATES INTEGRATION ACROSS HETEROGENEOUS SYSTEMS AND PLATFORMS.

ENDPOINTS AND MESSAGING

ENDPOINTS ARE FUNDAMENTAL TO WCF WEB SERVICES, COMPOSED OF AN ADDRESS, A BINDING, AND A CONTRACT (ABC). THE ADDRESS INDICATES WHERE THE SERVICE CAN BE ACCESSED, THE BINDING DETERMINES HOW TO COMMUNICATE WITH THE SERVICE, AND THE CONTRACT DEFINES WHAT OPERATIONS ARE AVAILABLE. WCF SUPPORTS VARIOUS MESSAGING PATTERNS, INCLUDING REQUEST-REPLY, ONE-WAY, AND DUPLEX COMMUNICATION, ACCOMMODATING DIVERSE APPLICATION NEEDS.

KEY COMPONENTS OF WCF WEB SERVICES

THE FUNCTIONALITY OF WINDOWS COMMUNICATION FOUNDATION WEB SERVICES IS STRUCTURED AROUND SEVERAL KEY COMPONENTS THAT WORK TOGETHER TO PROVIDE A COMPREHENSIVE COMMUNICATION FRAMEWORK. UNDERSTANDING THESE COMPONENTS IS ESSENTIAL FOR DESIGNING EFFECTIVE WCF SERVICES.

CONTRACTS

CONTRACTS DEFINE THE INTERFACE AND BEHAVIOR OF WCF SERVICES. THERE ARE THREE PRIMARY CONTRACT TYPES:

- **SERVICE CONTRACTS:** SPECIFY THE OPERATIONS THAT A SERVICE EXPOSES TO CLIENTS.
- **DATA CONTRACTS:** DEFINE THE DATA TYPES THAT ARE EXCHANGED BETWEEN CLIENT AND SERVICE IN A SERIALIZED FORM.
- **MESSAGE CONTRACTS:** CONTROL THE STRUCTURE OF THE SOAP MESSAGE ITSELF FOR ADVANCED SCENARIOS.

BINDINGS

BINDINGS SPECIFY THE COMMUNICATION PROTOCOLS, TRANSPORT MECHANISMS, AND ENCODING FORMATS USED BY WCF SERVICES. COMMON BINDING TYPES INCLUDE:

- **BASICHTTPBINDING:** PROVIDES SOAP 1.1 MESSAGING OVER HTTP, SUITABLE FOR INTEROPERABILITY.
- **WSHTTPBINDING:** SUPPORTS SOAP 1.2 WITH WS-* SPECIFICATIONS FOR SECURITY AND RELIABILITY.
- **NETTCPBINDING:** ENABLES HIGH-PERFORMANCE COMMUNICATION OVER TCP FOR INTRANET SCENARIOS.
- **NETNAMEDPIPEBINDING:** FACILITATES COMMUNICATION BETWEEN PROCESSES ON THE SAME MACHINE.

BEHAVIORS

BEHAVIORS CUSTOMIZE OR EXTEND THE RUNTIME BEHAVIOR OF SERVICES AND CLIENTS. THEY CONTROL ASPECTS SUCH AS INSTANCE MANAGEMENT, ERROR HANDLING, METADATA PUBLICATION, AND SECURITY ENFORCEMENT, MAKING WCF HIGHLY CONFIGURABLE TO MEET SPECIFIC APPLICATION REQUIREMENTS.

DEVELOPING WCF WEB SERVICES

CREATING WINDOWS COMMUNICATION FOUNDATION WEB SERVICES INVOLVES DEFINING SERVICE CONTRACTS, IMPLEMENTING SERVICE LOGIC, CONFIGURING ENDPOINTS, AND MANAGING COMMUNICATION SETTINGS. WCF DEVELOPMENT INTEGRATES SEAMLESSLY WITH THE .NET FRAMEWORK, OFFERING TOOLS AND TEMPLATES TO ACCELERATE THE PROCESS.

DEFINING SERVICE CONTRACTS AND DATA CONTRACTS

SERVICE CONTRACTS ARE DEFINED USING INTERFACES DECORATED WITH ATTRIBUTES THAT SPECIFY OPERATION CONTRACTS. DATA CONTRACTS ARE CLASSES OR STRUCTURES MARKED WITH ATTRIBUTES INDICATING WHICH MEMBERS SHOULD BE SERIALIZED. THIS EXPLICIT DECLARATION ENSURES CLEAR COMMUNICATION BETWEEN CLIENTS AND SERVICES.

SERVICE IMPLEMENTATION

THE SERVICE CLASS IMPLEMENTS THE SERVICE CONTRACT INTERFACE, PROVIDING THE ACTUAL BUSINESS LOGIC. THIS SEPARATION OF CONTRACT AND IMPLEMENTATION PROMOTES CLEAN ARCHITECTURE AND EASIER MAINTENANCE.

CONFIGURATION AND HOSTING

WCF SERVICES CAN BE CONFIGURED USING XML-BASED CONFIGURATION FILES OR PROGRAMMATICALLY. CONFIGURATION INCLUDES DEFINING ENDPOINTS, BINDINGS, BEHAVIORS, AND SECURITY SETTINGS. HOSTING OPTIONS ARE FLEXIBLE, INCLUDING HOSTING WITHIN INTERNET INFORMATION SERVICES (IIS), WINDOWS PROCESS ACTIVATION SERVICE (WAS), OR SELF-HOSTING WITHIN CUSTOM APPLICATIONS.

SECURITY IN WINDOWS COMMUNICATION FOUNDATION

SECURITY IS A PARAMOUNT CONCERN IN WINDOWS COMMUNICATION FOUNDATION WEB SERVICES, AND WCF PROVIDES EXTENSIVE FEATURES TO SECURE MESSAGES, AUTHENTICATE USERS, AND AUTHORIZE ACCESS. SECURITY MECHANISMS ARE INTEGRATED INTO BINDINGS AND BEHAVIORS TO ENSURE SECURE COMMUNICATION.

AUTHENTICATION AND AUTHORIZATION

WCF SUPPORTS VARIOUS AUTHENTICATION METHODS, INCLUDING WINDOWS AUTHENTICATION, USERNAME/PASSWORD CREDENTIALS, AND CERTIFICATE-BASED AUTHENTICATION. AUTHORIZATION IS ENFORCED THROUGH ROLE-BASED SECURITY OR CUSTOM AUTHORIZATION POLICIES THAT VERIFY CLIENT PERMISSIONS.

MESSAGE SECURITY AND TRANSPORT SECURITY

MESSAGE SECURITY PROTECTS THE DATA WITHIN MESSAGES REGARDLESS OF THE TRANSPORT, USING ENCRYPTION AND DIGITAL SIGNATURES. TRANSPORT SECURITY PROVIDES PROTECTION AT THE TRANSPORT LAYER, SUCH AS SSL/TLS FOR HTTP OR SECURE TCP CONNECTIONS. WCF ALLOWS COMBINING THESE APPROACHES TO MEET SPECIFIC SECURITY REQUIREMENTS.

SECURITY BEST PRACTICES

IMPLEMENTING SECURITY IN WCF WEB SERVICES REQUIRES CAREFUL PLANNING. BEST PRACTICES INCLUDE:

- USING SECURE BINDINGS AND ENCRYPTION.
- VALIDATING ALL INPUTS TO PREVENT INJECTION ATTACKS.
- APPLYING LEAST PRIVILEGE PRINCIPLES.
- REGULARLY UPDATING AND PATCHING SERVICE COMPONENTS.

PERFORMANCE AND SCALABILITY CONSIDERATIONS

OPTIMIZING WINDOWS COMMUNICATION FOUNDATION WEB SERVICES FOR PERFORMANCE AND SCALABILITY IS CRITICAL FOR MEETING ENTERPRISE DEMANDS. WCF OFFERS VARIOUS FEATURES AND TECHNIQUES TO ENHANCE THROUGHPUT AND RESPONSIVENESS WHILE MAINTAINING RELIABILITY.

INSTANCE MANAGEMENT MODES

WCF SUPPORTS DIFFERENT INSTANCE MODES THAT CONTROL SERVICE OBJECT LIFETIME:

- **PER-CALL:** A NEW SERVICE INSTANCE IS CREATED FOR EACH CLIENT REQUEST, IDEAL FOR STATELESS SERVICES.
- **PER-SESSION:** SERVICE INSTANCES ARE MAINTAINED FOR THE DURATION OF A CLIENT SESSION.
- **SINGLETON:** A SINGLE SERVICE INSTANCE HANDLES ALL CLIENT REQUESTS, USEFUL FOR SHARED RESOURCES BUT REQUIRES THREAD SAFETY.

CONCURRENCY AND THROTTLING

CONCURRENCY MANAGEMENT DETERMINES HOW MANY THREADS CAN ACCESS SERVICE INSTANCES SIMULTANEOUSLY. THROTTLING SETTINGS LIMIT THE NUMBER OF CONCURRENT CALLS, SESSIONS, AND INSTANCES TO PREVENT RESOURCE EXHAUSTION AND ENSURE CONSISTENT PERFORMANCE.

MESSAGE SIZE AND SERIALIZATION

REDUCING MESSAGE SIZE AND OPTIMIZING SERIALIZATION IMPROVE COMMUNICATION EFFICIENCY. TECHNIQUES INCLUDE COMPRESSING MESSAGES, MINIMIZING DATA CONTRACTS, AND CHOOSING EFFICIENT ENCODING FORMATS SUCH AS BINARY ENCODING WHEN APPROPRIATE.

DEPLOYMENT AND HOSTING OPTIONS

WINDOWS COMMUNICATION FOUNDATION WEB SERVICES CAN BE DEPLOYED AND HOSTED IN VARIOUS ENVIRONMENTS DEPENDING ON APPLICATION REQUIREMENTS AND INFRASTRUCTURE. EACH HOSTING METHOD OFFERS DISTINCT ADVANTAGES AND TRADE-OFFS.

INTERNET INFORMATION SERVICES (IIS) HOSTING

HOSTING WCF SERVICES IN IIS LEVERAGES THE FEATURES OF A MATURE WEB SERVER, INCLUDING PROCESS RECYCLING, HEALTH MONITORING, AND INTEGRATED SECURITY. IIS IS SUITABLE FOR HTTP-BASED SERVICES AND SUPPORTS AUTOMATIC ACTIVATION AND SCALABILITY.

WINDOWS PROCESS ACTIVATION SERVICE (WAS)

WAS EXTENDS IIS HOSTING TO SUPPORT NON-HTTP PROTOCOLS LIKE TCP AND MSMQ, ENABLING WCF SERVICES TO USE DIVERSE COMMUNICATION CHANNELS WHILE BENEFITING FROM IIS MANAGEMENT FEATURES.

SELF-HOSTING

SELF-HOSTING ALLOWS SERVICES TO RUN WITHIN CUSTOM APPLICATIONS OR WINDOWS SERVICES. THIS PROVIDES MAXIMUM FLEXIBILITY AND CONTROL OVER THE HOSTING ENVIRONMENT BUT REQUIRES MANUAL MANAGEMENT OF SERVICE LIFECYCLE AND RESOURCES.

Cloud and Container Deployment

Modern deployment scenarios include hosting WCF services in cloud platforms or containers. These approaches offer scalability, elastic resource allocation, and simplified management, making them attractive for enterprise-grade applications.

Frequently Asked Questions

What is Windows Communication Foundation (WCF)?

Windows Communication Foundation (WCF) is a Microsoft framework for building service-oriented applications. It enables developers to create secure, reliable, and transacted web services that can be integrated across platforms.

How do WCF web services differ from traditional ASMX web services?

WCF web services offer greater flexibility, supporting multiple protocols (HTTP, TCP, MSMQ), various message encoding options, and advanced security features, while ASMX services are limited to SOAP over HTTP.

What are the main components of a WCF web service?

The main components of a WCF web service include the Service Contract (defines the operations), Data Contract (defines the data types), Endpoints (address, binding, and contract), and the Hosting Environment.

How do you host a WCF service?

A WCF service can be hosted in various environments such as IIS, WAS, a Windows service, or a console application, depending on the deployment needs and scalability requirements.

What bindings are commonly used in WCF web services?

Commonly used WCF bindings include BasicHttpBinding (compatible with ASMX), WsHttpBinding (supports WS-* standards), NetTcpBinding (for high performance on intranet), and NetNamedPipeBinding (for on-machine communication).

How does WCF handle security in web services?

WCF provides multiple security options including transport security (SSL), message security (encryption and signatures), authentication (username, certificates, Windows), and authorization through roles or claims.

Can WCF services be consumed by non-.NET clients?

Yes, WCF services using BasicHttpBinding or WsHttpBinding can be consumed by non-.NET clients because they are based on standard SOAP protocols compatible with various platforms.

What is the role of data contracts in WCF web services?

Data contracts define the data structures that are serialized and exchanged between the client and service in WCF, ensuring that both sides agree on the data schema.

How do you enable metadata exchange in a WCF service?

METADATA EXCHANGE CAN BE ENABLED IN A WCF SERVICE BY ADDING A `ServiceMetadataBehavior` TO THE SERVICE AND CONFIGURING AN ENDPOINT WITH THE `MexHttpBinding` OR `MexTcpBinding` TO EXPOSE METADATA FOR CLIENTS.

What are some best practices for developing WCF web services?

BEST PRACTICES INCLUDE DEFINING CLEAR SERVICE CONTRACTS, CHOOSING APPROPRIATE BINDINGS FOR PERFORMANCE AND COMPATIBILITY, SECURING SERVICES PROPERLY, ENABLING METADATA FOR CLIENT GENERATION, HANDLING EXCEPTIONS GRACEFULLY, AND OPTIMIZING HOSTING ENVIRONMENTS.

Additional Resources

1. *Programming WCF Services*

THIS COMPREHENSIVE GUIDE COVERS THE FUNDAMENTALS AND ADVANCED TOPICS OF WINDOWS COMMUNICATION FOUNDATION (WCF). IT DELVES INTO CREATING SECURE, RELIABLE, AND TRANSACTED SERVICES AND EXPLORES INTEROPERABILITY WITH OTHER PLATFORMS. DEVELOPERS WILL FIND DETAILED EXAMPLES AND BEST PRACTICES FOR BUILDING ROBUST WCF APPLICATIONS.

2. *Learning WCF: A Hands-on Guide*

A PRACTICAL INTRODUCTION TO WCF FOR BEGINNERS AND INTERMEDIATE DEVELOPERS ALIKE, THIS BOOK WALKS READERS THROUGH BUILDING AND CONSUMING WCF SERVICES. IT EMPHASIZES REAL-WORLD SCENARIOS AND INCLUDES EXERCISES THAT REINFORCE KEY CONCEPTS SUCH AS SERVICE CONTRACTS, BINDINGS, AND BEHAVIORS.

3. *Pro WCF: Practical Microsoft SOA Implementation*

THIS BOOK TARGETS EXPERIENCED DEVELOPERS LOOKING TO IMPLEMENT SERVICE-ORIENTED ARCHITECTURE USING WCF. IT COVERS ADVANCED TOPICS SUCH AS CUSTOM BEHAVIORS, MESSAGE SECURITY, AND WORKFLOW INTEGRATION, PROVIDING CODE SAMPLES AND ARCHITECTURAL GUIDANCE TO CREATE SCALABLE AND MAINTAINABLE SERVICES.

4. *WCF Multi-tier Services Development with LINQ*

FOCUSING ON MULTI-TIER APPLICATION DESIGN, THIS TITLE COMBINES WCF AND LINQ TO BUILD EFFICIENT SERVICE LAYERS. READERS LEARN HOW TO INTEGRATE DATA QUERYING WITH SERVICE OPERATIONS, HANDLE TRANSACTIONS, AND OPTIMIZE PERFORMANCE IN DISTRIBUTED ENVIRONMENTS.

5. *Essential Windows Communication Foundation (WCF)*

OFFERING A THOROUGH OVERVIEW OF WCF, THIS BOOK EXPLAINS THE CORE CONCEPTS AND COMPONENTS NEEDED TO DEVELOP SERVICE-BASED APPLICATIONS. IT COVERS TOPICS LIKE HOSTING OPTIONS, SERIALIZATION, AND MESSAGE PATTERNS, MAKING IT A SOLID REFERENCE FOR BOTH NEW AND SEASONED DEVELOPERS.

6. *Building Secure Web Services with WCF*

SECURITY IS PARAMOUNT IN WEB SERVICES, AND THIS BOOK ADDRESSES IT BY SHOWING HOW TO IMPLEMENT AUTHENTICATION, AUTHORIZATION, AND MESSAGE ENCRYPTION IN WCF. IT INCLUDES PRACTICAL ADVICE ON CONFIGURING SECURITY BINDINGS AND POLICIES TO PROTECT DATA AND ENSURE COMPLIANT COMMUNICATIONS.

7. *WCF Recipes: A Problem-Solution Approach*

IDEAL FOR DEVELOPERS LOOKING FOR QUICK SOLUTIONS, THIS BOOK PROVIDES READY-TO-USE CODE SNIPPETS AND BEST PRACTICES FOR COMMON WCF CHALLENGES. FROM CONFIGURING SERVICES TO TROUBLESHOOTING AND PERFORMANCE TUNING, IT SERVES AS A HANDY TOOLKIT FOR EVERYDAY DEVELOPMENT.

8. *Distributed Application Development with WCF*

THIS TITLE DISCUSSES DESIGNING AND BUILDING DISTRIBUTED APPLICATIONS USING WCF, FOCUSING ON SCALABILITY AND RELIABILITY. IT EXPLORES TOPICS SUCH AS ASYNCHRONOUS COMMUNICATION, FAULT HANDLING, AND INTEGRATION WITH OTHER MICROSOFT TECHNOLOGIES TO BUILD ENTERPRISE-GRADE SOLUTIONS.

9. *Mastering Windows Communication Foundation*

AIMED AT ADVANCED DEVELOPERS, THIS BOOK DIVES DEEP INTO WCF'S EXTENSIBILITY AND CUSTOMIZATION POINTS. IT COVERS CREATING CUSTOM BINDINGS, BEHAVIORS, AND INSPECTORS, ENABLING DEVELOPERS TO TAILOR WCF SERVICES TO MEET

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windows communication foundation web services: Microsoft Windows Communication Foundation Craig McMurtry, Marc Mercuri, Nigel Watling, 2006 Windows Communication Foundation (WCF--formerly codename Indigo) ties together previously separate Microsoft connectivity technologies (Web Services, MSMQ, COM+, .NET Remoting, etc.) into a single programming model. WCF is part of the WinFX platform that is essentially the Windows Programming SDK that will ship with Windows Vista. This title addresses an unmet need in the marketplace as there are no books, or much documentation at all, of the post-Beta 1 WCF programming model and therefore brings developers the information they need to be prepared to work with this technology upon its release. The reader will gain a comprehensive understanding of how to apply the Windows Communication Foundation to almost any distributed computing problem, from enterprise scale to peer-to-peer. Most importantly, after reading the book and working through the examples, they will actually have considerable experience using WCF, because the book and accompanying CD take the reader through the steps of actually building Windows Communication Foundation solutions.

windows communication foundation web services: Windows Communication Foundation 3.5 Unleashed Craig McMurtry, Nigel Watling, Matt Winkler, Marc Mercuri, 2008-10-07 Windows Communication Foundation (WCF) is Microsoft's dynamic technology for allowing autonomous software to communicate. Superseding earlier technologies such as COM/DCOM, .NET Remoting, ASP.NET Web Services, and the Web Services Enhancements for .NET, WCF provides a single solution that is designed to always be the best way to exchange data among software entities. It also provides the infrastructure for developing the next generation of Web Services, with support for the WS-* family of specifications, and a new serialization system for enhanced performance. In the 3.5 release, WCF has been expanded to include support for REST, JSON, and Syndication (RSS and Atom) services, further broadening the possibilities for what can be done. For information technology professionals, WCF supplies an impressive array of administration tools that enterprises and software vendors can use to reduce the cost of ownership of their solutions without writing a single line of code. Most important, WCF delivers on the promise of model-driven software development with the new software factory approach, by which one can iteratively design solutions in a modeling language and generate executables from lower-level class libraries. Windows Communication Foundation 3.5 Unleashed is designed to be the essential resource for software developers and architects working with WCF. The book guides readers through a conceptual understanding of all the facilities of WCF and provides step-by-step guides to applying the technology to practical problems. As evangelists at Microsoft for WCF, WF, and CardSpace, Craig McMurtry, Marc Mercuri, Nigel Watling, and Matt Winkler are uniquely positioned to write this book. They had access to the development team and to the product as it was being built. Their work with enterprises and outside software vendors has given them unique insight into how others see the software, how they want to apply it, and the challenges they face in doing so. --Gives you nearly 100 best practices for programming with WCF --Provides detailed coverage of how to version services

that you will not find anywhere else --Delves into using WCF together with Windows Workflow Foundation (WF) and Windows CardSpace --Provides detailed coverage of the new high-performance data contract serializer for .NET --Walks you through creating secure, reliable, transacted messaging, and how to understand the available options --Introduces you to federated, claims-based security and shows you how to incorporate SAML and WS-Trust security token services into your architecture --Provides step-by-step instructions for how to customize every aspect of WCF --Shows you how to add behaviors, communication channels, message encoders, and transports --Presents options for implementing publish/subscribe solutions --Gives clear guidance on peer-to-peer communications with WCF

windows communication foundation web services: Professional WCF 4 Pablo Cibraro, Kurt Claey, Fabio Cozzolino, Johann Grabner, 2010-07-15 A guide to architecting, designing, and building distributed applications with Windows Communication Foundation Windows Communication Foundation is the .NET technology that is used to build service-oriented applications, exchange messages in various communication scenarios, and run workflows. This guide enables developers to create state-of-the-art applications using this technology. Written by a team of Microsoft MVPs and WCF experts, this book explains how the pieces of WCF 4.0 build on each other to provide a comprehensive framework to support distributed enterprise applications. Experienced developers will learn both theory and practical application using the familiar Wrox approach. .NET developers will learn to design services, create a hosting environment with Dublin, build cloud-based integrations, and much more. Coverage Includes: Design Principles and Patterns Service Contracts and Data Contracts Bindings Clients Instanting Workflow Services Understanding WCF Security WCF Security in Action Federated Authentication in WCF Windows Azure Platform AppFabric Creating a SOA Case Creating the Communication and Integration Case Creating the Business Process Hosting

windows communication foundation web services: Windows Communication Foundation 4 Step by Step John Sharp, 2010-11-23 Your hands-on, step-by-step guide to building connected, service-oriented applications. Teach yourself the essentials of Windows Communication Foundation (WCF) 4 -- one step at a time. With this practical, learn-by-doing tutorial, you get the clear guidance and hands-on examples you need to begin creating Web services for robust Windows-based business applications. Discover how to: Build and host SOAP and REST services Maintain service contracts and data contracts Control configuration and communications programmatically Implement message encryption, authentication, and authorization Manage identity with Windows CardSpace Begin working with Windows Workflow Foundation to create scalable and durable business services Implement service discovery and message routing Optimize performance with service throttling, encoding, and streaming Integrate WCF services with ASP.NET clients and enterprise services components Your Step by Step digital content includes: Practice exercises Downloadable code samples Fully searchable online edition of the book -- with unlimited access on the Web

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communication stack to use only the protocols you need Using standard and custom service behaviors to manage concurrency, instances, transactions, and more Serializing data from .NET types to XML Infosets and representing Infosets "on the wire" Hosting WCF services via IIS, managed .NET applications, and Windows Activation Services WCF security, in depth: authentication; transport and message-level security; and Internet and intranet scenarios Improving reliability: exception handling, diagnostics, and more Workflow services: new integration points between WCF 3.5 and Windows Workflow Foundation Building client-to-client, peer network-based applications Utilizing WCF for non-SOAP Web services: AJAX and JSON examples and .NET 3.5 hosting classes Microsoft's Steve Resnick, Richard Crane, and Chris Bowen are technology experts at the Microsoft Technology Center in Boston. They specialize in helping customers improve their technical agility by applying WCF and related technologies. Resnick has specialized in Internet technologies and distributed computing at Microsoft since 1995. He is a frequent speaker at Microsoft events and is now technology director for the U.S. Microsoft Technology Centers. Crane has more than 15 years of experience in senior software development roles. He specializes in large-scale Web sites, distributed computing, transactional systems, and performance analysis. Bowen has been an architect and developer for more than 15 years at companies such as Monster.com and Staples and is co-author of Professional Visual Studio 2005 Team System.

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windows communication foundation web services: Professional WCF Programming Scott Klein, 2007-07-02 Part of the new .NET 3.0 extensions to .NET 2.0, WCF provides a unified platform for building and running connected systems and will be used by almost every .NET or SQL Server developer Targeted to experienced developers who want to build service-oriented and transactional applications on the Microsoft platform that offer reliable and secure transactional messaging Addresses the WCF technologies as well as the next generation of configuring and deploying network-distributed services Key topics discussed include binding, contracts, clients, services, security, deployment, management, and hosting

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windows communication foundation web services: Windows Communication Foundation 4 Step by Step John Sharp, 2010 Your hands-on, step-by-step guide to building connected, service-oriented applications. Teach yourself the essentials of Windows Communication Foundation (WCF) 4 -- one step at a time. With this practical, learn-by-doing tutorial, you get the clear guidance and hands-on examples you need to begin creating Web services for robust Windows-based business applications. Discover how to: Build and host SOAP and REST services Maintain service contracts and data contracts Control configuration and communications programmatically Implement message encryption, authentication, and authorization Manage identity with Windows CardSpace Begin working with Windows Workflow Foundation to create scalable and durable business services Implement service discovery and message routing Optimize performance with service throttling, encoding, and streaming Integrate WCF services with ASP.NET clients and enterprise services components Your Step by Step digital content includes: Practice exercises Downloadable code samples Fully searchable online edition of the book -- with unlimited access on the Web

windows communication foundation web services: *Microsoft Windows Communication Foundation 4.0 Cookbook for Developing SOA Applications* Steven Cheng, 2010-10-20 Over 85 easy recipes for managing communication between applications with Microsoft Windows Communication Foundation 4.0 in this book and eBook.

windows communication foundation web services: Developing Service-Oriented Applications Using the Windows Communication Foundation (WCF) Framework Patel, Chirag, 2017-01-06 Recent advancements in technology have allowed for significant improvements to computer software design and development. By utilizing the latest available frameworks, developers can build more innovative applications. *Developing Service-Oriented Applications Using the Windows Communication Foundation (WCF) Framework* is a pivotal source of research on the latest protocols and concepts for applying the Windows Communication Foundation (WCF) framework in the development of computer software applications. Highlighting pivotal perspectives on topics such as interoperability, programming methodologies, and security considerations, this book is ideally designed for professionals, researchers, graduate students, software developers, and practitioners interested in the optimization of service-oriented architectures.

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