

The WCF REST Family

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Agenda

- **Background on WCF and REST**
- **WCF from SOAP to REST**
- **WCF Data Services**
- **Advanced/Applied Data Services**
- **WCF RIA Services**



History of WCF in .NET

- **NET 3.0 - Nov 2006**
 - Initial release - Channels, Endpoints, Behaviors
- **.NET 3.5 - Nov 2007**
 - Adds support for Web programming model (REST)
- **.NET 3.5 SP1 – Aug 2008**
 - Entity Framework
 - ADO.NET Data Services (built on WCF)



SOAP

- **Protocol specification for exchanging structured information (formalized in 1998 with v1.2 June 2003)**
- **Transport protocol independent**
- **Sophisticated - Secure, reliable and transacted**
- **Metadata allows code generation**
- **"The best RPC so far"**
- **"On the web, not of the web"**



REST

- **Dr Roy Fielding provided a formal description for the architecture of the web in 2000**
- **Uses resources instead of operations**
- **Resources can have multiple representations**
- **URIs used to address the resources**
- **Embraces HTTP verbs (not just POST)**
- **Least common denominator technologies**
- **Less functionality, better interop**



HTTP Verbs

- **GET / HEAD**
 - Retrieves a resource (or metadata about it)
 - Safe (does not change the state of the system) (Cacheable)
- **POST**
 - Creates a new resource
 - Unsafe (effect isn't defined by HTTP spec)
- **PUT**
 - Updates an existing resource
 - Used for resource creation when client knows URI
 - Can call N times and the same thing will happen
- **DELETE**
 - Removes a resource (also idempotent)



REST vs. SOAP

- **Use SOAP when**
 - Need different protocols
 - Need different MEPs
 - Need sophisticated security
- **Use REST when**
 - Clients are unknown
 - Only HTTP will be utilized, caching needed
 - Service is resource centric



Demo

- **Changing from SOAP to REST**



REST Realignment

- **PDC 2009 Announcement**
a “realignment around WCF”
- **ADO.NET Data Services ->**
WCF Data Services
- **.NET RIA Services ->**
WCF RIA Services



WCF Data Services

- **Different way of thinking about data centric services**
- **Instead of having to create CRUD operations, you expose read/write access to the data model**
- **Built of standard REST protocol called oData based on AtomPub**
- **Gaining momentum**



Exposing WCF Data Services

- Create a class derives from **DataService<TModel>**
- **<TModel>** needs to be something that has **IQueryable<T>** properties



Demo

- **Creating a WCF Data Service**
- **Entity Access Rules**
- **Debugging problems using WCF**
- **oData protocol**



Consuming WCF Data Services

- **Use REST**
- **Use a standard Service Reference**
- **Client APIs available in other languages**



Demo

- **Consuming the Service**
- **Creating your own Data Sources**
- **Query Interceptors**



WCF RIA Services

- **Silverlight extensions built on WCF (and later integrated into WCF Data Services)**
- **Allows client code generation that looks more like the service objects**
- **Allows validation code in one place**
- **Can support data binding on the client**



Demo

- **Creating a WCF RIA Service**
- **Adding a Domain Service**
- **Exploring Metadata attributes**



Thank You



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