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Visual Studio 2005 .NET Frameworks 2.0中 Web Services开发的新特性

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内容

- ASP.NET Web Services, WSE and Indigo
- Web Services 应用开发 – 我们的期望
- .NET Framework 2.0 – 我们的解决方案
- 通向 Indigo

ASP.NET Web Services, WSE and Indigo

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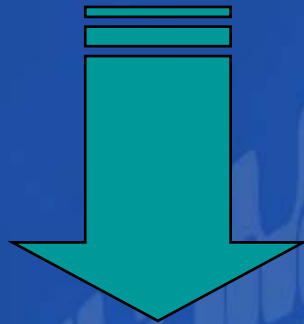
Today

ASP.NET Web Services

Web services 和 面向服务的应用基础

Web Services Enhancements

对WS-*规范的实现



Tomorrow

Indigo

统一的分布式应用框架

Web Services 应用

今天的需求

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- 至关重要的是互操作性
- 客户端需要简易的编程模型
 - Easy data binding
 - Easy async programming model
- 需要自定义的序列化
 - Streaming
 - Custom XML schema
- 需要自定义的代理类生成
 - Instead of modifying generated proxy code
- 需要了解客户端网络的连接性
 - Want to build network-aware applications that can detect online/offline
- 性能
 - Startup latency
 - Network bandwidth

.NET Framework 2.0

- 互操作性
 - 支持WS-I Basic Profile 1.1
- 开发效率
 - 新的客户端异步调用编程模型
- 可扩展性
 - 可扩展的序列化/反序列化
 - 可扩展的代理类生成
- 性能
 - 预编译
 - 支持HTTP Response Compression

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Visual Studio 2005

- 改进的XML 编辑器
- IDE 的增强
- 可管理性

互操作性 – 支持 **WS-I Basic Profile**

- **WS-I Basic Profile** 是
 - SOAP, WSDL 和 HTTP 等标准的一个子集
 - 由 Web Services Interoperability 组织制定 (www.ws-i.org)
 - 得到大部份软件供应商的支持
- **Basic Profile Conformance**
 - A conformant end point adheres to the rules specified by the Basic Profile
 - Example: Doesn't use SOAP encoding

Basic Profile Version 1.1

Final Material

2004-08-24

This version:

<http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html>

Latest version:

<http://www.ws-i.org/Profiles/BasicProfile-1.1.html>

Errata for this Version:

Editors:

[Keith Ballinger, Microsoft \(1.0\)](#)

[David Ehnebuske, IBM \(1.0\)](#)

[Christopher Ferris, IBM](#)

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互操作性 – 支持WS-I Basic Profile

- 由 VS .NET 2005 创建的Web Service在默认情况下遵守WS-I Basic Profile
 - Out of the box, nothing extra you need to do
 - Be careful, there are things you could do that break conformance
- 对于不遵守BP的Web Services, VS .NET 2005将生成警告
 - These warnings are on the service's help page
 - Just by upgrading to Whidbey you get to know if your service is conformant

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Building Basic Profile Conformant Services

互操作性 – 客户端对BP的遵守

- wsdl.exe 将通过WSDL, 检查Web Service 是否遵守BP
 - This lets you know if the WSDL you're consuming is non-conformant
 - We'll continue to process the WSDL if we can
- 客户端在默认的情况下遵守BP
 - Unless there's something in the service's WSDL that prevents that e.g. SOAP encoding

互操作性 - SOAP 1.2 支持

- SOAP 1.2 is supported as a new protocol
- On server side
 - Can support both SOAP 1.1 and SOAP 1.2
 - Enable or disable via config
- On client side
 - Wsdl.exe has a SOAP12 value for /protocol
 - Proxy class has SoapProtocolVersion property

互操作性 - Nulls and Value Types

- Instantiated generics are supported in Web services
 - Web service proxies will not use a generic type
- Nullable<T>
 - Enables nullable value types
 - Maps to nillable='true' in XML Schema
 - Especially useful when consuming non-.NET WSDLs

互操作性 - Contract First !

- 面向服务的编程中，重要的思想
- 通过基于接口的service contracts 实现松耦合
 - Separates interface from implementation
- Supported through the WebServiceBindingAttribute

互操作性 - Contract First !

```
[WebServiceBinding(ConformsTo = WsiProfiles.BasicProfile1_1,
    EmitConformanceClaims = true)]
public interface IConferenceService
{
    [WebMethod]
    SpeakerCollection GetSpeakers();

    [WebMethod]
    SessionCollection GetSessions();

    [WebMethod]
    RoomCollection GetRooms();
}

[WebService(Namespace = "http://www.microsoft.com/events/teched2005/")]
public class ConferenceService : IConferenceService
{
    // ...
}
```

效率-方便的客户端编程模型

- 基于事件的异步编程模型
 - Call XxxAsync and handle XxxCompleted event
 - The event handler gets called on same thread used to call async method
 - Use instead of BeginXxx, EndXxx
- Properties instead of fields
 - Long live data binding!
- 代理类之间的类型共享
 - We automatically detect equivalent schema types and generate one shared CLR type
 - Algorithm first checks for type name/namespace then checks for type *equivalence*

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Event-base Async Client-Side Programming Model

效率-改进的WSDL.EXE工具

- Web services description language tool (wsdl.exe)
 - Event-based asynchronous programming model
 - Supports data binding scenarios
 - XML Schema type sharing
 - WS-I basic profile conformance checking

```
wsdl.exe /sharetypes foo.wsdl bar.wsdl
```


可扩展性 – 自定义的序列化

- System.Xml.Serialization namespace provides numerous types for controlling serialization
- IXmlSerializable defines a contract for stream-based serialization of custom types
- XmlSchemaProviderAttribute may be used to control schema generation

可扩展性 – 自定义的序列化

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```
namespace System.Xml.Serialization
{
    public interface IXmlSerializable
    {
        XmlSchema GetSchema();
        void ReadXml(XmlReader reader);
        void WriteXml(XmlWriter writer);
    }
}
```


可扩展性 – 自定义的序列化

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```
[XmlSchemaProvider("GetSpeakerSchema")]
public class Speaker : IXmlSerializable
{
    public void XmlSchema GetSchema()
    {
        return null;
    }

    public void ReadXml(XmlReader reader) { // ... }

    public void WriteXml(XmlWriter writer) { // ... }

    public XmlQualifiedName GetSpeakerSchema(XmlSchemaSet schemaSet)
    {
        // return QName with XML schema of Speaker class
    }
}
```

可扩展性-自定义的代理类的生成

- A SchemaImporterExtension is
 - New abstract base class that enables custom code generation when importing a schema
- Extensions inherit from the base class and implement schema matching and add custom code
 - Schema matching options
 - Namespace
 - Element
 - Shape matching

可扩展性-自定义的代理类的生成

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- Extensions can be added programmatically or via configuration
 - Application and machine config
- Called at time of import to generate proxy code for schemas and WSDL
 - Extensions are called in configured order
 - First extensions claims a match wins

Networking - NetworkInformation

- Enables applications to provide a better user experience by being more aware of network conditions
- Provides event notifications for changes in network environment
 - E.g. address changes, laptop gets undocked, cable unplugged, wireless card acquires an address, etc.
- Provides an API for enumerating cards on the machine
 - I.e. Is this Ethernet, dial-up, wireless?
 - Get IP, TCP, UDP statistics
 - Open connections, listening ports, etc.

Networking - Auto Proxy Discovery

- Enables managed code to automatically detect proxy settings
- Integrated Implementation
 - Shares Settings used by IE
 - Automatically detects proxy changes at runtime

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Detecting and Reacting to Network Changes

性能 – Startup Time

- Problem
 - XML Serializer generates assemblies on the fly to serialize application types
 - There's an initial hit for generating these assemblies
- Solution
 - A new tool named sgen.exe lets you pre-generate these assemblies at design or deployment time and deploy with your app
 - Serialization assemblies loaded, if found, and runtime invocation of the compiler will not occur

Performance – HTTP Response Compression

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- IIS on Windows Server 2003 supports compression of HTTP response
 - Allows you to compress Web services replies
 - Can be very useful in pay-for-use bandwidth scenarios
 - Improves performance in bandwidth-constrained environments
- .NET Framework 2.0 supports decompression
 - Allows you to decompress Web services replies

Web Services Enhancements 3.0

- Builds on and distinct from .NET Framework 2.0
- Planned to ship around .NET Framework 2.0 timeframe
 - Will be downloadable
- Provides advanced Web services functionality to ASMX
 - Message-based security
 - Message optimizations for large content
 - Transport-independence
 - Flexible hosting with and without IIS

Visual Studio 2005

What's new?

- Improved XML Editor
- IDE enhancements
- Manageability

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Visual Studio 2005

Improved XML Editor

- Dynamic schema validation
- Schema-based IntelliSense
- Visual Studio 2005 provides numerous schemas (i.e. SOAP, XSD, WSDL)
- Supports XML snippets and expansions
- Contract-first service development

Visual Studio 2005

IDE enhancements

- New App_* folders for ASP.NET projects
- App_Data folder
 - Repository for data files (i.e. Access)
- App_Code folder
 - Auto-generation of service proxies for WSDL documents
 - Auto-generation of ADO.NET classes for XML Schemas

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Visual Studio 2005

Manageability

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- Dynamic Systems Initiative (DSI)
 - System Definition Model (SDM)
- Distributed system designers
 - Application designer
 - Deployment designer
 - Logical datacenter designer
 - System designer

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Application Designer



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Web Service的浪潮

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WSE2.0

- 初步实现了WSA的规范
- 置于 ASP.NET之上

ASP.NET 1.0/1.1

- 基本的Web Service

.NET

.NET FX 1.0/1.1

WSE 3.0

- 初步实现了WSA的规范
- WS-Security
- WS-Reliable Message
- MTOM
- 置于 ASP.NET之上

ASP.NET 2.0

- BP 1.1支持
- 增强的编程模型

Whidbey

.NET FX 2.0

Indigo

- 通过面向服务的模型统一所有的通讯
- 更好的编程和定义模型
- 运行环境
 - Windows XP, Windows Server 2003 and Longhorn
 - 最初的版本在Whidbey后发布
 - 最终的版本不晚于Longhorn
- 和最终版本的WSE保持互操作
- 将发布从WSE迁移到Indigo的技术白皮书

Longhorn

Next version of Windows (WinFX)

Summary

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- .NET Framework 2.0 provides many compelling solutions to Web services application problems you face today
- Interop
 - Basic Profile Conformance
 - SOAP 1.2
- Extensibility
 - Custom serialization and streaming
 - Custom proxy code generation
- Client Programming Model
 - Easy to use async programming model
 - Easy data binding
 - Type sharing across Web services
- Networking
 - Automatic proxy discovery
 - NetworkInformation enables network aware applications
- Performance
 - Lowered startup latency
 - Lowered bandwidth utilization through compression

Call To Action


- Build Web services using the .NET Framework 2.0 Beta/Community Drops
 - Experiment with new Web services, XML Serialization, and networking features
- Send us your feedback
 - v-tyang@microsoft.com


Q&A


如需提出问题，请单击“提问”按钮并在随后显示的浮动面板中输入问题内容。一旦完成问题输入后，请单击“提问”按钮。

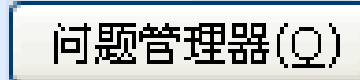
 **问题和解答 (无问题)**  

在此会议中尚未解答任何问题。

要向演示者提问，请在此处键入问 

 提问(A)

 删除(D)

 问题管理器(Q)

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