CFML Web Services Tips and Tricks

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Topics

- Testing Your Web Services
- Consuming Public Web Services
  - ✓Including Amazon web services demo
- Dealing with Data Returned From Web Services
  - ✓Including Processing .NET Datasets
- Web Service Details and Caveats
- Where to Learn More

About Your Speaker

- Independent consultant since April 2006
- 10 yrs CF experience (25 in Enterprise IT)
  - ✓ Member, Adobe Community Experts
  - ✓ Certified Adv CF Developer (4 - 7), Cert. Adobe Instructor
  - ✓ Co-author, ColdFusion MX Bible (Wiley)
  - ✓ Contributor to upcoming CF8 WACK books
  - ✓ Frequent contrib. to ColdFusion Dev Journal, blogs, lists
    - Tech Editor, CFDJ (2001-2003)
  - ✓ Until recently, President, Atlanta ColdFusion User Group
  - ✓ Now co-lead (w/ Ray Camden) Online ColdFusion Meetup (http://coldfusionmeetup.com)
  - ✓ Frequent speaker: UGs, conf's worldwide
  - ✓ Living in Alpharetta, Georgia (north of Atlanta)
- Web home at www.carehart.org
  - ✓ Hosts my blog; lists all my past articles, presentations
  - ✓ UGTV: recordings of presentations by nearly 100 CFUG speakers
  - ✓ AskCharlie: per-minute telephone & web-based CF support

Quick Review

- Talk presumes you know basics to create/consume web services in CFML
  - ✓ Feature of CFMX, BlueDragon
- Simple example of invoking a web service in CFML:

```
<cfinvoke webservice="http://localhost/demo/hello.cfc?wsdl"
   returnvariable="fromhello" method="GetHello">
<cfoutput>#fromhello#</cfoutput>
```

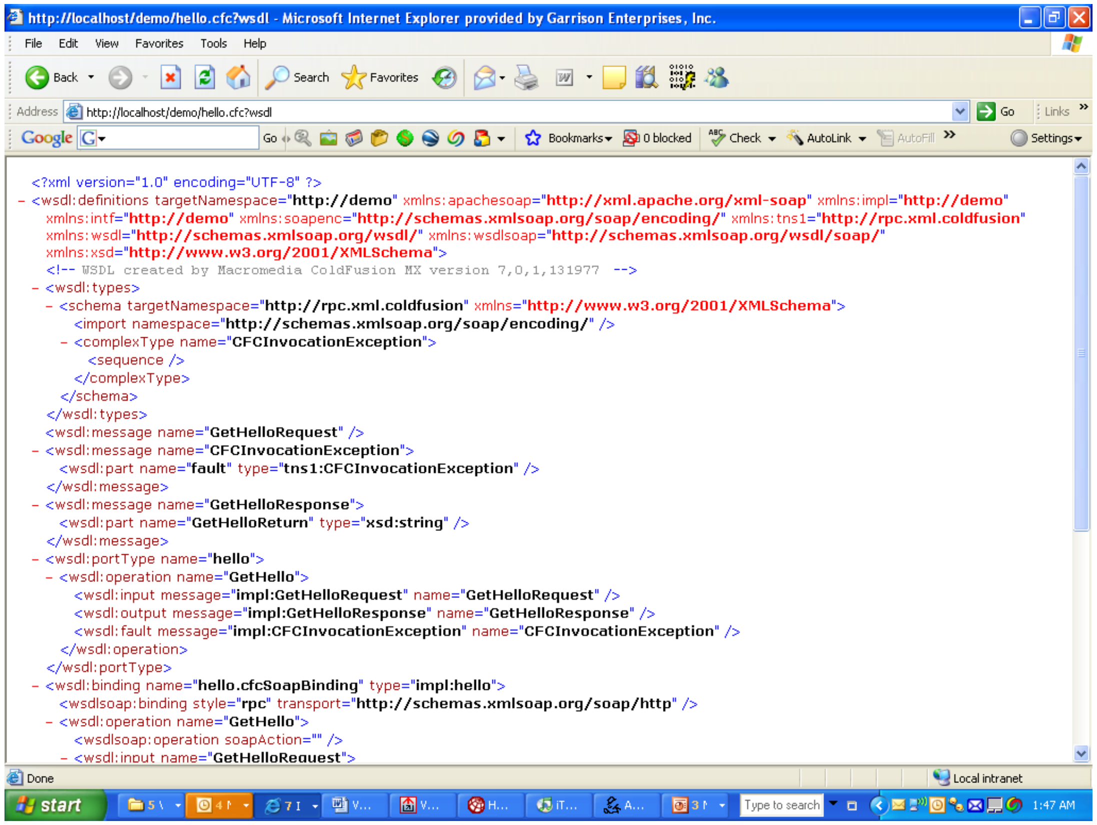
- CFMX/BlueDragon handle details
  - ✓ Generates SOAP objects and publisher/consumer communications
  - ✓ Translates data into and back from XML for trip across the wire

Testing A Web Service

- Whether you’re trying to call a web service and wonder how it works, or writing a web service:
  - ✓ Can use several things, short of writing CFML, to test/invoke your web service
    - On browser URL
    - Using web-based tools
    - Using Dreamweaver MX
  - ✓ Some show web service available methods and the kind of data returned
    - Some allow you to run the web service

Viewing WSDL

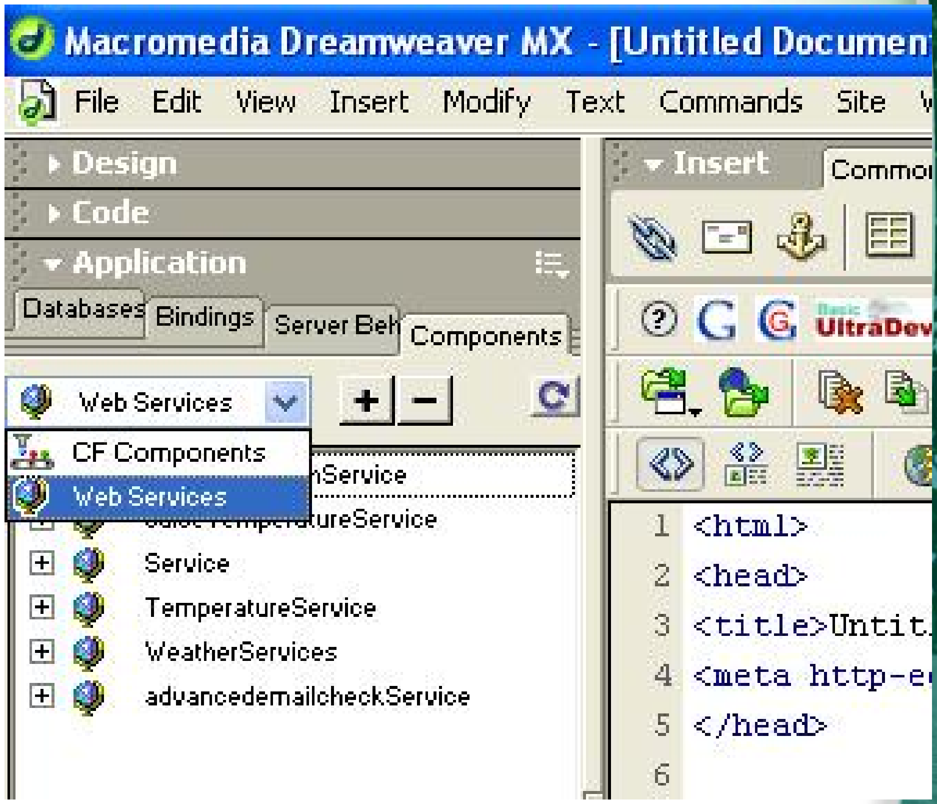
- If URL for CFML web service is entered on browser, we see the resulting WSDL


http://localhost/demo/hello.cfc?wsdl - Microsoft Internet Explorer provided by Garrison Enterprises, Inc.
File Edit View Favorites Tools Help
Address http://localhost/demo/hello.cfc?wsdl
Done
Local intranet

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <wsdl:definitions targetNamespace="http://demo" xmlns:apachesoap="http://xml.apache.org/xml-soap" xmlns:impl="http://demo"
    xmlns:intf="http://demo" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:tns1="http://rpc.xml.coldfusion"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:wsdlsoap="http://schemas.xmlsoap.org/wsdl/soap/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <!-- WSDL created by Macromedia ColdFusion MX version 7,0,1,131977  -->
  - <wsdl:types>
    - <schema targetNamespace="http://rpc.xml.coldfusion" xmlns="http://www.w3.org/2001/XMLSchema">
        <import namespace="http://schemas.xmlsoap.org/soap/encoding/" />
      - <complexType name="CFCInvocationException">
          <sequence />
        </complexType>
      </schema>
    </wsdl:types>
    <wsdl:message name="GetHelloRequest" />
  - <wsdl:message name="CFCInvocationException">
      <wsdl:part name="fault" type="tns1:CFCInvocationException" />
    </wsdl:message>
  - <wsdl:message name="GetHelloResponse">
      <wsdl:part name="GetHelloReturn" type="xsd:string" />
    </wsdl:message>
  - <wsdl:portType name="hello">
    - <wsdl:operation name="GetHello">
        <wsdl:input message="impl:GetHelloRequest" name="GetHelloRequest" />
        <wsdl:output message="impl:GetHelloResponse" name="GetHelloResponse" />
        <wsdl:fault message="impl:CFCInvocationException" name="CFCInvocationException" />
      </wsdl:operation>
    </wsdl:portType>
  - <wsdl:binding name="hello.cfcSoapBinding" type="impl:hello">
      <wsdlsoap:binding style="rpc" transport="http://schemas.xmlsoap.org/soap/http" />
    - <wsdl:operation name="GetHello">
        <wsdlsoap:operation soapAction="" />
      - <wsdl:input name="GetHelloRequest">
```

Viewing Web Svcs in DW

- Can also view any web service or CFC using Dreamweaver MX/2004/8/CS3
  - ✓ Open a CFML page
  - ✓ From Application panel, select Components tab
  - ✓ Choose “web services” from drop down
  - ✓ Provide URL, and it identifies all the methods and input/output arguments of the web service

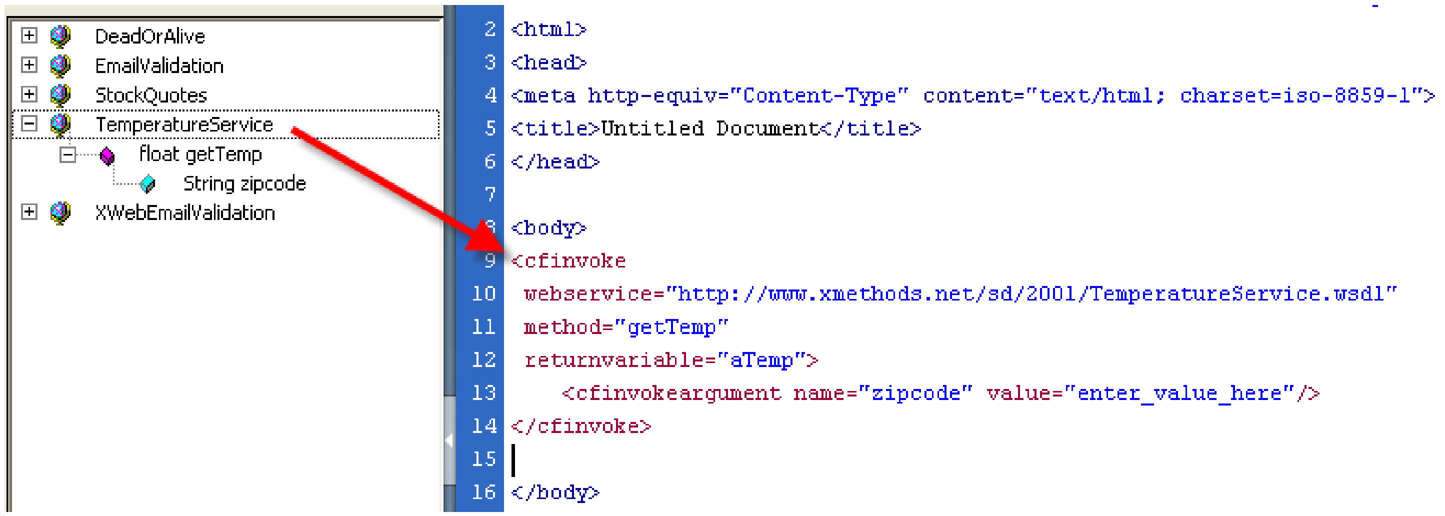

Macromedia Dreamweaver MX - [Untitled Documen
File Edit View Insert Modify Text Commands Site
Design
Code
Application
Databases Bindings Server Beh Components
Insert
Commo
Web Services
CF Components
Web Services
nService
tureService
Service
TemperatureService
WeatherServices
advancedemailcheckService

```
<html>
<head>
<title>Untit
<meta http-e
</head>
```

June 28th – July 1st 2006

Browsing Web Svcs in DW

- Can then drag/drop webservice method to create CFML code
  - ✓ CFINVOKE
  - ✓ CFINVOKEARGUMENTS



```
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<title>Untitled Document</title>
</head>

<body>
<cfinvoke
 webservice="http://www.xmethods.net/sd/2001/TemperatureService.wsdl"
 method="getTemp"
 returnvariable="aTemp">
    <cfinvokeargument name="zipcode" value="enter_value_here"/>
</cfinvoke>

</body>
```

Browsing Web Svcs in Eclipse

- Same feature offered in Eclipse by way of Adobe's ColdFusion Extensions for Eclipse (not CFEclipse)
  - ✓ http://www.adobe.com/support/coldfusion/downloads.html#cfdevtools
  - ✓ Use Services Browser (Window>Show View>Other>ColdFusion>Services Browser)
    - It will take time to first load all CFCs on your system
    - But then click the icon just left of the minimize icon ("Show Web Services")
      - Click red + to add a new WSDL URL
    - Will explore the web service like in DW example
    - Can right-click on WS URL or method to choose option to create CFINVOKE, CFObject, and/or createObject code

Other Web Service Viewing Tools

- http://xmethods.net/ve2/Tools.po
  - ✓ Validates web service's WSDL, see methods and properties
- http://www.mindreef.net/tide/scopeit/start.do
  - ✓ Commercial tool with free web-based sample
  - ✓ Not only can view web service methods and properties
    - But also offers simulated input screens to execute a given method
    - Can view results as raw SOAP, xml, tree view, etc

Other Web Service Viewing Tools

- http://www.gmorpher.com/Morph/dynamo/main.jsp
  - ✓ Works with any web service URLs
  - ✓ Analyze and execute web services (execute requires login)
- Consider Microsoft InfoPath to test web services
  - ✓ http://blogs.msdn.com/bgroth/archive/2004/09/29/235718.aspx
  - ✓ http://office.microsoft.com/en-us/assistance/CH010966841033.aspx
- Also, Altova XMLSpy
  - ✓ http://www.altova.com/products_ide.html

Web Service Viewing Tools (cont)

- Of course, with web-based tools your web service must be web-accessible
  - ✓Can’t test code on your localhost unless you can offer public IP address, have turned off firewall, etc.
- Can use all these tools to test various publicly available web services, discussed next

Executing Web Service Via URL

- Can even execute the service by specifying method in URL:

  http://[host]/[dir]/[file].cfc?wsdl**&method=**[methodname]

  http://127.0.0.1/demo/hello.cfc?wsdl&method=GetHello

Executing Web Service Via URL

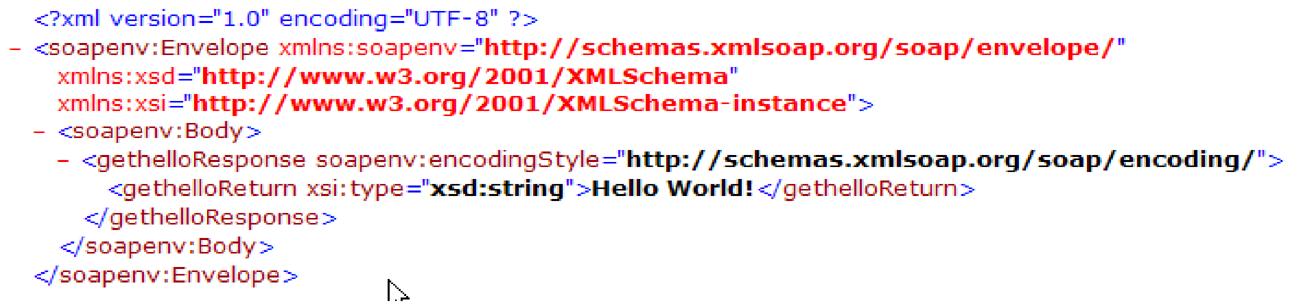
- Curiously, and perhaps as a surprise, CF returns result as WDDX packet

Mistake in notes

  ✓ use “view>source” in browser to see this

    <wddxPacket version='1.0'><header/><data><string>Hello World</string></data></wddxPacket>

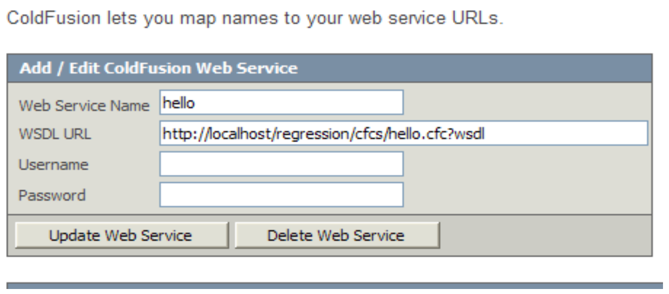
- BlueDragon instead returns SOAP (XML) packet, just as it would to any web service client that would invoke it



```
  <?xml version="1.0" encoding="UTF-8" ?>
- <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  - <soapenv:Body>
    - <gethelloResponse soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
        <gethelloReturn xsi:type="xsd:string">Hello World!</gethelloReturn>
      </gethelloResponse>
    </soapenv:Body>
  </soapenv:Envelope>
```

Creating Web Service Alias

- In CFMX, can create an alias for the web service
  - ✓ Similar to how we define DSN names to abstract details of DB access
  - ✓ See Admin console's "Web Services" link under "Data & Services" in left nav bar



ColdFusion lets you map names to your web service URLs.

Add / Edit ColdFusion Web Service

Web Service Name	hello
WSDL URL	http://localhost/regression/cfcs/hello.cfc?wsdl
Username	
Password	

Creating Web Service Alias (cont.)

- Can then use that alias for web service name wherever would have used full URL (CFINVOKE, CFOBJECT, CreateObject)
- Will see that CFMX already put an entry in for any web service that's been called
  - ✓ Can edit it and simply provide an alias in the "web service name" field
- That admin console listing of an entry for each web service browsed has another use…

Internal Auto-Caching of WSDL

- It reflects the fact that CF has cached the WSDL (created a proxy/stub) for the web service browsed
  - ✓ Sometimes, it’s helpful (indeed needed) to refresh/remove that cache proxy/stub
    - Especially when building/testing your own CFCs as web services, with frequent changes
  - ✓ Simply use the “refresh” icon/link on list of web services
    - Also option to “Update web service” when editing svc
  - ✓ What if no access to Admin console?...

Refresh WSDL Stub in Code

- Do it programmatically

```
<!--- may want to place in secured directory to prevent denial of service attacks or other
mischief --->

<cfparam name="url.wsdlurl"
default="http://soap.amazon.com/schemas2/AmazonWebServices.wsdl">

<cfscript>
// get the web service wsdl file as URL String
wsdl   =   url.wsdlurl;
factory = CreateObject('JAVA', "coldfusion.server.ServiceFactory");
RpcService = factory.XmlRpcService;
RpcService.refreshWebService(wsdl);
</cfscript>

<!--- adapted from Tariq Ahmed code offered via Mark Kruger
at http://mkruger.cfwebtools.com/index.cfm?mode=entry&entry=109AF2A7-C878-138B-
7F3E1940B8426063 --->
```

Consuming Public Web Services

- Commercial examples
  - ✓ http://www.amazon.com/gp/aws/landing.html
  - ✓ http://www.google.com/apis/
  - ✓ http://www.usps.com/webtools/
  - ✓ http://www.ec.ups.com/ecommerce/solutions/c1.html
  - ✓ http://www.fedex.com/us/solutions/wis/index.html/
- Exposing services/data, often even permitting transactions
  - ✓ Sometimes free, sometimes for a fee

Amazon Web Services

- Exposes Amazon’s product data and E-Commerce functionality
  - ✓ Detailed Product Information on all Amazon.com Products
  - ✓ Access to Amazon.com Product Images
  - ✓ All Customer Reviews associated with a Product
  - ✓ Extended Search
  - ✓ Remote Shopping Cart
  - ✓ Amazon Wish List Search
  - ✓ And more

Amazon Web Services

- Leverage Amazon data and functionality to power your own E-Commerce business
  - ✓ Requires Account, Account Number, Access Key ID, Subscription ID, Developer Token
  - ✓ Free of charge
    - Limited to one request per second per IP address
- Amazon supports both SOAP and REST approaches
  - ✓ Each will require different URL for web service

SOAP vs REST

- Focus in most CFML docs is on creating/consuming SOAP-based web services
  - ✓ SOAP packages data in a special XML envelope
  - ✓ SOAP servers and clients (like CF and BD) handle the details
  - ✓ Client gets back data as same datatype sent (string, number, etc.)

SOAP vs REST

- Some web services instead serve data via HTTP requests and return plain XML (XML over HTTP)
  - ✓ Could call such web services using CFHTTP
    - Or test via URL in browser
    - Or use CFXMLRPC tag in BlueDragon
  - ✓ You then process result using CFMX/BlueDragon functions for XML
  - ✓ Approaches:
    - Xml-rpc: http://www.xmlrpc.com/
    - REST: http://www.xfront.com/REST-Web-Services.html
  - ✓ Benefit: easy to do via browser URLs, returns XML (IE formats nicely)

Calling Amazon Web Service

- Docs at their site describe the many available methods (and their properties)
  - ✓ And how to call their web service
  - ✓ Available “XML ScratchPad” tool shows how to build a URL to use for various services
- Is about more than just books now
  - ✓ Here’s how to find seafood restaurants in Seattle

Calling Amazon Web Service

- Via URL (browser or CFHTTP)

  http://webservices.amazon.com/onca/xml?Service=AWSECommerceService&SubscriptionId=**[id]**&Operation=ItemSearch&SearchIndex=Restaurants&Cuisine=seafood&Neighborhood=downtown&City=Seattle

- Via CFHTTP

```
<cfhttp url="http://webservices.amazon.com/onca/xml?Service=AWSECommerceService&SubscriptionId=[id]&Operation=ItemSearch&SearchIndex=Restaurants&Cuisine=seafood&Neighborhood=downtown&City=Seattle">
<cfdump var="#cfhttp.filecontent#">
```

Traditional Book Request

```
<!--- invoke_amazon_soap.cfm --->
<!--- part 1 of 3 (join together to run as one)--->
<cfparam name="url.keyword" default="coldfusion">
<cfscript>
aKeywordRequest = structnew();
aKeywordRequest.devtag="yourtag";
aKeywordRequest.keyword=url.keyword;
aKeywordRequest.mode="books";
aKeywordRequest.page="1";
// aKeywordRequest.sort="+salesrank";
aKeywordRequest.tag="webservices-20";
aKeywordRequest.type="lite";
</cfscript>
```

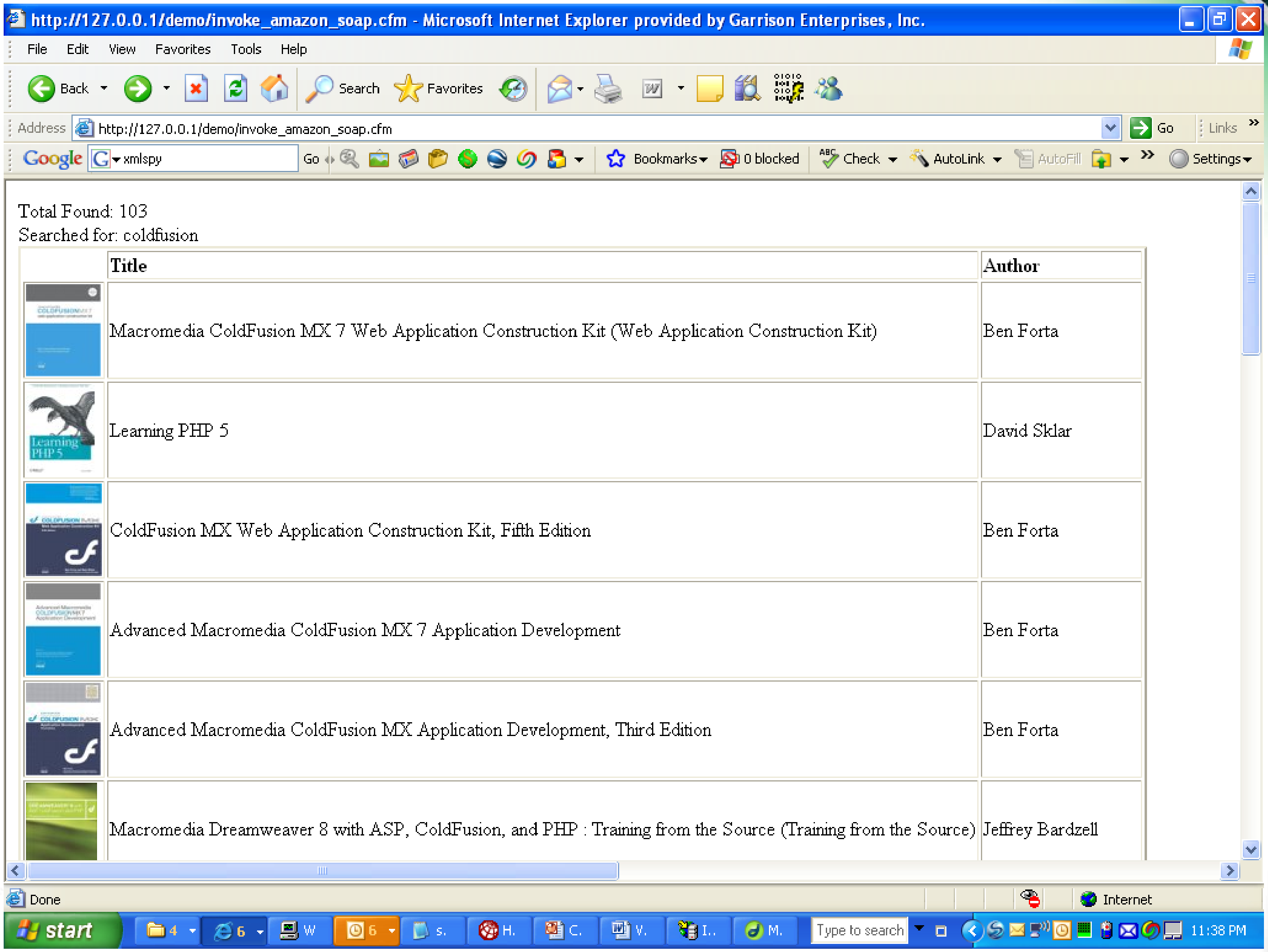
Traditional Book Request

```
<!--- part 2 of 3 (join together to run as one)--->
<cftry>
    <cfinvoke webservice=
    "http://soap.amazon.com/schemas2/AmazonWebServices.wsdl"
    method="KeywordSearchRequest“ returnvariable="aProductInfo">
    <cfinvokeargument name="KeywordSearchRequest"
    value="#aKeywordRequest#"/>
    </cfinvoke>
    <cfcatch>
            <cfif cfcatch.message contains "Could not perform web service
    invocation">
                    No records found.
                    <Cfdump var="#cfcatch#">
            <cfelse>
                    Unexpected error in invocation of web service.
                    <cfdump var="#cfcatch#">
            </cfif>
            <cfabort>
    </cfcatch>
</cftry>
```

Traditional Book Request

```
<!--- part 3 of 3 (join together to run as one)--->
<cfoutput>
Total Found: #aProductInfo.TotalResults#<br>
Searched for: #url.keyword#
</cfoutput>

<table border="2">
<tr><td></td><td><strong>Title</strong></td><td>
<strong>Author</strong></td></tr>
<cfoutput>
<cfloop index="i" from="1" to="#arraylen(aProductInfo.details)#"
step="1" >
<tr>
<td><img src="#aProductInfo.details[i].ImageUrlSmall#"></td>
<td>#aProductInfo.details[i].ProductName#</td>
<td>#aProductInfo.details[i].authors[1]#</td>
</tr>
</cfloop>
</cfoutput>
</table>
```


http://127.0.0.1/demo/invoke_amazon_soap.cfm - Microsoft Internet Explorer provided by Garrison Enterprises, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address http://127.0.0.1/demo/invoke_amazon_soap.cfm Go Links
Google xmlspy Go Bookmarks 0 blocked Check AutoLink AutoFill Settings
Done Internet
start Type to search 11:38 PM

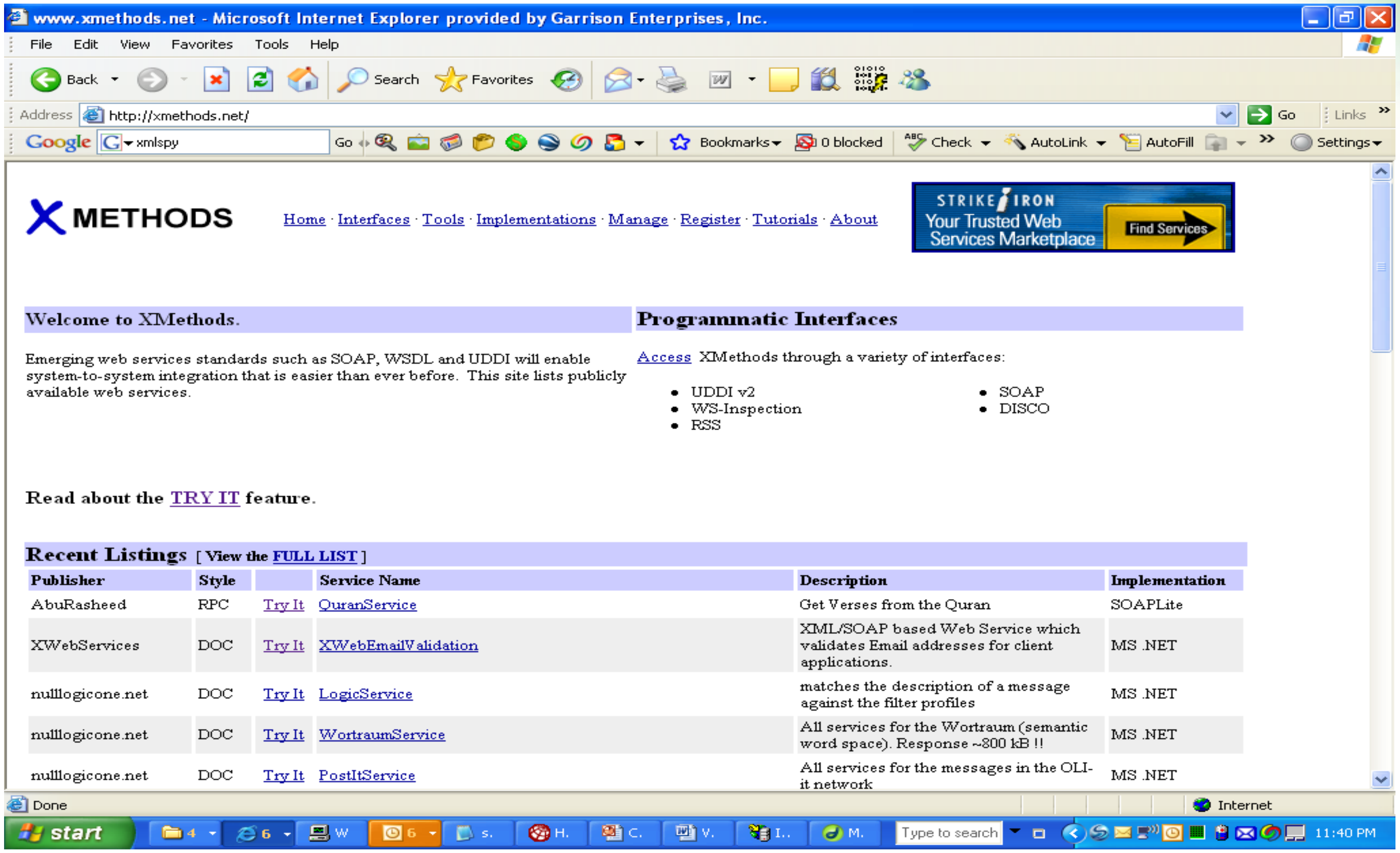
Total Found: 103
Searched for: coldfusion

	Title	Author
	Macromedia ColdFusion MX 7 Web Application Construction Kit (Web Application Construction Kit)	Ben Forta
	Learning PHP 5	David Sklar
	ColdFusion MX Web Application Construction Kit, Fifth Edition	Ben Forta
	Advanced Macromedia ColdFusion MX 7 Application Development	Ben Forta
	Advanced Macromedia ColdFusion MX Application Development, Third Edition	Ben Forta
	Macromedia Dreamweaver 8 with ASP, ColdFusion, and PHP : Training from the Source (Training from the Source)	Jeffrey Bardzell

Other Public Web Services

- Other Public Services - Directories
  - ✓http://www.xmethods.net
  - ✓http://www.serviceobjects.com/products/default.asp
  - ✓http://www.webservicex.net/

XMethods.NET



www.xmethods.net - Microsoft Internet Explorer provided by Garrison Enterprises, Inc.

Address http://xmethods.net/

XMETHODS Home · Interfaces · Tools · Implementations · Manage · Register · Tutorials · About

STRIKE IRON Your Trusted Web Services Marketplace Find Services

Welcome to XMethods.

Emerging web services standards such as SOAP, WSDL and UDDI will enable system-to-system integration that is easier than ever before. This site lists publicly available web services.

Programmatic Interfaces

Access XMethods through a variety of interfaces:

- UDDI v2
- WS-Inspection
- RSS
- SOAP
- DISCO

Read about the TRY IT feature.

Recent Listings [View the FULL LIST]

Publisher	Style		Service Name	Description	Implementation
AbuRasheed	RPC	Try It	QuranService	Get Verses from the Quran	SOAPLite
XWebServices	DOC	Try It	XWebEmailValidation	XML/SOAP based Web Service which validates Email addresses for client applications.	MS .NET
nulllogicone.net	DOC	Try It	LogicService	matches the description of a message against the filter profiles	MS .NET
nulllogicone.net	DOC	Try It	WortraumService	All services for the Wortraum (semantic word space). Response ~800 kB !!	MS .NET
nulllogicone.net	DOC	Try It	PostItService	All services for the messages in the OLI-it network	MS .NET

Calling ValidateEmail Service

- ValidateEmail is at webservicesx.net

```
<cfobject
webservice="http://www.webservicex.net/ValidateEmail
.asmx?WSDL" name="checkmail">

<cfparam name="email"
default="charlie@carehart.org">
<cfoutput>#email# is</cfoutput>
<cfif checkmail.IsValidEmail(email)>
  good email
<cfelse>
  bad email
</cfif>
address
<p>
```

Calling ValidateEmail Service

- You can call that as filename.cfm?email=x@y.com
- Beware
  - ✓ some mail servers will return true ("good") for any email address, even if not a valid one at that domain. At least the domain name is validated in such instances.

Dealing with Data Returned From Web Services

- Can publish many datatypes via web svc
  - ✓ Simple string
  - ✓ Array
  - ✓ Structure
  - ✓ Array of structures
  - ✓ CFML query result set (with a caveat, discussed later)
  - ✓ XML object (using CFMX and BlueDragon's support of XML)
  - ✓ To name a few

Determining Data Types

- How can CFML web svc client know the type of data returned from a web service?
  - ✓It it a query? an array? a structure? something else?
    - Must know type to determine how to process
  - ✓See typeof UDF:
    - http://cflib.org/udf.cfm?ID=689
  - ✓Reports if something is a array, struct, query, string, date, numeric, boolean, binary, wddx, xml object, or even a custom function (udf)

new

Parsing a more elaborate web service result

```
<cfinvoke
 webservice="http://ws.invesbot.com/stockquotes.asmx?WSDL"
 method="getQuote"
 returnvariable="a_GetQuoteResponse_GetQuoteResult">
     <cfinvokeargument name="symbol" value="msft"/>
</cfinvoke>

<cfset resultarray = a_GetQuoteResponse_GetQuoteResult.get_any()>
<cfset arrayelement = resultarray[1]>
<cfoutput>
#htmlcodeformat(arrayelement.tostring())#
</cfoutput>

<cfset xml = xmlparse(arrayelement.tostring())>

<cfdump var="#xml#">
```

Returning CF Query Results

- What if you try to return a CF Query resultset over web services to a non-CF consumer?
  - ✓ They won't understand it
  - ✓ Can instead convert into an array of structures
  - ✓ Consider following UDFs at the cflib.org site
    - QueryToArrayOfStructures: http://cflib.org/udf.cfm?ID=10
    - ArrayOfStructuresToQuery: http://cflib.org/udf.cfm?ID=287

    - QueryToStructOfArrays: http://cflib.org/udf.cfm?ID=470
    - QueryToStructOfStructures: http://cflib.org/udf.cfm?ID=523

Calling a .NET Web Service

- What if you want to call a .NET web service?
  - ✓ See next slide for code of such an .ASMX
- No difference in invocation in CFML

```
<cfinvoke
   webservice="http://127.0.0.1/demo/HelloWorld
   .asmx?wsdl" method="HelloWorld"
   returnvariable="gethello">
<cfdump var="#gethello#">
```

Calling a .NET Web Service

- Saved in /demo/HelloWorld.asmx

```
<%@ WebService Language="C#"
Class="Demo.HelloWorldService" %>
using System.Web.Services;
namespace Demo
{
  public class HelloWorldService: WebService
  {
    [WebMethod]
    public string HelloWorld()
    {
      return "Hello World";
    }
  }
}
```

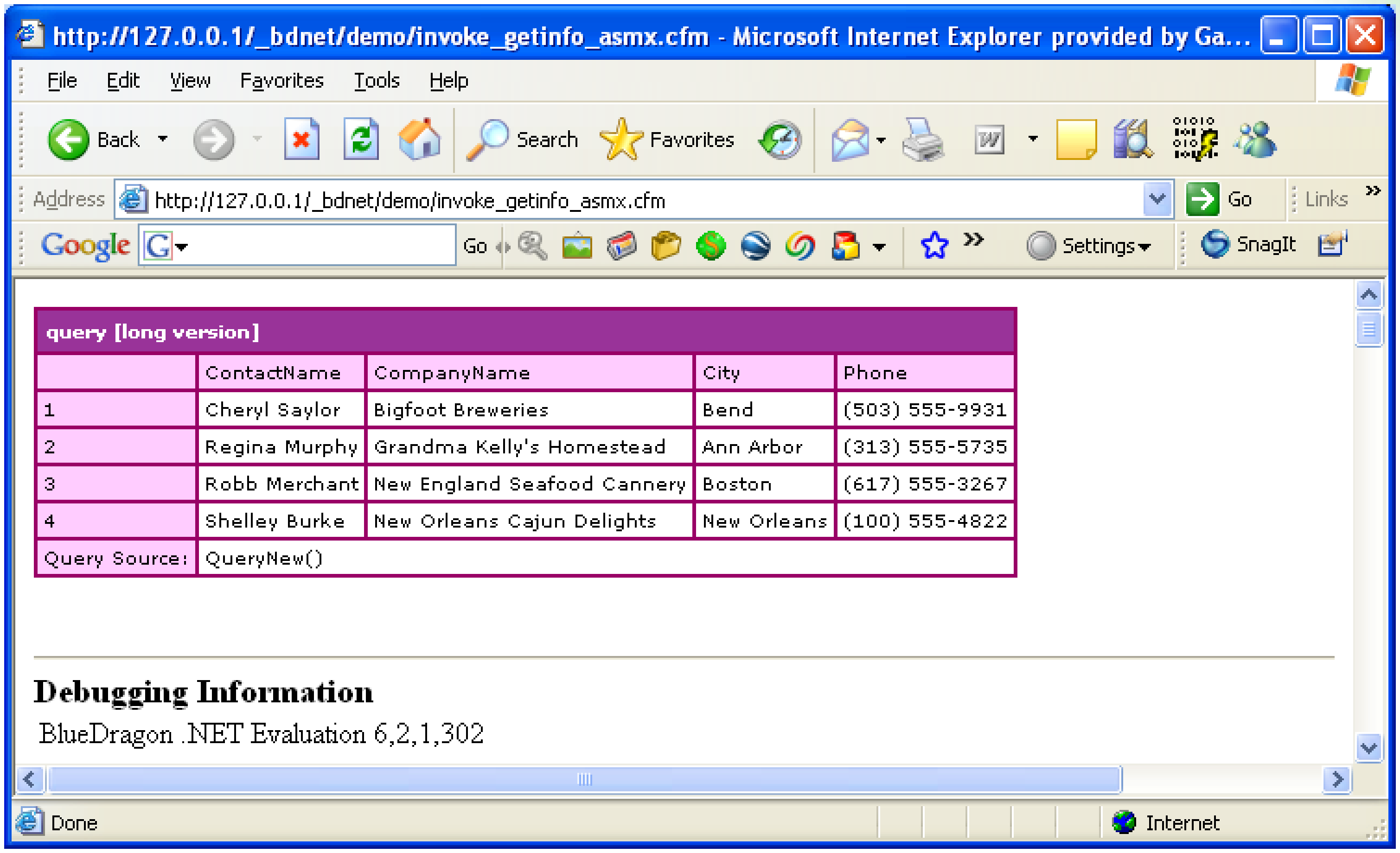
.NET Web Service Datasets

- What if .NET web service returns DataSet?
  - ✓ From CFMX, quite painful. Object returned is a complex object of ill-defined xml entries
    - See CFDJ article, “Crossing the .NET Divide: CFMX, Web Services, and .NET”
      - http://coldfusion.sys-con.com/read/47199.htm
    - He offers a UDF to help with the problem
    - He also covers moving arrays, structs from .NET to CFMX over web services
  - ✓ An argument can be made that .NET web services **should not** return datasets
    - http://www.theserverside.net/articles/showarticle.tss?id=Top5WSMistakes

.NET Web Service Datasets

- From BlueDragon.NET, the issue of consuming a .NET web service returning a dataset is pure simplicity
  - ✓No need to manually convert xml into CF query result. BD.NET does it for you

```
<cfinvoke
   webservice="http://127.0.0.1/demo/GetInfo.asmx?wsdl"
   method="ShowSuppliers" returnvariable="suppliers"
   str="USA">
<cfdump var="#suppliers#">
```


http://127.0.0.1/_bdnet/demo/invoke_getinfo_asmx.cfm - Microsoft Internet Explorer provided by Ga...
File Edit View Favorites Tools Help
Back
Search
Favorites
Address http://127.0.0.1/_bdnet/demo/invoke_getinfo_asmx.cfm
Go
Links
Google
Settings
SnagIt
Done
Internet

query [long version]

	ContactName	CompanyName	City	Phone
1	Cheryl Saylor	Bigfoot Breweries	Bend	(503) 555-9931
2	Regina Murphy	Grandma Kelly's Homestead	Ann Arbor	(313) 555-5735
3	Robb Merchant	New England Seafood Cannery	Boston	(617) 555-3267
4	Shelley Burke	New Orleans Cajun Delights	New Orleans	(100) 555-4822
Query Source:	QueryNew()			

Debugging Information

BlueDragon .NET Evaluation 6,2,1,302

Web Service Details/Caveats

- Exception Handling
  - ✓Web service requests may fail
  - ✓Consider cftry/cfcatch to detect/handle errors
- Timeout
  - ✓CFMX 6.1 added ability to timeout web service requests
    - how long you're willing to wait for a reply

Web Service Details/Caveats

- Security
  - ✓ Can secure CFC using either web server authentication
    - just as you can limit access to any web page
    - CFINVOKE offers USERNAME/PASSWORD
  - ✓ Can secure in CFML using ROLE attribute on CFFUNCTION
    - Tied to CFLOGIN/CFLOGINUSER tags
    - See CFMX documentation for more details

Web Service Details/Caveats

- Caching Web Service object
  - ✓ As we might cache a query resultset if it doesn't change often, can do with web svc
  - ✓ No current feature to cache web service results
    - Can do it yourself, storing result in shared scopes (session/application/server)
    - Use some timing mechanism to determine when to refresh result, re-execute web service invocation

More You Can Learn

- CFMX docs elaborate on many additional topics
  - ✓ Working with WSDL files
  - ✓ Consuming web svcs not generated by CFMX
  - ✓ Calling web services from a Flash client
  - ✓ Catching errors when consuming web services
  - ✓ Configuring web svcs in CFMX Administrator
  - ✓ Conversions between CF/WSDL datatypes
  - ✓ Defining data types for web services
  - ✓ Handling complex data types
  - ✓ Integrating with Dreamweaver MX
  - ✓ **New in CF7: Using SOAP Request/Response Headers**

new →

Learning More

- Macromedia Documentation
  - ✓ 6.1: *Developing ColdFusion MX Applications*, Chapter 32
  - ✓ 7: *ColdFusion MX Developer's Guide,* Chapter 36
  - ✓ Available at livedocs.macromedia.com
- Books
  - ✓ CFMX Bible, Wiley (Churvis, Helms, Arehart), Chapter 25
  - ✓ Programming ColdFusion MX (Brooks-Bilson), Chapter 25
    - http://www.webreference.com/programming/coldfusion/1/index.html
  - ✓ And others

Learning More

- See articles offered in Wednesday talk, “Creating and Consuming Web Services with CFML”
- Also CommunityMX Articles
  - ✓ Oct 04, “Calculating Shipping Costs with UPS Online Tools”
    - http://www.communitymx.com/abstract.cfm?cid=22065
  - ✓ Apr 03, “Consuming the CMX Web Service with ColdFusion”
    - http://www.communitymx.com/abstract.cfm?cid=E2F2842CE1A70AAB
  - ✓ May 03, “Using the Google API from ColdFusion”
    - http://www.communitymx.com/abstract.cfm?cid=8B4C6

new →

Learning More

- Setting/getting cookies in SOAP request
  - ✓ http://tjordahl.blogspot.com/2006/06/how-to-set-cookies-in-coldfusion-soap.html
  - ✓ http://tjordahl.blogspot.com/2006/06/how-to-get-web-service-response.html
- Dave Shuck's CF Web Services examples
  - ✓ http://www.daveshuck.com/index.cfm?webServices
- Using CFMX Sniffer to watch request/response
  - ✓ See last section of WS chapter in "Developing CFMX Applications" (CFMX 7)
  - ✓ http://livedocs.macromedia.com/coldfusion/7/htmldocs/wwhelp/wwhimpl/common/html/wwhelp.htm?context=ColdFusion_Documentation&file=00001556.htm#wp1222082
- Ron West's Advanced WS CFUnited presentation

Summary

- Very easy to create/consume web svcs in CFML
- Several useful tools for testing them
  - ✓ Some in DWMX, some in browser, some as web sites
- Several public web services to explore
  - ✓ Including Amazon and many others
- Useful techniques for processing returned data
  - ✓ Including sharing CF data to other clients, .NET integ.
- Keep security, stub/output caching, other tips in mind

- Questions: charlie@carehart.org

Mistake in notes