Slide 1

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MX

CFMX Hidden Gems

What's new? More than you may know

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SysteManage: *our practice makes you perfect* SM

Slide 2

Agenda

- **Quick Run-down of Popular New CFMX Features**
- **Some Little Known New Features**
- **Some New Features Enabled by J2EE Integration**
- **Potential Gotchas**
- **Comparing Pro and Enterprise**
- **Where to Learn More**
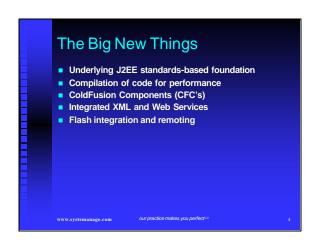 - Dozens of available resources
- **Q&A**

Slide 3

Filling in the Gaps

- **May have heard about the big new things**
  - Many other features get less promotion
  - More are buried in docs, release notes, etc.
- **There's more than you may have heard about**
  - Not even covering all that's new (not enough time)
- **Many resources for learning more**
  - For "big" features, docs and examples are substantial
    - DO take the time to read them
  - Some aspects of new features, and some minor new features, are not as obvious—though documented
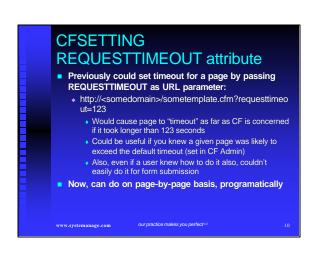   - Challenge is perhaps in knowing where to look

Slide 4

The Big New Things

- **Underlying J2EE standards-based foundation**
- **Compilation of code for performance**
- **ColdFusion Components (CFC's)**
- **Integrated XML and Web Services**
- **Flash integration and remoting**

Slide 5

Not as Big, But Promoted

- **CFFUNCTION**
- **CFCHART**
- **Unicode (internationalization)**
- **Improved debugging and tracing (CFTRACE)**
- **Application and sandbox security (CFLOGIN)**
- **Leveraging JSP Custom Tags (CFIMPORT)**
- **.NET integration (web services, COM objects, Flash)**

Slide 6

Some Little Known New Features

- **New Variable Scopes Available as Structures**
- **CFSETTING REQUESTTIMEOUT**
- **URLSessionFormat() function**
- **J2EE Session Variables**
- **Optional UUID for CFTOKEN**
- **Pre-compiling CF Templates**
- **CFMX Tag Updater for CF Studio**
- **New Custom Tag Features**
- **"Server-side HTML"**
- **Component Constructors**
- **Try/catch in CFSCRIPT, UDFs**
- **New Commenting**
- **COM Object Access Improvements**
- **Dynamic Class Reloading**

Some Little Known New Features

New Variable Scopes Available as Structures

- **We previously had session, application, form, URL, and other scopes available as structures**
  - Could use CFLOOP COLLECTION to loop over them, for instance
- **Now CFMX allows treatment of these that way as well:**
  - Variables
  - Server
  - Caller

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Failed

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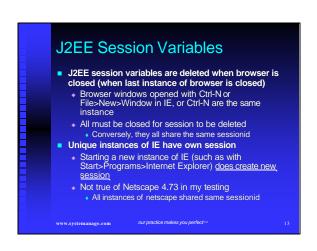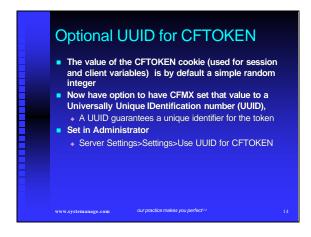## New Variable Scopes Available as Structures (cont.)

```
<CFSET name="bob">

<cfdump var="#variables#">

<cfdump var="#server#">

<CFOUTPUT>
<CFLOOP collection="#server.os#" item="i">
   #i# #server.os[i]#<br>
</CFLOOP>
</CFOUTPUT>
```

CFSETTING REQUESTTIMEOUT attribute

- **Previously could set timeout for a page by passing REQUESTTIMEOUT as URL parameter:**
  - http://<somedomain>/sometemplate.cfm?requesttimeout=123
    - Would cause page to "timeout" as far as CF is concerned if it took longer than 123 seconds
    - Could be useful if you knew a given page was likely to exceed the default timeout (set in CF Admin)
    - Also, even if a user knew how to do it also, couldn't easily do it for form submission
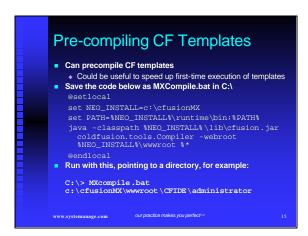- **Now, can do on page-by-page basis, programatically**

URLSessionFormat() Function

- **When using session variables, if browser doesn't support cookies, you are responsible for passing CFID and CFTOKEN on:**
  - <A HREF=>
  - <FORM ACTION=>
  - <CFLOCATION URL=>
  - And more
- **Can now have CF automatically determine if browser supports cookies.**
  - If so, it will add SessionID info (CFID and CFTOKEN) to URL
- **Example:**
  - <a href="#URLSessionFormat("MyActionPage .cfm?name=bob")#">
- **If the detected cookie is not turned on, or cookie support cannot be reliably detected, the function return value is as follows:**
  - myactionpage.cfm?name=bob&cfid=xxxx&cftoken=xxxxxxxx

J2EE Session Variables

- **In addition to traditional CF Session variables, can choose to use J2EE Session variables**
  - Leverages a JSessionID that's assigned
    - Rather than the traditional CFID and CFTOKEN
  - Value is created fresh with each new session
- **Allows sharing of session variables between CF and JSP templates/servlets**
- **Must enable Administrator**
  - Server Settings>Memory Variables>Use J2EE Session Variables

J2EE Session Variables

- **J2EE session variables are deleted when browser is closed (when last instance of browser is closed)**
  - Browser windows opened with Ctrl-N or File>New>Window in IE, or Ctrl-N are the same instance
  - All must be closed for session to be deleted
    - Conversely, they all share the same sessionid
- **Unique instances of IE have own session**
  - Starting a new instance of IE (such as with Start>Programs>Internet Explorer) does create new session
  - Not true of Netscape 4.73 in my testing
    - All instances of netscape shared same sessionid

Optional UUID for CFTOKEN

- **The value of the CFTOKEN cookie (used for session and client variables) is by default a simple random integer**
- **Now have option to have CFMX set that value to a Universally Unique IDentification number (UUID),**
  - A UUID guarantees a unique identifier for the token
- **Set in Administrator**
  - Server Settings>Settings>Use UUID for CFTOKEN

Pre-compiling CF Templates

- **Can precompile CF templates**
  - Could be useful to speed up first-time execution of templates
- **Save the code below as MXCompile.bat in C:**
  ```
  @setlocal
  set NEO_INSTALL=c:\cfusionMX
  set PATH=%NEO_INSTALL%\runtime\bin;%PATH%
  java -classpath %NEO_INSTALL%\lib\cfusion.jar
    coldfusion.tools.Compiler -webroot
    %NEO_INSTALL%\wwwroot %*
  @endlocal
  ```
- **Run with this, pointing to a directory, for example:**
  ```
  C:\> MXcompile.bat
  c:\cfusionMX\wwwroot\CFIDE\administrator
  ```

CFMX Tag Updater for CF Studio

- **Get access to tag insight, tag help, etc. for CFMX tags and updated attributes and functions**
- **http://www.macromedia.com/software/coldfusionstudio/productinfo/resources/tag_updaters/**
  - Download and unzip it to the root of your Studio installation
    - Be sure to choose "overwrite existing files"
- **Works for either Studio 4.x or 5**

New Custom Tag features

- **CFIMPORT tag, while intended for importing JSP tag libraries, can be used to group and use custom tags**
- **<CFIMPORT TAGLIB="pathname" PREFIX=" chooseaname">**
- **Can then refer to custom tags (yes, even CF ones)**
  - <chooseaname:tagname …>
  - Where tagname previously would have been used as <CF_tagname>
  - <CFMODULE TEMPLATE="tagname.cfm">
- **Allows grouping of tags together in a single dir**
  - Also more easily refer to them in any relative dir

"Server-side HTML"

- **Using the previous CFIMPORT of CFML (or JSP) taglibs, can leave off PREFIX attribute or set to empty string**
  - And then ANY tag on the page (HTML, WML, etc.) will be treated as a custom tag if one of the same name is defined in taglib
  - <FORM> could become call to form.cfm template
    - If one exists in the CFIMPORTed library
- **Allows override of basic HTML tags to perform server-side pre-processing**

Component Constructors

- **Components support the notion of a "constructor"**
  - For those familiar with such concepts in OO Design
- **Any tags or functions used outside a method are executed once for each instance of a component**
  - And will be executed when inherited

Try/Catch in CFSCRIPT, UDFs

- **Can now perform try/catch handling in CFSCRIPT**
  - CFSCRIPT is at heart of User Defined Functions
    - So can now do so in UDFs
- **No support yet for equivalent of CFTHROW**
  - To throw error out of script or UDF to caller

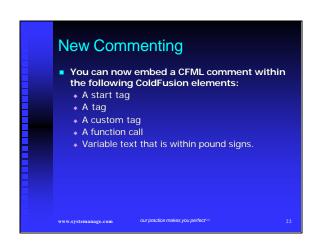## Try/Catch in CFSCRIPT, UDFs

```
<cfscript>
    function test() {
    name="bob";
    try{
        if (myname is "bob") {
                writoutput("ok");
        }
    }
    catch(any excpt){
        writeOutput("This is an error!");
    }
    }
</cfscript>

<cfoutput>
#test()#
</cfoutput>
```

New Commenting

- **You can now embed a CFML comment within the following ColdFusion elements:**
  - A start tag
  - A tag
  - A custom tag
  - A function call
  - Variable text that is within pound signs.

New Commenting (cont.)

- **The following examples show valid embedded CFML comments:**

```
<cfset myVar = 7>
<cfif true eq true <!--- comment --->></cfif>
<cfoutput>myVar: #myVar<!--- comment within pound signs--->#
#IncrementValue(120<!--- comment next to argument--->)#
<cf__comment_pos_05 <!--- comment within custom-tag brackets -
    --->>
<cfset foo = evaluate("1 + 2<!--- comment --->")>
isDefined(dynamicVariable<!--- comment --->)
#isDefined<!--- comment --->("MyConstruct")#
<cfset myLVar<!--- comment ---> = "myLVar&lt;!--- comment ---
    &gt;">
</cfoutput>
```
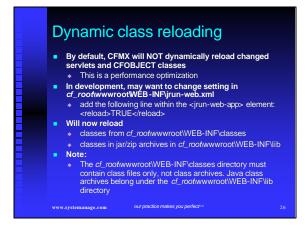
New Commenting (cont.)

- **The following examples show invalid or erroneous embedded CFML comments:**

```
<!--- <cftry>
isDefined("myVariable<!--- no comment within name string ---
    >")
is<!--- no comment within function name ---
    >Defined("myVariable")
<cfout<!--- no comment within tag name --->put "#myVariable#">

<cfcatch></cfcatch>
</cftry> --->
```

COM Object Access Improvements

- **Can improve efficiency of connection to COM objects**
  - ◆ Or enable access to complex COM objects that don't expose all features through IDispatcher interface
- **Use Com2Java.exe utility for creating "java stubs"**
- **See "Document additions" document for more**
  - ◆ also TechNote 22922

Dynamic class reloading

- **By default, CFMX will NOT dynamically reload changed servlets and CFOBJECT classes**
  - ◆ This is a performance optimization
- **In development, may want to change setting in *cf_root*\wwwroot\WEB-INF\jrun-web.xml**
  - ◆ add the following line within the <jrun-web-app> element: <reload>TRUE</reload>
- **Will now reload**
  - ◆ classes from *cf_root*\wwwroot\WEB-INF\classes
  - ◆ classes in jar/zip archives in *cf_root*\wwwroot\WEB-INF\lib
- **Note:**
  - ◆ The *cf_root*\wwwroot\WEB-INF\classes directory must contain class files only, not class archives. Java class archives belong under the *cf_root*\wwwroot\WEB-INF\lib directory
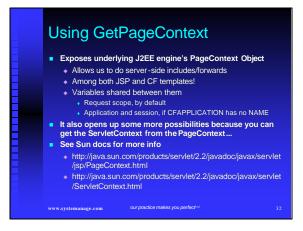
Variety of Other Changes

- **See docs and release notes for more:**
  - ◆ Several Query of Query enhancements
  - ◆ Several CFLDAP changes
  - ◆ CFMAIL spooling option changes
  - ◆ Sort order in ListSort, ArraySort
  - ◆ Date processing functions have short, medium, long formats
  - ◆ Localization functions now follow Java standard rules
  - ◆ Several Regular Expression support changes
  - ◆ CFTHROW can now throw an OBJECT
  - ◆ CFLOG now always writes thread, date, and time
  - ◆ CFHTTP reading text file in as query, new FIRSTROWASHEADERS attribute
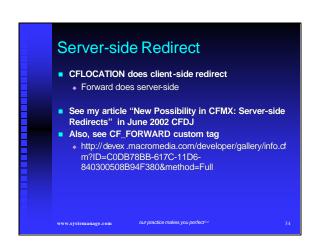 - ◆ Many others (see docs, listed at end of talk)

Additions Since Printing Handouts

- **Free CFMX hosting (non-production basis)**
  - ◆ https://www.hostmysite.com/cfmx.hms
- **Running CFMX on Mac OS X**
  - ◆ Discussion expected at `http://idisk.mac.com/dicklacara/Public/`
- **Can indicate alternative directory for templates outside of normal <cfusionmx_home>\wwwroot**
  - ◆ Add an additional line like the following to <cfusionmx_home>\wwwroot\WEB-INF\jrun-web.xml
    ```
    <virtual-mapping>
    <resource-path>/altptr/*</resource-path>
    <system-path>C:/altdir/</system-path> </virtual-mapping>
    ```
  - ◆ Where "altptr" is a prefix to point to code in "altdir" as: `http://<yourserver>/altptr/template.cfm`
    - ◆ Seems impossible, though, to precompile such code

Additions Since Printing Handouts (cont.)

- **Can now do evaluations within expressions**
  ```
  <cfoutput>
  #1 + 1#
  </cfoutput>
  ```
  - ◆ Or, more practical:
    ```
    <cfquery datasource="cfsnippets" name="get1">
      select * from parks
    </cfquery>

    <cfoutput>
    Time used: #cfquery.executiontime/1000#  seconds
    </cfoutput>
    ```
  - ◆ Prior to CFMX, would need an evaluate here
    - ◆ Intentional change, according to MM reps

Additions Since Printing Handouts (cont.)

- **Two Security Bulletins recently announced**
  - ◆ Patch available for default Missing Template page in ColdFusion MX
    - ◆ http://www.macromedia.com/v1/Handlers/index.cfm?ID=23047
  - ◆ ColdFusion MX Enterprise Edition's JSP™ functionality should be disabled in shared, hosted environments
    - ◆ http://www.macromedia.com/v1/Handlers/index.cfm?ID=23046
- **CF's admin settings are now saved in <cfusion_home>\lib\neo-runtime.xml**
  - ◆ Rather than in the registry, as previously
- **Examples in Docs are now housed at Macromedia.com (avoids security issues)**

Some New Features Enabled by J2EE Integration

Using GetPageContext

- **Exposes underlying J2EE engine's PageContext Object**
  - Allows us to do server-side includes/forwards
  - Among both JSP and CF templates!
  - Variables shared between them
    - Request scope, by default
    - Application and session, if CFAPPLICATION has no NAME
- **It also opens up some more possibilities because you can get the ServletContext from the PageContext...**
- **See Sun docs for more info**
  - http://java.sun.com/products/servlet/2.2/javadoc/javax/servlet/jsp/PageContext.html
  - http://java.sun.com/products/servlet/2.2/javadoc/javax/servlet/ServletContext.html

---

Using GetPageContext

Run these in separate files!

```
<CFSCRIPT>
// include a JSP into your CF page
GetPageContext().include("someFile.jsp")
</CFSCRIPT>
…
<CFSCRIPT>
// transfer control to a CF page
GetPageContext().forward("someFile.cfm")
</CFSCRIPT>
…
<!--- see all that's available in that object --->
<cfdump var="#getPageContext()#">
…
<cfobject class="java.lang.String" action="CREATE" name="str"
    type="JAVA">
<cfset str = "/test/test.cfm">
<cfoutput>#GetPageContext().GetServletContext().getRealPath(str)#
</cfoutput>
```

Server-side Redirect

- **CFLOCATION does client-side redirect**
  - Forward does server-side

- **See my article "New Possibility in CFMX: Server-side Redirects" in June 2002 CFDJ**
- **Also, see CF_FORWARD custom tag**
  - http://devex.macromedia.com/developer/gallery/info.cfm?ID=C0DB78BB-617C-11D6-840300508B94F380&method=Full

---

JSP custom tags

- **No time to cover here in detail**
- **See my CFDJ article for more**
  - Using JSP Custom Tags in CFMX: What, Why, and How (May 2002)
- **Hidden gem:**
  - Can place jar file in same dir as Cf template!

Other Java Stuff

- **See chapter in CFMX documentation:**
  - cfdocs\Developing_ColdFusion_MX_Applications_with_CFML\Java.html
    - chapter 32

Undocumented Java Stuff

- **Can save the java servlet code produced by setting the parameter "coldfusion.compiler.saveJava" in WEB-INF/web.xml to TRUE**
  - Saved as .java files in *cf_root*\wwwroot\WEB-INF\cfclasses \
  - File names may not be apparent:
    - Setsession.cfm becomes cfsetsession2ecfm1011928409.java
- **Interesting coldfusion.server.ServiceFactory object**

```
<cfobject action="CREATE"
    type="JAVA"
    class="coldfusion.server.ServiceFactory"
    name="factory">

<CFdump var="#factory#">
```

Potential Gotchas

Potential Gotchas

- **First time a template is run after creation/edit, is compiled**
  - That takes time. Page request may be rejected
    - 500 level error: The page cannot be displayed
- **Also, sometimes server may not start on server restart**
  - On my machine, at least. Then must manually start CFMX
- **Flash example apps require Netscape 6.3+**

Pro vs. Enterprise

Pro vs. Enterprise

- **Features not in Professional**
  - Enhanced Java integrations
    - Support of JSPs and servlets, sharing data between them and CF templates
  - Server sandbox security
  - Advanced Deployment and Management
  - Load balancing and failover

Where to Learn More

Getting Started Resources

- **Getting Started Resources at Macromedia**
  - http://www.macromedia.com/software/coldfusion/resources/get_started/
- **Getting Started Resources Installed on Server**
  - http://localhost:8500/CFIDE/administrator/welcome.cfm
  - Offers 4 groupings of new features by developer type
  - Links to example applications
- **Interactive Feature Tour at Macromedia**
  - http://www.macromedia.com/software/coldfusion/productinfo/features/flash_feature_tour/

Upgrade Docs/Resources

- **Upgrade Guide**
  - http://www.macromedia.com/software/coldfusion/productinfo/upgrade/
  - Lists top 10 features, pricing info
- **Upgrade FAQ**
  - http://www.macromedia.com/software/coldfusion/productinfo/faq/upgrade/
- **New Feature Comparison Grid**
  - http://www.macromedia.com/software/coldfusion/productinfo/upgrade/comparison.html
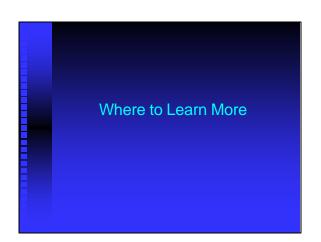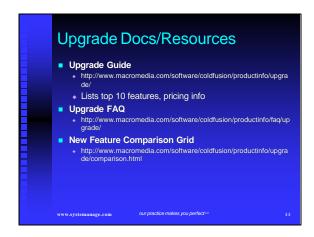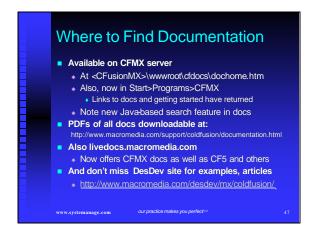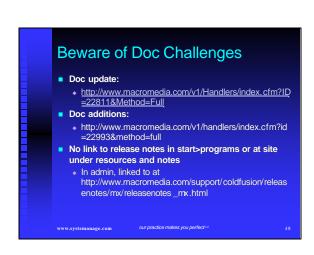
New Docs

- **In addition to standard 4 CFML Documentation books**
  - Installing ColdFusion MX
  - Administering ColdFusion MX
  - CFML Reference
  - Developing ColdFusion MX Applications with CFML
- **There are now 5 new ones:**
  - Getting Started Building ColdFusion MX Applications
  - Migrating CF5 Applications
  - Using Server-Side ActionScript in ColdFusion MX
  - Using ClusterCATS
  - Working with Verity Tools

Updated Docs

- **"Developing ColdFusion MX Applications with CFML"**
  - Redesigned, also new chapters such as:
    - Chapter 10 Writing and Calling User-Defined Functions
    - Chapter 11 Building and Using ColdFusion Components
    - Chapter 13 Designing and Optimizing a ColdFusion Application
    - Chapter 17 Developing Globalized Applications
    - Chapter 22 Using Query of Queries
    - Chapter 29 Using the Flash Remoting Service
    - Chapter 30 Using XML and WDDX
    - Chapter 31 Using Web Services
    - Chapter 32 Integrating J2EE and Java Elements in CFML Applications
  - Of course, several chapters cover updated features
  - Some chapters discuss old subjects in new and better ways

Where to Find Documentation

- **Available on CFMX server**
  - At <CFusionMX>\wwwroot\cfdocs\dochome.htm
  - Also, now in Start>Programs>CFMX
    - Links to docs and getting started have returned
  - Note new Java-based search feature in docs
- **PDFs of all docs downloadable at:**
  - http://www.macromedia.com/support/coldfusion/documentation.html
- **Also livedocs.macromedia.com**
  - Now offers CFMX docs as well as CF5 and others
- **And don't miss DesDev site for examples, articles**
  - http://www.macromedia.com/desdev/mx/coldfusion/

Beware of Doc Challenges

- **Doc update:**
  - http://www.macromedia.com/v1/Handlers/index.cfm?ID=22811&Method=Full
- **Doc additions:**
  - http://www.macromedia.com/v1/handlers/index.cfm?id=22993&method=full
- **No link to release notes in start>programs or at site under resources and notes**
  - In admin, linked to at http://www.macromedia.com/support/coldfusion/releasenotes/mx/releasenotes_mx.html

My Resources

- **Currently 2 CFMX-related articles in ColdFusion Developers Journal**
  - Using JSP Custom Tags in CFMX: What, Why, and How (May 2002)
  - New Possibility in CFMX: Server-side Redirects (June 2002)
- **Planned CFMX-oriented One Day seminars:**
  - CFMX in Depth: Opportunities and Challenges
  - Getting Started with XML and Web Services in CFMX
  - DreamWeaver MX For CF/Studio Users
  - Understanding CFMX/J2EE Integration For Those With No Java Experience
- **These are in addition to 14 others on other CF topics**

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Summary

- **There are many more new features**
  - And aspects of popular features
  - Then are being discussed in common talks and articles
- **Best solution is to read all manuals**
  - And release notes, doc updates,
- **Equally important, if not more**
  - Try out the installed example apps, examples at DesDev Center, examples in docs, own examples
- **Share your experiences with others**
  - Consider writing your own articles for DesDev, CFDJ
- **Hope this has all been helpful and motivating**

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Contact Information

- **Happy to answer questions related to talk**
  - Email: carehart@systemanage.com
  - Phone: 301 604 8399
  - Web: www.systemanage.com

- **Will be developing day-long seminar on CFMX**
- **Also available for**
  - Training (custom or pre-written)
    - CF, DB, Jrun/J2EE, Javascript, wireless, and more
  - Consulting (very short-term)
    - best practices, architecture, setup
  - Developer Group Mentoring

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