Hidden Gems in CF8
A Preview
(100+ and counting!)

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A Preview?

- User group talk grew too large
  - No time to present all 100+ in any detail
- Now will show details of just 25% of the gems
  - The remaining 75% detailed in half-day class
- I will at least list here all 100+ gems
  - So you can know what they are, research on your own

Topics

- Part 1
  - **Coding Gems**
  - **Query-related Gems**
  - **CFC Gems**
  - Miscellaneous Tag Enhancements
  - Miscellaneous New Tags You Might Have Missed
  - Miscellaneous Function Enhancements
- Part 2
  - Performance Gems
  - Editor Gems
  - Gems Related to Ajax Features, PDF Features
  - Gems Within Other New Features
- Part 3
  - Admin Console Gems
  - Doc Change Gems
  - Platform Support
  - Enterprise vs Standard
  - CF8 Hotfixes
  - Resources for Learning More

About Charlie Arehart

- 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
  - Writer in CFDJ, FAQU, DevCenter, CommunityMX, more
  - Frequent speaker to user groups, conferences worldwide
  - Contributor to Ben Forta's CF8 books, past *ColdFusion MX Bible*
  - Run the Online ColdFusion Meetup (coldfusionmeetup.com)
  - Living in Alpharetta, Georgia (north of Atlanta)
- Web home at www.carehart.org
  - 175+ blog entries, 50+ articles, 70+ presentations, more
  - UGTV: recordings of presentations by over 100 CFUG speakers
  - Consulting: available for troubleshooting, tuning, training
    - AskCharlie: per-minute telephone & web-based CF support

Gems vs Features

- As with each release, there are major features
  - Those shown in product "top 10" lists, marketing materials, focus of conference talks
- But there are also always little hidden gems
  - Don't get as much press
  - Yet sometimes may be the answer to a long-nagging problem
  - Documented in CFML Reference, or Dev Guide
    - Also sometimes more in Release Notes, What's New
- Sometimes, people miss these for years
  - So I like to stress them whenever possible
  - My first CFDJ articles in 1999 were on hidden gems in 4, 4.01
- Are so many in CF8 that we can't cover them all in depth
  - Will try to point out as many as I've gathered
  - Will often point to resources to learn more
    - At least take note if any interest you, and look in the CF8 docs
  - Of course, as time passes, many will no longer be "hidden gems" to most

Coding Gems

Various Coding Gems

- Testing for array element existence
  - Example:
    ```
    <cfset test=arraynew(1)>
    <cfset test[1]=1>
    <cfset test[3]=3>
    <cfoutput>#test[2]#</cfoutput>
    ```
  - Previously, would get an error. How solved?
- Now, new ArrayIsDefined() function
  - Takes arrayname and index to test element's existence
  - Could wrap CFOUTPUT above with:
    ```
    <cfif arrayisdefined(test,2)>…</cfif>
    ```
- ListToArray() – new option to include empty elements

Various Coding Gems (cont.)

- CFLOOP improvements
  - Can now loop over array
    ```
    <CFLOOP Array="#arrayname#"
      name="indexname">
    ```
  - Can loop over File, either per line
    ```
    <cfloop file="c:\simplefile.txt"
      index="line">
    ```
    - Or for a number of characters
    ```
    <cfloop file="c:\simplefile.txt"
      index="chars" characters="12">
    ```
  - http://coldfused.blogspot.com/2007/07/new-file-io-in-coldfusion-8.html (Rupesh Kumar)

Various Coding Gems (cont.)

- Implicit array and structure creation

```
<!--- CFMX7 code --->
<CFSET myArray=ArrayNew(1)>
<CFSET ArrayAppend(myArray, "Adam")>
<CFSET ArrayAppend(myArray, "Ben")>
<CFSET ArrayAppend(myArray, "Tim")>

<CFSET myStruct=StructNew()>
<CFSET myStruct.product="ColdFusion">
<CFSET myStruct.version=8>

<!--- In CF8, you can use this code --->
<CFSET myArray=["Adam","Ben","Tim"]>
<CFSET myStruct={product="ColdFusion", version=8}>
```

  - http://www.forta.com/blog/index.cfm/2007/5/1/Implicit-Array-And-Structure-Creation-In-Scorpio
  - http://www.bennadel.com/blog/740-Learning-ColdFusion-8-Implicit-Struct-And-Array-Creation.htm

Various Coding Gems (cont.)

- Javascript-style operators
  - Following can be used anywhere in CFML
    - `++, --, %, +=, -+, *=, /=, %=, &&, &=, ||, !`
  - Following can be used within CFSCRIPT code
    - `==, !=, <, <=, >, >=`
  - http://www.bennadel.com/blog/741-Learning-ColdFusion-8-All-Hail-The-New-Operator.htm
  - http://www.forta.com/blog/index.cfm/2007/5/1/ColdFusion-And-JavaScript-Like-Operators

Various Coding Gems (cont.)

- Pass tag attributes as collection (attributecollection)

```
<cfset mailAttrs = {
  To = "charlie@carehart.org",
  From = "charlie@carehart.org",
  Subject = "Test Subject"} />
<cfmail attributecollection="#mailattrs#">
  Test message
</cfmail>
```

  - Can't use any other attributes with this
  - Can use for all tags but the following:
    - Cfargument, cfbreak, cfcase, cfcatch, cfcomponent, cfdefaultcase, cfelseif, cffunction, cfif, cfimport, cfinterface, cflogin, cfloginuser, cflogout, cfloop, cfparam, cfprocessingdirective, cfproperty, cfrethrow, cfreturn, cfset, cfsilent, cfswitch, cftry, cfelse
  - http://livedocs.adobe.com/coldfusion/8/htmldocs/help.html?content=Elements_04.html
  - http://www.forta.com/blog/index.cfm/2007/4/29/Using-Scorpio-ArgumentsCollection
  - http://www.bennadel.com/blog/755-Learning-ColdFusion-8-Defining-Tags-With-AttributeCollection.htm

Various Coding Gems (cont.)

- Per Application Settings
  - Until now, CF mappings and custom tag paths had to be set in CF Admin, server-wide
  - Now in CF8, can set for each application, via Application.cfc
  - Feature can be enabled/disabled in Admin (enabled by default)
  - http://www.forta.com/blog/index.cfm/2007/4/24/Scorpio-Per-Application-Settings
- Per-application missing template handler
  - Again, until now, handling requests for missing CFML files required a site-wide missing template handler, in Admin
  - Can now handle per application, with OnMissingTemplate method in Application.cfc
    - Invoked when ColdFusion encounters a file not found condition for requests for CF files (.cfm, .cfc, etc.)
  - http://ray.camdenfamily.com/index.cfm/2007/5/31/ColdFusion-8-Handling-missing-CFM-files

CFDUMP enhancements

- Now provides greater control over what's shown in a dump
- Can indicate which columns of query (or keys in struct) to display:
  - Show/hide attribute accepts column/key list
  - Examples:
    ```
    <cfdump var="#aquery#" show="colA,colB">
    <cfdump var="#aquery#" hide="colX,colY">
    <cfdump var="#astruct#" show="keyA,keyB">
    <cfdump var="#astruct#" hide="keyX,keyY">
    ```
- And how many keys of struct to display:
  - `<cfdump var="#astruct#" keys="4">`
- And whether or not to list UDFs (showUDFs=yes|no)
- http://ray.camdenfamily.com/index.cfm/2007/6/1/ColdFusion-8-Dumping-gets-even-better
- …

CFDUMP enhancements (cont)

- And whether to show output to browser, console, or a file
  - OUTPUT=browser|console|*filename*
    - Defaults to browser
    - Console will be log file if CF running as service, or command line where CF is started
      - Though, see http://blog.mrbuzzy.biz/?p=8
    - Filename should be absolute, or relative to CF Temp dir (see getTempDirectory() for location)
- New FORMAT attribute: HTML or Text
  - Useful when dumping to other than browser

CFDUMP enhancements (cont)

- Dump of query shows a little more data
  - The query's SQL, any cfqueryparm values, the execution time, and whether the query was retrieved from cache
  - http://www.coldfusionjedi.com/index.cfm/2007/6/4/ColdFusion-8-Dumping-a-Query-in-ColdFusion-8
  - To prevent this, use new METAINFO="no"
  - Want to see that in code instead?
    - Use CF 7's RESULT attribute on CFQUERY

Query-related Gems

Various Query-related Gems

- Query Caching enhancements
  - Have had CachedWithin and CachedAfter since 4.0, as well as CFQUERYPARAM
    - But couldn't use them together
    - Finally can in CF8
  - Also, can finally use CachedWithin/After with CFSTOREDPROC
- Auto-Generated key retrieval on insert
  - Accessible via the RESULT struct if defined on CFQUERY
  - SQL Server: IDENTITYCOL
  - MySQL: GENERATED_KEY
  - Sybase: SYB_IDENTITY
  - Informix: SERIAL_COL
  - Oracle: ROWID (id of inserted row, to retrieve rows based on this ID)
  - http://www.forta.com/blog/index.cfm/2007/7/6/ColdFusion-8-Can-Return-Identity-Values

Various Query-related Gems (cont.)

- CFDBINFO lets you get information about data sources
  - database names, tables, columns, stored procedures, indexes, primary & foreign keys, driver version

```
<cfdbinfo type="tables" datasource="exampleapps"
    name="tables">
<cfdump var="#tables#">

<cfdbinfo type="columns" datasource="exampleapps"
    table="employees" name="columns">
<cfdump var="#columns#">
```

  - http://www.forta.com/blog/index.cfm/2007/5/15/Scorpio-Makes-Obtaining-Database-And-Table-Info-Easy

Various Query-related Gems (cont.)

- Apache Derby database embedded
  - Embedded, cross-platform
    - http://www.forta.com/blog/index.cfm/2007/5/28/Scorpio-And-Apache-Derby
    - http://www.forta.com/blog/index.cfm/2007/5/29/More-On-Scorpio-And-Apache-Derby
    - http://steve.coldfusionjournal.com/using_the_derby_database.htm
- Transaction Save points
  - CFTRANSACTION action="savepoint"
  - lets you roll back portions of a transaction
  - Example: http://livedocs.adobe.com/coldfusion/8/htmldocs/help.html?content=Tags_t_09.html

CFC Gems

Component metadata without instantiation

- CFMX 6's GetMetadata can get a component's properties
  - But you must instantiate it first
- CF 8's get<u>Component</u>MetaData instead gets it without instantiating it
  - Also works with interfaces
- Example:
  ```
  <cfset meta =
      getComponentMetaData("CFIDE.adminapi.runtime")>
  <cfdump var="#meta#">
  ```
- http://www.danvega.org/blog/index.cfm/2007/6/5/Scorpio-Functions-GetComponentMetaData
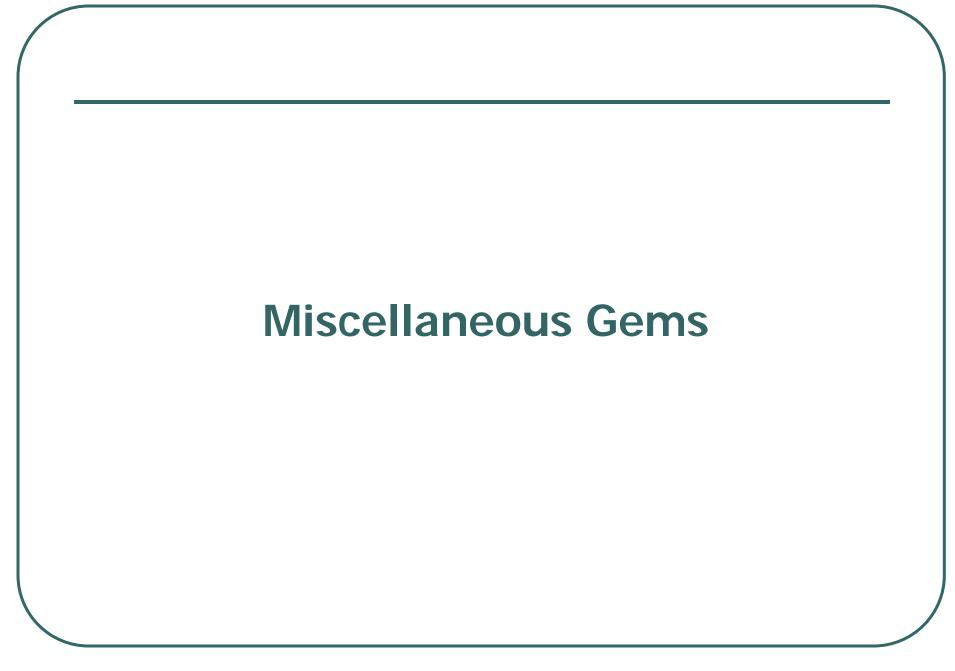
Various CFC Gems

- OnMissingMethod method for CFCOMPONENT
  - lets you handle calls to methods that are not implemented in the CFC
    - definable in any CFC
  - Handle error in CFC itself rather than in calling code
  - http://corfield.org/entry/Another_Scorpio_gem
- CFFUNCTION has new ReturnFormat attribute
  - Controls type of data returned to a <u>remote</u> caller (plain, wddx, json)
    - No effect on format returned to local callers
  - http://www.coldfusionjedi.com/index.cfm/2007/7/5/ColdFusion-8--Return-Format-for-ColdFusion-Components

Various CFC Gems (cont.)

- Can now define CFARGUMENT Type and CFFUNCTION ReturnType as "component"
  - In addition to a specific component name
- CFC Interfaces supported via CFINTERFACE
- IsInstanceOf() – test if a variable holds an instance of a given CFC, interface, or java class
  - http://www.derekperez.com/blog/?p=107
- CFC serialization and ability to duplicate
  - Primarily for use with J2EE session clustering
  - Not everyone's a fan
  - http://corfield.org/blog/index.cfm/do/blog.entry/entry/duplicate_is_bad_for_your_objects_health

WebService Execution Changes

- Ability to refresh Web Service proxy for called web services
  - Previously could flush cached proxy in CF Admin or programmatically
    - http://carehart.org/blog/client/index.cfm/2006/12/12/refreshing_web_services_programmatically
  - Requires Admin access
- New RefreshWSDL attribute in CF8
  - Can now force CF to refresh the WSDL/proxy stub on the call to the web service, doesn't require Admin access
  - Used with CFINVOKE/CFOBJECT/createobject
    - tag attributes, not querystring variables
    - For CreateObject, use in new ArgStruct, where it's an optional key
- wsdl2javaArgs
  - list of arguments to pass to the WSDL2Java tool that generates Java stubs for the web service
- http://carehart.org/blog/client/index.cfm/2007/9/3/cf8_hiddengem_refreshwsdl
- Also new SaveJava option to save java proxy stub source
  - Only available in CreateObject(), as key in ArgStruct
  - Saves in <coldfusion8>\stubs\ under dir for web service
  - http://carehart.org/blog/client/index.cfm/2007/10/11/cf8_hiddengem_createobject_savejava

Miscellaneous Gems

Miscellaneous Tag Enhancements

- New popup calendar in HTML forms
  - CFINPUT type="datefield"
- CFDIRECTORY has some new attributes
  - Listinfo="name|all"
  - Type="file|dir|all"
- CFMAIL
  - Priority attribute
  - useSSL and useTLS attributes
- CFHTTP has new ClientCert, ClientCertPassword attributes
- CFFTP supports Secure FTP (SFTP)

Miscellaneous Tag Enhancements (cont.)

- CFLOCATION now permits you to use 301 statuscode

- CFSCHEDULE Action attribute has new PAUSE value, to pause a specified task
  - Admin also supports this

- CFLOCK has new Request option for Scope

- CFCONTENT change
  - Tries to figure out mime-type if TYPE is not provided

- Several CFDOCUMENT enhancements

Miscellaneous Tag Enhancements (cont.)

- New CFOBJECT attributes for web services
  - password, proxyPassword, proxyPort, proxyServer, proxyUser, userName, and wsportname
  - More later on refreshWSDL and wsdl2JavaArgs

- Change in behavior of CFLOOP QUERY nested within another

- CFSWITCH/CFCASE change in behavior
  - When case value is numeric and could be interpreted as a date

Miscellaneous New Tags You Might Have Missed

- CFZIP
  - ZIP compressed files into an archive file
  - UNZIP extracts files from an archive file
  - LIST lists the contents of an archive file
  - DELETE deletes one or more files from an archive file
  - READ reads the contents of an archived file into a variable
  - READBINARY reads the contents of a binary archived file into a variable

Miscellaneous New Tags You Might Have Missed (cont.)

- CFPRINT
  - Send PDFs to printer accessible to CF Server
  - Related GetPrinterInfo() function
- CFFEED
  - Read RSS and ATOM feeds, write RSS feeds, all very easily
- CFPRESENTATION to create Adobe Acrobat Connect presentations on the fly
  - And note that it can save the presentation to disk (no need for CF, can send to others to view)
- CFTHREAD
- Again, many other new tags not mentioned

Miscellaneous Function Enhancements

- Locale-specific functions have new locale argument
  - DayofWeekAsString, MonthAsString, all the LS... functions
- New encryption functionality
- XMLSearch
  - supports returning any valid XPath result, not just arrays of XML object nodes
- Sleep() – pause a request for x seconds
- GetFileInfo()
- Accepts absolute path to file, returns a struct

Miscellaneous New Functions (cont.)

- REMatch, REMatchNoCase functions
- Arbitrary precision decimal handling with PrecisionEvaluate()
- New security functions
  - GetUserRoles, IsUserInAnyRole, IsUserLoggedIn
- 14 new file I/O functions
- 54 new image functions

Miscellaneous Other Gems

- Multiple user accounts in the CF Admin and for RDS
  - can have fine-grained control over who has access to what
  - also, RDS sandboxing
    - so each different RDS user has access to just selected parts of the file system or just selected datasources
- CF8 includes free (somewhat limited) license of LiveCycle Data Services
- Improved reporting
  - Various Report Builder improvements
  - Support for HTML, XML output (FORMAT attribute)
    - Was PDF, FlashPaper, Excel, and (as of 7.01) RTF
  - New CFREPORTPARAM attributes:

Miscellaneous Other Gems (cont.)

- Clearing template cache no longer an "all or nothing" proposition

- New means to extend the CF Admin menus

- Available Application.cfc welcomefilelist variable

  - Relates only to use of built-in CF web server

  - Names files to look for if no filename provided on a request

- Ability to dynamically build MXML (Flex code) within CFML

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Performance Gems

- General performance improvements
- CF now deployed atop JDK 1.6
  - fixes some past problems, adds some new features
  - adds substantial performance increases
- Dramatic improvement in CFC instance creation
- Dramatic change in file upload (CFFILE Action="upload")
  - Files much larger than 300-400 meg would cripple CF7 and below, because loaded into memory to produce result for gethttprequestdata().content
  - No longer does this (load them into memory)

Performance Gems (cont.)

- Adobe Observations of CF8 over CF7
  - Most applications average 30-40% performance gain
    - some applications 3 or 4 times better
  - Structure manipulation in CF 8 twice as fast as CF 7
  - List manipulation three times faster
  - CFSET more than four times faster
  - CFPARAM tag 35 times faster
  - Date functions about 6 times as fast
  - Regular expression functions more than twice as fast
  - CFC instantiation over 20 times faster

Editor Gems

- Eclipse plug-ins
  - Adding Ajax Application Generation Wizard, Log Viewer, CF Debugger, CF8 help
    - to previous RDS support, query viewer, services browser, Flex/CRUD/CFC/AS wizards
    - Update since release for query viewer on Eclipse 3.3
- CF8 support for Dreamweaver, HomeSite+/CF Studio (tag insight, editors, help)
  - Available on the download page with CF8
- CFEclipse CF8 tag updates coming
- Interactive step debugger

Gems related to Ajax features

- CFGRID Format="html"
  - HTML-based grid (no java, flash)
- CFINPUT Type="autosuggest"
- CFTEXTAREA Richtext="Yes"
- Using CFSELECT for dueling select lists (aka "2 selects related")
- SerializeJSON, DeserializeJSON functions
- Available Verifyclient attribute of CFFUNCTION and related verifyClient function
- Available SecureJSON attribute for CFAPPLICATION

Gems related to Ajax features (cont.)

- Don't miss as well CFDIV, CFLAYOUT, CFPOD, CFWINDOW, and more
  - Features to update only a portion of a page: no full screen refresh
- New Ajaxlink function
  - Used to cause href link destination to show in current control
  - Used with cfdiv, cflayoutarea, cfpod, or cfwindow control
- Note that Ajax features can call either CFML or CFC pages
  - And of course other than CF pages
- Ajax features include option to generate debugging window
  - Add cfdebug=true on querystring (and enable in Admin)

Gems related to Ajax features (cont.)

- Various Spry-related CF integration, including CFSpryDataset
- CFAjaxProxy
  - Creates a JavaScript proxy for a ColdFusion component
- Several features of CFPDF you may not noticed

Gems Within Other New Features

- Server Monitor
- Admin API changes
- CFImage processing includes option to create captchas
- New cfthread scope for use within CFTHREAD code
- New queryConvertForGrid function, use with CFGRID
- New DotNetToCFType function for use with .NET objects

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Admin Console Gems

- New "Request Tuning" section
- New options on "Settings" page
- New Mail security options
- New mail server connection timeout
- New event gateways
- New "Debugger Settings" page (for interactive debugger)
- New "User Manager" page in security section

Doc Change Gems

- See CFML Ref section
  - See "Tag changes since ColdFusion 5" to view what was added in CF8, and 7 and point releases
- Developer's Guide: 18 new chapters

Platform Support

- JDK 1.6 support
- Support for JBoss, Intel Mac, Windows Vista
- 64-bit Solaris support
- Built-in support for Mysql 4/5
- PostgreSQL 8.x support
  - Now ships the org.postgresql.Driver and provides admin configuration
- DataDirect 3.6 JDBC DB driver updates

Enterprise vs Standard (and Dev)

- Some new features are only in Enterprise (or Developer edition)
  - Performance Monitor and its Admin API features
  - Multiple user accounts in the CF Admin and for RDS
  - 64-bit support
- But all tags in CFML work now in Standard
  - Some features formerly in Enterprise only, now available in Std
    - Enterprise Feature Router (EFR) queues requests using such features to run single-threaded
  - Goal is that any CFML app should run on any edition
    - CF7 features: Event gateways
    - CF8 features: PDF stuff, Server-side printing, On-demand presentations, Exchange features, etc.
  - CFTHREAD is limited to two spawned threads

Cumulative Hotfixes Already Available

- CHF1
    - http://www.adobe.com/go/kb402466
- CFH2
    - http://www.adobe.com/go/kb402792
- In both cases, really just a few fixes
    - Should apply only if you're suffering the problems solved

Learning More

- CF8 product page
  - Lots of resources
  - http://www.adobe.com/products/coldfusion/
- CF8 features page
  - Lots of useful info, sometime whole pages on a topic
  - http://www.adobe.com/products/coldfusion/features/
- CF8 Docs
  - http://www.adobe.com/support/documentation/en/coldfusion/
- CF8 Demos
  - http://www.adobe.com/products/coldfusion/demos/
- CF8 Getting Started Experience
  - http://examples.adobe.com/cf8gettingstarted/experience/index_content.cfm
    - Code snippet explorer
      - http://examples.adobe.com/cf8gettingstarted/experience/snippets.cfm
  - Can even now download it for local use
    - http://carehart.org/blog/client/index.cfm/2007/8/29/cf8_gettingstarted_experience

Summary

- Did you learn anything new? ☺
- We covered a wide range of hidden gems
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    - Resources for Learning More
- Again, didn't even discuss all that's new in CF8!

Questions On Presentation

- Interested in the day long class?
  - Contact me
- Charlie Arehart
  - charlie@carehart.org
- I'd really appreciate your feedback
  - http://carehart.org/feedback/
- Also available for troubleshooting, training, consulting
  - Also other developer productivity coaching, system admin and tuning support, and more
  - Remote or on-site
- New Per-minute Phone/Web support
  - http://carehart.org/askcharlie/