- Some general CF migration tips
- Compat issues introduced in CF2023
- Compat issues introduced in CF2021, CF2018, CF2016, CF11
- Migration tools and resources

TOPICS

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- How easy will such a migration be?
  - Of course, will depend on how many CF versions back you're jumping from
    - For some the move may be trivial
    - For others it may seem difficult (but challenges may be over-stated)
    - For most, it will be somewhere in the middle
- Goal of this talk is to help get you over various humps
- Slides: carehart.org/presentations

INTRO   3

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- ▸ I focus on CF server troubleshooting, as an independent consultant
  - ▸ Assist organizations of all sizes, experience levels
  - ▸ Work <u>remotely</u> 99% of the time, safe, secure, easy (via **shared desktop**)
  - ▸ **Solve most problems in less than an hour**, teaching you also as we go
  - ▸ **Satisfaction guaranteed**
  - ▸ More on rates, approach, online calendar, etc at *carehart.org/consulting*
- ▸ But to be clear, I'm not selling anything in this session! ☺
  - ▸ Just sharing my experience, and that of others

ABOUT ME

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- ▶ Errors often blamed on "new CF version", when other reasons are cause…

- ▶ Common problem: failing to bring CF admin/ java settings used in previously

  - ▶ See my talk on migrating/comparing admin settings: *carehart.org/presentations/#migrating_admin*

- ▶ Maybe a CF update was applied but an error occurred. See update install log

  - ▶ carehart.org/blog/client/index.cfm/2016/9/6/solve_common_problems_with_CF_updates_in_10_and_above

- ▶ Maybe the new CF runs on a more recent Java version than you used before

  - ▶ Java 11.0.11 (and 1.8.0_291) both block calls via tls to servers not supporting 1.2 or above

  - ▶ *carehart.org/blog/client/index.cfm/2021/4/26/new_java_updates_for_Java_8_and_11_as_of_Apr_2021*

- ▶ …

DON'T BLAME CF UNFAIRLY

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- ▶ Another common cause: moving to new <u>server</u> as part of "migration"
  - ▶ Having new IP address which other servers don't recognize, such as DB, mail, api, etc
  - ▶ Failing to setup web server in same way it was setup on previous server
  - ▶ Failing to establish file permission changes that had been made on previous server
  - ▶ Changing the OS that CF runs on, or DB, or web server, etc
- ▶ You may find that running PREVIOUS CF version on new box would fail same way
- ▶ On the other hand: consider new version and some updates fix bugs
  - ▶ Something that didn't work before may work now
  - ▶ Pay attention to release notes, known issues

DON'T BLAME CF UNFAIRLY (CONT.)

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- New/changed features in CF2023 covered elsewhere
  - CF docs, of course (CFML Reference, Developer Guide, What's new)
  - Blog posts from CF Team, at time of each release, at CF Portal: *coldfusion.adobe.com*
  - My "Hidden Gems" talks for each release, at *carehart.org/presentations*
    - I cover language changes, as well as install, admin changes
    - Also underlying library version changes, OS and DB support, licensing/pricing, differences between Ent & Std, and more
  - Ben Nadel post on languages changes in recent releases to cf2021: *bit.ly/3BGso02*
  - Akbarsait has for years offered lists of community resources on each release, last:
    - *akbarsait.com/cf2021tutorials.cfm* and earlier ones listed on his site's right toolbar

WHAT WE WON'T COVER 7

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COMPAT ISSUES INTRODUCED IN CF2023

8

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- Regarding CFHTMLtoPDF, note that CF2023 implements new PDF engine
  - PDFReactor, a commercial tool that Adobe has licensed for us
- Mostly enables NEW capabilities, not breaking existing functionality
  - (none I am aware of or have heard of)
  - It does add NEW capabilities to CFHTMLtoPDF and related tags
- Does NOT affect use of CFDocument, to be clear

PDF ENGINE CHANGE IN 2023

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- Otherwise, seems a pretty smooth transition to CF2023 <u>from CF2021</u>
  - Nothing seemingly deprecated or "retired" as of CF2023 (as we will see in others)
  - *helpx.adobe.com/coldfusion/deprecated-features.html*
- See also the release notes "known issues"
  - *helpx.adobe.com/coldfusion/release-note/coldfusion-2023-release-notes.html#known-issues*
- CF2023 Update 5 and CF2021 update 11 (Oct 2023)
  - Changed to block access to CF Admin from other than CF's built-in web server
  - New installer for CF2023 (and 2021) released at same time, including Oct updates
- FWIW, updates 1-4 and 6 are security updates only
- If you're moving from CF2021, you're done!
  - Rest of talk may inform you of issues in past versions you missed

SMOOTH UPGRADE FROM CF2021 TO 2023

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COMPAT ISSUES INTRODUCED IN CF2021

(If moving from CF2018 or earlier, or from early update of CF2021)

11

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- Dateformat mask of capital "D" now honored as meaning "day in year"
  - Previously, it was no different than lower-case "d": for day in month
  - Huge difference, if you may have code using D or DD, which will now produce very different result
- Example: dateformat("11-23-20","MM-DD-YY")
  - In 2018 and before, produces 11-23-2020
  - In 2021, produces instead 11-328-2020

- Example: bit.ly/3m3sLdR
- *carehart.org/blog/client/index.cfm/2020/11/24/breaking_change_in_cf2021_dateformat_D_vs_d*
- …

DATEFORMAT CAPITAL "D" ISSUE

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- Available fix made available in late Nov 2020, then folded into CF2021 Update 1 (in Mar 2021)
  - Requires you to add a JVM argument to REVERT back to regarding capital "D" same as "d"
  - -Dcoldfusion.datemask.useDasdayofmonth=true
- Or here's a regex to search for using an editor or search tool:
  - l?s?(dateformat|datetimeformat)(.*?)[""](.*?)[DY]{1,10}(.*?)[''"]
  - (?i)date(?-i)(.*)\(.*(DD\/).*\)|(?i)date(?-i)(.*)(?i)date(?-i)(.*)\(.*(DD-).*\)|(?i)date(?-i)(.*)\(.*(\/DD).*\)|(?i)date(?-i)(.*)\(.*(-DD).*\)|(?i)date(?-i)(.*)\(.*(D\/).*\)|(?i)date(?-i)(.*)\(.*(D-).*\)|(?i)date(?-i)(.*)\(.*(\/D).*\)|(?i)date(?-i)(.*)\(.*(-D).*\)

- *carehart.org/blog/client/index.cfm/2020/12/7/cf2021_hotfix_datemask_compatibility_issue*

DATEFORMAT CAPITAL "D" ISSUE (CONT.)

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- **Removed:**
  - Corba integration
  - LCDS integration
  - Flex integration
  - Flashpaper type for cfdocument, cfpresentation
  - cfschedule onmisfire="fire_now"
- Seemingly nothing deprecated or "retired" as of this release

OLD FEATURES REMOVED IN CF2021

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- ▸ "static" is now a reserved word, at least as variable name in a CFC
    - ▸ Will get error, "*Cannot Assign Value to variable named static*"
    - ▸ To allow it, add *staticSupport="false"* to component definition
    - ▸ Problem does not apply to use of static as struct in key, nor as a variable in a cfm
    - ▸ See *adobe.ly/3k4KFOm*
- ▸ See also Jim Jurista's brief article covering migration issues from CF2016 to CF2021
    - ▸ *medium.com/@jjurista/common-issues-when-migrating-to-coldfusion-2021-4c8fa3c8121b*
- ▸ Bonus tip (I will add one of these tips for each past version)
    - ▸ CF2021 has lifted Enterprise requirement for CF Security Code Analyzer
    - ▸ See coldfusion.adobe.com/2021/07/coldfusion-security-analyzer-works-with-standard-and-developer/

OTHER COMPAT ISSUES IN CF2021

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- Two updates to CF2021 introduced changes and some bugs that lingered
  - CF2021 update 2 (Sep 2021) and CF2021 update 5 (Oct 2022)
  - Some were fixed with hotfixes (if you search tracker.adobe.com for the problem)
  - Some were fixed in CF2021 update 11 (Oct 2023)
    - Updates 6-10 (and 12) were solely security updates (which cumulatively include previous)
  - Some of these were fixed in CF2023
- Consider the helpful (and little-known) "update release notes"
  - Yes, there is a technote for EACH update, and a single doc listing all CF2021 updates
  - This instead offers key changes made in each CF2021 update:
    - *helpx.adobe.com/coldfusion/release-note/coldfusion-2021-updates-release-notes.html*

COMPAT ISSUES DUE TO CF2021 UPDATES

COMPAT ISSUES INTRODUCED IN CF2018

(If moving from CF2016 or earlier, or from early update of CF2018)

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- **cfqueryparam**/**cfprocparam** fail if undocumented **cfsqltype** abbreviation used
  - **CF_SQL_int** should instead be **CF_SQL_integer**
  - **CF_SQL_DateTime** should be **CF_SQL_date**, _time, or _timestamp
  - **CF_SQL_Num** should be **CF_SQL_Numeric**
  - *And so on*
  - This applies also to queryexecute use of queryparams, for instance:
    - queryexecute ("select * from art where artid=:id",{id="1", cfsqltype="CF_SQL_Integer"},{datasource="cfartgallery"})
- Before this, such invalid values were ignored, treated as cf_sql_string
- These changes were also rolled into CF2016 as of its last update, 17, in Mar '21

CFSQLTYPE ABBREVIATION CHANGES

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- As part of new OO support: ***abstract***, ***function*** *and* ***final*** are now reserved words
  - Also **null**, if CF null support is enabled
- If you have code using those as variables, function names, etc., will have conflicts/errors
  - You may think you don't use these, but frameworks might
  - ColdSpring does use both abstract and function as variables (as in coldspring\aop\framework\AopProxyUtils.cfc)
- You must carefully find and replace those variable names, properties
  - May not want to do global replace, as you may have text that shouldn't be replaced
  - Could just run through code and fix those which get errors, but that's risky, too

NEWLY RESERVED WORDS IN CF2018

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- Some items removed:
  - *cfschedule's timeout* attribute (used in creating a new task)
    - can add *cfsetting requesttimeout* to page being called (if under your control)
  - *cfcache's cachedirectory* and *timeout* attributes
  - *cfcollection's map* and *repair* values for **action** attribute
  - *cferror's monitor* and *option* values for **type** attribute
- Some features "*retired*" (not enabled by default)
  - Most rarely used (flash remoting, flash-based UI elements, xml forms, blazeds, lcds, AIR, CF actionscript functions, CORBA, portlets, etc.)
- …

FEATURES REMOVED/RETIRED IN CF2018

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- Also "retired" are UI tags based on YUI javascript library, used by tags like:

  - *cfmenu*, *cftree*, *cftooltip*, *cfcalendar*, *cfinput* (*autosuggest* attribute), *cfinput* (*sourcefortooltip* attribute)

  - These **will not work** out of the box with 2018 and above, but **you can re-enable them**

    - was also true as of CF2016 update 3 and per installer starting in Dec 2016

  - To re-enable these, you can copy needed (but very old) YUI library files back into CF

    - See bottom of deprecated features page for files, steps

    - *helpx.adobe.com/coldfusion/deprecated-features.html*

FEATURES REMOVED/RETIRED (CONT.)

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- Changes per CF2018 updates which may conflict with existing code:
  - Update 1 added new getCanonicalPath(), used previously as a var in Fusebox
  - Update 4 added new fileAppend()
- Again, see the helpful *helpx.adobe.com/coldfusion/release-note/coldfusion-2018-updates-release-notes.html*
- Bonus tips:
  - CF2018 introduced PMT (Performance Monitoring Toolset)
  - Semi-colons now optional in cfscript

OTHER COMPAT ISSUES IN CF2018

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COMPAT ISSUES INTRODUCED IN CF2016

(If moving from CF11 or earlier, or from early update of CF2016)

23

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- JSON datatype preservation: now inferred at compile time, rather than runtime
  - New jvm arg to disable that: -Dcoldfusion.literal.preservetype="false/true"
    - Must also clear previously compiled CF files in cfclasses
  - *adobe.ly/3w7PjQI*
- CFCollection ignores PATH attribute, uses path defined in CF Admin
- Update 2 adds new metadata support for setting json datatypes
- Update 3 added new isValid(), queryGetResult(), structToSorted() functions
- Update 7 added new getCanonicalPath(), used previously as a var in Fusebox
- Update 11 added new fileAppend()
- *helpx.adobe.com/coldfusion/release-note/coldfusion-2016-updates-release-notes.html*

- Bonus tip: CF2016 introduced option for storing sessions in Redis

ONLY A FEW COMPAT ISSUES IN CF2016

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COMPAT ISSUES INTRODUCED IN CF11

(If moving from CF10 or earlier, or from early update of CF11)

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- CF11 Update 3 re-enabled long-dormant CFProcparam **DBVARNAME**
  - Had been ignored since CF6 (except briefly in 7.0.1)
  - Problem: some DBs now require prefix to dbvarname value
    - (":" for Oracle and "@" for SQLServer)
  - You may have old code that just says dbvarname = "param1" which would now fail
    - For SQL Server (as example), should be dbvarname = "@param1"
  - While a jvm arg was added at the time to revert this, that was NOT carried into CF2016 and above
  - *coldfusion.adobe.com/2015/07/coldfusion-11-and-dbvarname-attribute/*

RESURRECTION OF DBVARNAME

- Cfchart changed underlying engine (from greenpoint to zing)
  - No longer uses XML for extensibility, but json instead
  - Tool provided with CF to assist in in that conversion
    - cfusion/bin/cfchart_xmltojson (bat/sh)
- New strict number validation: if true (default), results of numeric validations (in tags, functions, return from methods) fail if value is not truly numeric
  - Settable in cfapplication or application.cfc: strictNumberValidation

BREAKING CHANGES IN CF11

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- With CF11, Adobe started obsoleting things that were just deprecated before
  - Mostly old attributes of some tags
    - More at blog post from that time *bit.ly/2ZU1yEE*
  - But also some tags: cfgraph, cfservlet, cftextinput
  - And deprecated many more things (meaning *could be removed in the future*)
  - Again, see deprecated features page for details
    - *helpx.adobe.com/coldfusion/deprecated-features.html*

FEATURES REMOVED IN CF11

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- Full support for cfscript (can optionally code entirely without tags)
- CF11 added new CF Admin page to view Secure Profile's 20 settings
- Also, some things formerly Enterprise-only <u>ARE now available in Standard</u>
  - CF archive (car) mechanism (to move CF admin settings from server to server)
  - Security Sandbox (to lockdown what code in different directories can do)
  - HTML5 charts
  - Web socket limit lifted

BONUS TIPS IN CF11

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- CF11 update 11 broke any use of an /api folder off the root of your site
  - CF now uses that (like /rest folder) for REST feature
  - CF2018 changed it, however, to /cfapiresources instead
- No single "update release notes" page for CF11
  - But again each update had a technote, and single page points to all
  - *helpx.adobe.com/coldfusion/kb/coldfusion-11-updates.html*
  - That same url works for each version, just change 11 to 10, 2016, 2018, etc.

COMPAT CHANGES IN CF11 UPDATES

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MIGRATION TOOLS AND RESOURCES

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- CF Admin: Code Compatibility Analyzer
  - In Debugging & Logging section
  - Identifies many but not ALL compat issue (eg, doesn't find cfsqltype issue in 2018)
- Adobe created CFFiddle, at cffiddle.org
  - Can test code against CF2023, 2021, and 2018 (each at their latest update)
  - See also trycf.com, supporting all 3 CF versions and Lucee 4/5 as well
- Docker images available for CF2023, CF2021, CF2018 can aid in testing
- Ortus Commandbox (and images) as another alternative to installing CF
  - *ortussolutions.com/products/commandbox*

MIGRATION-ORIENTED TOOLS

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- Note that Adobe also offers a "Migration Guide" PDF…
  - *adobe.ly/3bDlVbl*
  - But most of the doc is about installation, configuration, administration settings
- Again, the deprecated features page in docs
  - *helpx.adobe.com/coldfusion/deprecated-features.html*
- And CF docs offer more on new and changed language features
  - Both the "CFML Reference" and "Developing ColdFusion Applications"
- Also, I can help: something of CF "reference librarian"
  - I also help folks understand and resolve problems, whether migration or other
- …and one last reason to motivate migration to CF2023…

MIGRATION-ORIENTED RESOURCES

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- When does/did public support (providing updates) end, for each recent version?
  - For CF2023, in 2028
  - For CF2021, in 2025
  - For CF2018, ended in Jul 2023
  - For CF2016, ended in Mar 2021
  - For CF11, ended in 2019
- *helpx.adobe.com/support/programs/eol-matrix.html*

END OF LIFE/SUPPORT OF VERSIONS

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- ▸ I've shared in this talk problems that became widely known
  - ▸ Any number of other issues in past or yet to come may also affect migration
- ▸ You should always check the Adobe CF bug tracker site, *tracker.adobe.com*
  - ▸ Note that you do need to login to use it, even just to search it
  - ▸ Don't search using the box at the top, click the "search" menu item
  - ▸ In that search form, choose "coldfusion" as the product
  - ▸ Then put your search term in the "title" field first, and assess those results
  - ▸ Then put your search term in the "description" field, and assess those results
- ▸ If you vote for or comment on a bug, you'll get notified of future replies/fixes

FINDING STILL MORE ISSUES

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- ▶ Lots of migration issues to beware in any move, especially from older versions
    - ▶ A problem you hit may not be "new" to CF2023 but some version you skipped
    - ▶ Or may be due to move to new server, or failing to bring in config settings
- ▶ Again, for some migration to 2023 is trivial; for others difficult, most in middle
    - ▶ Hope this talk has opened your eyes, to be better prepared, whatever version
    - ▶ I can help in understanding, resolving issues, and more
- ▶ My contact info for follow-up:
    - ▶ Charlie Arehart
    - ▶ charlie@carehart.org
    - ▶ @carehart (Slack, Github, X, Fb, Li, Skype, etc.)
    - ▶ Slides: carehart.org/presentations

SUMMARY

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