MIGRATING APPS TO COLDFUSION 2021
FROM EARLIER VERSIONS

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TOPICS

- Compat issues introduced in CF2021
- Compat issues due to CF2021 updates
- Compat issues introduced in CF2018
- Compat issues introduced in CF2016
- Compat issues introduced in CF11
- Compat issues introduced in CF10
- Migration tools and resources
How easy will such a migration be?
- Of course, will depend on how many CF versions back you’re jumping from
- Either way, for some the move may be trivial
  - for others it may seem difficult
  - For most, it will be somewhere in the middle

What we won’t cover
- What language features are new/changed in CF2021, and each release
  - See Ben Nadel post on languages changes in recent releases: bit.ly/3BGso02
  - See also my “Hidden Gems” talks for each release, at carehart.org/presentations
    - I cover language changes, as well as install, admin changes, underlying library version changes, OS and DB support, licensing/pricing, differences between Ent & Std, and more
Approximately 99% of the time, safe, secure, easy (via shared desktop)
COMPAT ISSUES INTRODUCED IN CF2021
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
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”

Or here’s a regex to search for using an editor or search tool:

- `l?s?\[(dateformat | datetimeformat)\]\\('["]\)\1\2[\D]{1,10}\3["']\]`

- `(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4|(?i)date(?-i)\1\2\3\4`

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

DATEFORMAT CAPITAL “D” ISSUE (CONT.)
OLD FEATURES REMOVED IN CF2021

- **Removed:**
  - Corba integration
  - LCDS integration
  - Flex integration
  - Flashpaper type for cfdocument, cfpresentation
  - cfschedule onmisfire="fire_now"

- Seemingly nothing deprecated or "retired" (as we will see in others)
“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

Bonus topic (I will add one of these for each version, a tip that may help you)
  ▶ CF2021 has lifted Enterprise requirement for CF Security Code Analyzer
COMPAT ISSUES DUE TO CF2021 UPDATES

- CF2021 update 2 (and CF2018 update 13) came out in Sep 2021
  - Both introduce a bug in query of queries
  - Fixed with a special hotfix jar, available from Adobe (hf202100-4212383.jar)
    - Fix is due to be included in next major CF update
COMPAT ISSUES INTRODUCED IN CF2018
As part of the new OO support: \textit{abstract, function} and \textit{final}

- And \texttt{null}, if null support enabled

If you have code using those as variables, etc., will have conflicts/errors

- You may think you don’t use these, but frameworks might
- ColdSpring does use both \texttt{abstract} and \texttt{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
- `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
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.)

...
Also “retired” are UI tags based on YUI javascript library, used by tags like:

- `cfmenu`, `cftree`, `cftooltip`, `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 just copy needed YUI library files back into CF
  - See bottom of deprecated features page
  - [helpx.adobe.com/coldfusion/deprecated-features.html](http://helpx.adobe.com/coldfusion/deprecated-features.html)
- Good news: semi-colons now optional in cfscript
- Bonus: CF2018 introduced PMT (Performance Monitoring Toolset)
COMPAT ISSUES INTRODUCED IN CF2016
ONLY A FEW COMPAT ISSUES IN CF2016

- 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
  - [https://adobe.ly/3w7PjQI](https://adobe.ly/3w7PjQI)
- CFCollection ignores PATH attribute, uses path defined in CF Admin
- MS Access: workarounds from 10/11 to enable it no longer work
  - That said, some find Access working even in CF2021
- Bonus: CF2016 introduced option for storing sessions in Redis
COMPAT ISSUES INTRODUCED IN CF11
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/
BREAKING CHANGES IN CF11

- Cfchart changed underlying engine (from greenpoint to zing)
  - No longer uses XML for extensibility, but json instead
  - Tool provided with CF to assist 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
- 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
With CF11, Adobe started obsoleting things that were just deprecated before

- Mostly old attributes of some tags
  - More at blog post from that time https://bit.ly/2ZU1yEE
- But also some tags: cfform, 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
- Good news: Full support for cfscript (can optionally code entirely without tags)
- Bonus: CF11 added new CF Admin page to view Secure Profile’s 20 settings
- Also, some things formerly Enterprise-only ARE now available in Standard
  - 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
COMPAT ISSUES INTRODUCED IN CF10
COMPAT ISSUES IN CF10

- CF 10 removed Verity search engine, replaced with Solr
- Web services changed to support version 2, can change back to v1
  - See Admin-, application-, and code-level options to change wsversion, etc
- Bonus: CF10 added “secure profile”, which can enable 20 admin settings
  - These might impact how your app runs, if someone implements it during CF install
MIGRATION TOOLS AND RESOURCES
MIGRATION-ORIENTED TOOLS

- CF Admin: Code Compatibility Analyzer
  - In Debugging & Logging section
- Adobe created CFFiddle, at cffiddle.org
  - Can test code against CF2021, 2018, and 2016 (each at their latest update)
  - See also trycf.com, supporting all 3 CF versions and Lucee 4/5 as well
- Docker images available for CF2021, CF2018 can aid in testing
  - Consider also Ortus Commandbox (and images) as another alternative to installing CF
  - ortussolutions.com/products/commandbox
Again, the deprecated features page in docs
  - helpx.adobe.com/coldfusion/deprecated-features.html

Note that Adobe also offers a “Migration Guide” PDF…
  - adobe.ly/3bDlVbl
  - But most of the doc is about installation, configuration, administration settings

See CF docs for more on new and changed language features
  - Both the “CFML Reference” and “Developing ColdFusion Applications”
  - Also blog posts from CF Team, at time of each release, at CF Portal: coldfusion.adobe.com

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 CF2021...
When does/did public support (providing updates) end, for each recent version?

- For CF2021, in 2025
- For CF2018, in 2023
- For CF2016, ended in Mar 2021
- For CF11, ended in 2019

helpx.adobe.com/support/programs/eol-matrix.html
Beware that sometimes people assert a new CF version “broke something”…

- But perhaps it is also a move to a new OS, or a new box
  - Maybe the ip address changed and some server you call is not allowing access
  - You may even find that running your CURRENT CF version on new box would show same error
- Maybe some configuration of the CF Admin or web server was not “brought over”
  - Key items include max heap size, template cache size, and more
  - 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
- And so on
We’ve seen how sometimes one update will fix issues in an earlier update
- On moving to CF2021, generally best to apply latest update
- Update 2 (Sep 2021), as of this presentation in early Nov 2021

Note that a new CF2021 installer was also offered at the same time
- It comes with update 2 and Java 11.0.11 pre-configured

Finally, admin changes (in each release) can affect how your CFML app runs
- Similarly, new features can enable doing more/better things, so consider them also
- Again, see my “hidden gems” talks for each release to see all that was new in each
Lots of migration issues to beware in any move, especially from older versions

A problem you hit may not be “new” to CF2021 but some version you skipped

Again, for some migration is trivial, for others difficult, most in the middle

I hope this talk has opened your eyes, to be better prepared, whatever version

I can help in understanding, resolving issues, and more

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SUMMARY