

MIGRATING APPS TO COLDFUSION 2021 FROM EARLIER VERSIONS



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- ▶ 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

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
 - ▶ 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

SOME OPENING POINTS

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- ▶ I focus on CF server troubleshooting, as an independent consultant
 - ▶ Assist organizations of all sizes, experience levels
 - ▶ Work remotely 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, 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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- ▶ Before sharing specifics of each version, there are generic matters, such as:
 - ▶ A new CF version may add **a new keyword, scope, or function**
 - ▶ Your existing code using that already may fail, not always in an obvious way
 - ▶ Could be code in some framework you use. For instance:
 - ▶ CF2018 added keywords like final, abstract, used previously as vars in ColdSpring
 - ▶ CF2016 u7/CF2018 u1 added getCanonicalPath, used previously as var in Fusebox

GENERIC ISSUES

COMPAT ISSUES INTRODUCED IN CF2021

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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

▶ **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)

OLD FEATURES REMOVED IN CF2021

- ▶ “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/3k4KF0m
- ▶ 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
 - ▶ See coldfusion.adobe.com/2021/07/coldfusion-security-analyzer-works-with-standard-and-developer/

OTHER COMPAT ISSUES IN CF2021

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- ▶ CF2021 update 2 (and CF2018 update 13) came out in Sep 2021
 - ▶ Both introduce a bug in query of queries
 - ▶ tracker.adobe.com/#/view/CF-4212383
 - ▶ Fixed with a special hotfix jar, available from Adobe (hf202100-4212383.jar)
 - ▶ Separate one available for CF2018
 - ▶ Fix is due to be included in next major CF update

COMPAT ISSUES DUE TO CF2021 UPDATES

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COMPAT ISSUES INTRODUCED IN CF2018

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- ▶ As part of the new OO support: **abstract**, **function** and **final**
 - ▶ And **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 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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- ▶ **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

CF_SQL... ABBREVIATION CHANGES

- ▶ 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 just copy needed YUI library files back into CF
 - ▶ See bottom of deprecated features page
 - ▶ helpx.adobe.com/coldfusion/deprecated-features.html

FEATURES REMOVED/RETIRED (CONT.)

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- ▶ Good news: semi-colons now optional in cfsript
- ▶ Recall point about how some new things can conflict with existing code:
 - ▶ Update 1 added new `getCanonicalPath()`, used previously as a var in Fusebox
 - ▶ Update 4 added new `fileAppend()`
- ▶ Bonus: CF2018 introduced PMT (Performance Monitoring Toolset)

OTHER COMPAT ISSUES IN CF2018

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COMPAT ISSUES INTRODUCED IN CF2016

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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
 - ▶ <https://adobe.ly/3w7PjQl>
- ▶ 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
- ▶ 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()`

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

ONLY A FEW COMPAT ISSUES IN CF2016

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COMPAT ISSUES INTRODUCED IN 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

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- ▶ 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

BREAKING CHANGES IN CF11

- ▶ 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: 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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- ▶ 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

OTHER COMPAT ISSUES IN CF11

COMPAT ISSUES INTRODUCED IN CF10

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- ▶ 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

COMPAT ISSUES IN CF10

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MIGRATION TOOLS AND RESOURCES

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- ▶ 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
 - ▶ ortusolutions.com/products/commandbox

MIGRATION-ORIENTED TOOLS

- ▶ 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/3bDIVbl
 - ▶ 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
- ▶ See also Jim Jurista’s brief 2023 article covering some migration issues from CF2016 to CF2021
 - ▶ <https://medium.com/@jjurista/common-issues-when-migrating-to-coldfusion-2021-4c8fa3c8121b>
- ▶ 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 ...

MIGRATION-ORIENTED RESOURCES

- ▶ 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

END OF LIFE/SUPPORT OF VERSIONS

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- ▶ 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

WHEN MIGRATION PROBLEMS ARE NOT CF ISSUES

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- ▶ 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

OTHER POINTS TO CONSIDER

- ▶ 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
- ▶ My contact info for follow-up:
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 - ▶ Slides: carehart.org/presentations

SUMMARY