SOLVING COMMON PROBLEMS WITH CF UPDATES

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Updated Apr 16, 2024

Slide deck:
carehart.org/presentations

- CF update fundamentals, and some things you may miss
- Some common update challenges
- Troubleshooting CF updates
- Some gotchas to beware
- Some best practices
- Some bonus topics
- Resources with more info

- In this talk, I'm focusing only on supported versions, CF2025, 2023, & 2021
  - But nearly everything will apply to earlier releases back to CF10

TOPICS

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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! ☺

- Again, slides for talk available online:
  - *carehart.org/presentations*

ME.ABOUT()

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- Before we focus on problems, let's level-set our understanding about CF updates

- First, there are three ways to perform updates, each with pros/cons:

    - Admin update page

    - Command line update installer (java –jar)

    - CFPM update installer (new in CF2021)

- Quick demos

- Note that update technote discusses all 3 approaches (more on technotes soon)

- Note: those running Commandbox or CF containers/docker images can point to an "updated" CF version, no *need* to "update" CF yourself this way

CF UPDATE FUNDAMENTALS

- Once you start a CF update, what happens?
  - A java process launches the update installer, can watch in Task Manager, etc.
  - That attempts to stop the CF service and related services
  - Then it tries to back up the files that will change per the update
  - Then it tries to lay down files reflecting the update (across many CF folders)
  - Then it tries to download any package updates
  - Then it attempts to start CF and related services
  - Then it writes an update log (more on this later)
  - Finally that first startup of CF tries to implement any updated packages
- Technically, being "cumulative", each update does more and more
  - As it backs up then lays down all the files changed across all previous updates

WHAT DOES "UPDATE" DO?

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- CF2021 introduced support for "packages" (aka "modules")
  - CF functionality broken into about 50 of them
  - Intention is that in some deployments, you may opt to not install some package(s)
- If you update CF, that updates the packages by default
  - We need to take that into account in solving some "update problems" (more soon)
- Can view them at bottom of CF "Package Manager" page
  - Top of page shows "core" update info (for updating CF itself)
  - Bottom shows "installed" and "available" packages
- Each one can be clicked to see more details, control its version
  - Beware a gotcha that I will discuss more later today

WHAT'S THIS ABOUT CF "PACKAGES"?

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- URL is shown on that CF Admin "Package Manager" page "Settings" tab
  - *https://www.adobe.com/go/coldfusion-updates*
  - Note that that does a redirect
    - *https://cfdownload.adobe.com/pub/adobe/coldfusion/xml/updates.xml*
  - Xml file that lists details for each update of CF2025, 2023, 2021, 2018, & 2016
  - When you download an update in CF admin, the resulting jar in CF's *bundles/updateinstallers* folder
- Package updates URL, unique to each version of 2025/2023/2021, such as:
  - https://www.adobe.com/go/**cf2025**_packages
  - Which redirects to:
    - https://cfmodules.adobe.com/**cf2025**/bundlesdependency.json
- Important to note these for later troubleshooting of download failures
  - URL values stored in CF's *cfusion\lib* folder as neo_updates.xml
  - When I refer to "cfusion", that would be "yourinstancename" if you run multi-instance

WHERE ARE UPDATES DOWNLOADS FOUND?

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- CF updates can contain one or more:
  - Security fixes
  - Bug fixes
  - Feature changes (tags, functions, admin, etc.)
  - Feature additions
- Again, this is important to be aware of when assessing some "update problems"
- These are identified in each update's "technote"…

"WHAT'S IN YOUR UPDATE?"

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- Each update has a technote

  - Listed in the CF Admin update interface

  - Also available online, linked to from various resources about each update

- Very important to read update technotes

  - **Let's review one** to see what the several sections they typically contain

- URL is such that you can modify it to view any update in any CF version

  - *helpx.adobe.com/coldfusion/kb/coldfusion-2025-update-1.html*

- Still easier way to find CF update technotes…

THE VITAL CF UPDATE "TECHNOTE"

- Page listing all updates for each release

  - *helpx.adobe.com/coldfusion/kb/coldfusion-2025-updates.html*

  - *helpx.adobe.com/coldfusion/kb/coldfusion-2023-updates.html*

  - *helpx.adobe.com/coldfusion/kb/coldfusion-2021-updates.html*

- "Release notes" page, summarizing key changes in updates for each release

  - *helpx.adobe.com/coldfusion/release-note/coldfusion-2023-updates-release-notes.html*

  - *helpx.adobe.com/coldfusion/release-note/coldfusion-2021-updates-release-notes.html*

  - No cf2025 version of this document yet

UPDATE TECHNOTES (CONT.)

- ▸ Just updates can be installed, they can be uninstalled
  - ▸ Can again be done in the CF Admin "Package Manager" page
  - ▸ Or there is an uninstall folder within the hf-updates folder for the update
    - ▸ Can run *java –jar uninstaller.jar* at command line (as admin/root)
- ▸ As with update install, the uninstall will also restart CF
- ▸ Uninstalling an update always reverts to previous update you had installed
  - ▸ Leverages that "backup" folder created during update
- ▸ Also downgrades packages to their version appropriate to that update
  - ▸ Which will be performed on startup following the uninstall

UNINSTALLING UPDATE

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SOME COMMON UPDATE CHALLENGES

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- As technotes indicate at top of each, <u>CF updates are **cumulative**</u>
  - You can "skip" to the latest one you want to apply, if you're behind
  - You do NOT need to apply them one-at-a-time (but you can)
- But either way, when you do this YOU MUST consider each update's technote
  - If something noted/warned about in an update you skip, it's NOT repeated later
- And some updates DO introduce <u>major</u> changes, such as:
  - The March 2024 update changing default for implicitscopesearch
  - The June 2024 update changing default use of cfmx_compat algorithm
  - The October 2024 update which was a bug fix AND feature update
  - And so on

ON "SKIPPING" UPDATES (IF YOU'RE BEHIND ON DOING THEM)

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- CF Admin does indicate when updates are available, via icon in top right
  - But that is done via CF admin setting allowing "auto check for updates"
  - See "settings" tab at top of "package manager" page in CF Admin
- Note also option there for email notification (hidden gem!)
  - Can configure who email is sent to, from, how often that checks
  - Uses mail server settings from traditional "Server Settings>Mail" page of CF Admin
- Adobe also announces CF updates on CF Forum
  - *community.adobe.com/t5/coldfusion/ct-p/ct-coldfusion*
- Pete Freitag offers commercial "HackMyCF" service (*hackmycf.com*)
- Adobe Security team offers email notification of any security updates (any product)
  - *adobe.com/subscription/adbeSecurityNotifications.html*

HOW CAN YOU KNOW AN UPDATE HAS BEEN RELEASED?

- It may be that for security, the CF server can't access internet
  - Or perhaps CF itself (or the java process launched by update) cannot
- Or maybe simply can't access Adobe server holding updates
  - Recall the URLs for downloads offered previously
- Note that CF update mechanism does have support for configuring "proxy"
  - Offered on that "Package Manager" page's "Settings" tab
- But if no internet access is allowed, update attempt would fail
  - Need to do manual cf update…

WHAT IF SERVER HAS NO NET ACCESS?

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- Instead you would download the update jar file (link offered in technote)
  - Do that on another server, and upload/place the update jar file on CF server
  - CF would normally put that in CF's *bundles\updateinstallers* folder
- And if this or any skipped updates entail package updates, download them also
  - Technote offers link for that, as a zip file, with instructions to extract that somewhere
  - And then to set the "package site url" (in admin or neo_updates.xml file) to name that
    - Should point that to the bundlesdependency.json file in the extracted zip
    - A normal CF update would download that and the zip's files to *bundles* folder under CF
- Can then run the update manually, at command line, using:
  - *Java –jar* command pointing to the downloaded jar file
  - Or CF's cfpm command-line tool, found in *cfusion\bin* folder
- Again see update technote for details (and CF doc link offered at end here)

MANUAL CF UPDATE

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- ► Recent challenge, affecting CF2021 and above
  - ► Sometimes the package updates done will lead to need to "clear" felix-cache
- ► This is a folder within the *cfusion\bin* (or *yourinstance\bin*) under CF folder
  - ► To "clear" it, simply stop CF, delete the folder (no need to save it), then start CF
  - ► CF will automatically recreate the folder and populate it
- ► I'm of the opinion we should all just do this after each update
  - ► Consider that the update you're applying may not entail package updates
    - ► But one(s) you're skipping may have!
  - ► And though some technotes list certain problems that call for doing this
    - ► I've seen some problems solved by doing this, but technote didn't indicate a known issue

CLEARING FELIX-CACHE

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TROUBLESHOOTING CF UPDATES

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- The first thing to look for after an update is its install log

  - In *hf-updates* folder, under *cfusion* in your CF folder

  - New folder created for each update applied, such as:

    - C:\ColdFusion2025\cfusion\hf-updates\hf-2025-00001-331420

  - We're pointed to the folder after update completes, and on package manager page

- Two files created: hotfix_filelist.log and install log, in format such as:

  - Adobe_ColdFusion_2025_Update_1_Install_04_09_2025_09_47_43.log

- What to look for? …

FINDING THE UPDATE INSTALL LOG

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- Update success or failure
  - See about line 75 of the install log, table counting "successes" and "fatalerrors"
- Package update downloads
  - Near bottom of install log, a line will indicate if package updates downloaded
- Post-update CF startup package update installation
  - In coldfusion-out.log (or console if CF run from command line), see startup log lines
  - If an update downloaded package updates, will see uninstall logged (not install)
- Watch out also in those startup log lines for any other errors

CHECKING FOR UPDATE ERRORS

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- Various things can cause update failure
  - If update was unable to stop CF, then it will hold lock on files to be modified
  - If update could not access the Adobe download site, update will fail to start
  - If package update download failed (bottom of install log), packages may get borked
- Sometimes, CF admin will fail to run, reporting "administrator" package not installed
  - That error will suggest running "cfpm install administrator" in *cfusion\bin* folder
- In some rare cases, CF won't start
  - Would need to solve the error and try the update again
  - Or may need to run update from command line (see previous discussion)

WHY MIGHT UPDATE FAIL?

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- If CF is running as a service, with the user other than "local system"
  - When update launches java process to do update, that will try to stop CF
    - It will launch as the user running CF
  - If that user running CF is not "local system", it won't have authority to stop CF
    - So update will fail
- One solution is to run the update from the command line (as discussed)
- Another solution is to give that user permission to stop/start CF services
  - Great free Windows tool for that, Service Security Editor from Core Technologies
  - Demo

A COMMON PROBLEM RUNNING UPDATE IN ADMIN

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SOME OTHER GOTCHAS TO BEWARE

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- Recall that update install process does backup whatever files will change
- Sometimes Adobe may offer a "special hotfix" jar to solve some problem
  - That would be placed in the *cfusion\lib\updates* folder
  - More: *coldfusion.adobe.com/2019/11/how-to-implement-a-special-cf-hotfix/*
- Each update thinks it should REMOVE any such special hotfixes
  - Does back them up, in that *backups* folder in *cfusion\hf-updates* folder of an update
- If you need to recover that special hotfix jar, find it in that *backups* folder
  - And return it to the *cfusion\lib\updates* folder, then restart CF

RECOVERING SPECIAL HOTFIX

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- It may warn that doing that will cause "core" CF to be upgraded or downgraded
  - If the package version is out of sync with the core version
- Many people don't notice it warning of that, so they proceed
  - And unexpectedly find CF itself has been updated, or update has been uninstalled!
- And then issues like error during update, not having cleared felix-cache can arise
- **Quick demo**

BEWARE WHEN UPGRADING OR DOWNGRADING A PACKAGE

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- When running update from command line, may start CF as process vs svc
- Beware changing "packageurl" to perform one update: impact on next one
- Do you "need to use the jvm installed with CF", if installing from command line?
- Server protection software may block successful install of update

STILL MORE GOTCHAS TO BEWARE

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1) While update is running, open and watch Windows services:
   - Should go down, stay down (while doing backup), then come up
2) After update, check update install log (table at about line 75)
   - And check bottom of that log for whether package updates downloaded
3) Then check coldfusion-out.log for log lines tracking CF startup after update
4) If you had previously implemented a special hotfix that's still needed:
   - You can recover it from the hf-update folder "backup"
   - Put it back in *cfusion\lib\updates*, and it will be re-implemented on next CF start
5) Even if all seems well, stop CF and delete the felix-cache folder
6) Start CF, again watching the startup log lines for any unexpected errors

SOME BEST PRACTICES

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- *ColdFusion202**
  - *Bundles* (where package updates lay down their jars)
    - *updateinstallers* (where CF admin downloads update jars, since CF2021 update 2)
  - *cfusion* (or your *instancename*)
    - *bin* (where *cfpm* is found)
    - *felix-cache* (the folder that should be "cleared" after each update)
    - *hf-updates* (where each update you apply creates a folder with its logs, backups)
    - *lib* (where CF install and update lays down some of its jars)
      - *updates* (location where each CF update lays down a CHF*.jar)
        - and where you'd place special hotfixes

REMINDER ON FOLDERS RELATED TO UPDATES

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- Updating the CF web server connector (wsconfig)
  - *carehart.org/cfupdate/#wsconfig*
- Updating the JVM that CF uses
  - *carehart.org/cfupdate/#java*
- Updating the CF PMT (monitor in CF2018 and above)
  - *carehart.org/cfupdate/#pmt*
- On updating the Tomcat underlying CF
  - *carehart.org/cfupdate/#tomcat*

BONUS TOPICS

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- Adobe update docs page
  - *helpx.adobe.com/coldfusion/using/coldfusion-package-manager.html*
- Forum post on an update:
  - *community.adobe.com/t5/coldfusion/ct-p/ct-coldfusion*
- *carehart.org/blog/2016/9/6/solve_common_problems_with_CF_updates_in_10_a nd_above*

RESOURCES

- Sometimes people hit a problem they just can't easily solve
  - Or they just want someone else to "do the updates" for them/with them
- I'm available to help
  - On a short-term basis; remotely, via screenshare
  - With satisfaction guaranteed or you won't pay for the time
- And I can of course help with about any CF-related challenge
- For more, see *carehart.org/consulting*

IF YOU MAY WANT DIRECT HELP…

- We should be careful to keep CF updated
  - If done carefully, it's a few minute job
  - If there's trouble, usually there's a simple resolution
- Again, my contact info for follow-up:
  - Charlie Arehart
  - charlie@carehart.org
  - @carehart (Slack, Github, X, FB, LinkedIn, etc.)
  - Slides: carehart.org/presentations

- With that, hope you enjoyed the talk!
  - Use QR code for slide deck
- ...time for questions?

SUMMARY