MIGRATING OR COMPARING CF ADMIN SETTINGS
BETWEEN INSTANCES, VERSIONS, AND ENGINES

Charlie Arehart
charlie@carehart.org, @carehart

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HAVE YOU EVER WANTED TO...

- Migrate all admin settings to initially setup an instance, based on another?
  - Or migrate SOME but not all admin settings?
- Compare settings, to identify differences between instances?
- How would you do these?
- May want to do these between:
  - One CF version and another (like CF11 and CF2018)
  - One CF instance and another, whether on one machine or another
  - A CF instance and a Lucee instance
- ...

charlie@carehart.org
@carehart
Will demo these today, with tips, warnings, best practices

- **Migration “wizard”** offered at end of CF installer, on first launch of CF Admin
- **ColdFusion Archive (CAR) feature**
- **CFConfig** (via CommandBox—even for other than “box” instances)
- **CFSetup** (new in CF2021)
- And finally **a special treat**, to help with comparing settings two ways
  - Cross-platform tool able to handle even CF’s wddx-formatted XML files
  - And of course, it can handle comparing your code, logs, and any text

- Presentation slides (including demo steps) available after session at my site

**TODAY’S DEMOS**
MIGRATING CF ADMIN SETTINGS

With “traditional” tools
- Runs optionally, if installer detects previous version on same machine
  - Demo
  - Logs: migration.log, migrationexception.log in CF logs folder
- Can also be triggered to run again later (details in blog post, docs)
  - carehart.org/blog/client/index.cfm/2014/11/11/import_cfadmin_settings_anytime_using_import_wizard
  - In brief:
    - copy neo*.xml files from previous release to a particular folder in destination instance
    - modify adminconfig.xml in dest instance, telling it to re-run the wizard
    - log into/refresh dest CF Admin, which will trigger running it again
  - Demo
Can be used anytime, to export out/import in CF Admin settings

- Offered in CF Std and Enterprise since CF11 (Enterprise-only before that)

- Note: may need to enable popups, in browser

- Demo

- How CAR file is really just a zip

- Logs: car.log in CF logs folder, and one for each export or import

- Docs on CAR and Migration “Wizard”
WHAT NOT TO DO: COPY NEO*.XML FILES BETWEEN INSTANCES

- This is a shortcut some have taken, and others even recommend
- Generally a bad idea
  - Especially if done between versions of CF (format, features change)
  - But even between SAME CF version
What about passwords?
- Stored in encrypted form (in neo*.xml files, and in CAR)
- Decrypted by CF using seed (stored in seed.properties file) that’s different between instances
- CAR and migration features are designed to handle this, but do beware…
  - coldfusion.adobe.com/2020/07/importance-of-securing-car-files/

File paths
- Some imported settings may have version-number references
- CAR and migration features designed to handle this on migration to new version number

CONSIDERATIONS ABOUT MIGRATION
Beware regarding JVM args

- Some that “worked” in one instance/version/machine may not work on import to another
  - Perhaps specific to a given Java version
  - Or literally the path to Java itself (if changed from CF’s default)
  - JVM args supporting a tool not implemented for new instance (such as FusionReactor)
- Beware that such problems won’t be exhibited until CF is restarted, which you may not think to do after import/migration

Security-oriented settings

- Some might reduce security of the instance to which they are being migrated
- Since CF2016, CAR and migration features designed to handle, log this

CONSIDERATIONS ABOUT MIGRATION (CONT.)
Some Best Practices

- Before an import, consider backing up the files that would change, typically:
  - Neo*.xml files (in cfusion/lib, or [instancename]/lib)
  - Jvm.config (in cfusion/bin, or [instancename]/bin)
- After import, do a restart, to confirm that CF CAN restart
  - If not, check what changed
  - See the migration/car import logs
  - Compare things to the backup made in step 1
- Demo: using BeyondCompare to compare neo XML files
  - You may feel “any text compare tool” can do that
  - Check out optionally downloadable “format” called “xml sorted”
    - scootersoftware.com/download.php?zz=moreformats
MIGRATING CF ADMIN SETTINGS

With “modern” tools
Again, is a tool that works with CommandBox
- You may not know of that: open source from Ortus Solutions
- May know CommandBox as a REPL for CFML
- May know it also as a way to easily start, manage instances of CF, Lucee

CFConfig is a “module” (also open source) you can add to Commandbox
- Note that it works NOT ONLY with “box” instances you may create
- But **can be pointed to config file folder for ANY CF or Lucee instance**
  - Whether **running or not** (technically, can be a copy of settings folder from elsewhere)

Can export or import, even ACROSS engines (CF to Lucee, or vice-versa)

More: forgebox.io/view/commandbox-cfconfig
- ortussolutions.com/blog/introducing-cfconfig-a-new-way-to-manage-your-cf-servers-configuration-from-the-command-line

...
Download and extract Commandbox (box executable), if not yet installed
  ▶ Box executable, available for Windows, MacOS, Linux

Implement cfconfig module
  ▶ `box install commandbox-cfconfig`

Can run cfconfig commands, using `box cfconfig <command>`
  ▶ Or can run `box`, THEN run `cfconfig` (or other box commands)

Naming a `from` (or `to`) arg that names folder holding config settings
  ▶ For CF, folder with lib/neo-runtime.xml file, so for example C:/ColdFusion2018/cfusion
  ▶ For Lucee web context: folder with lucee-web.xml.cfm file, eg `<webroot>/WEB-INF/lucee`
  ▶ For Lucee's server context: folder with `/context/lucee-server.xml` file, eg `/opt/lucee/lib/lucee-server`

**RUNNING CFCONFIG**
Running cfconfig (Cont.)

- Commands:
  - cfconfig help
  - cfconfig show all settings
  - cfconfig export or import all settings, to/from a json file
    - Can’t export only “some” settings, but can edit the json to include only what you want
    - Can export from one engine, then import that into another, or...
  - cfconfig transfer all settings, directly from one instance/engine to another
  - cfconfig show or set individual settings
  - cfconfig list, save to, delete from grouped settings (like dsn’s, mappings, etc)
  - ...

charlie@carehart.org
@carehart
Some examples:

- `cfconfig show from=C:\ColdFusion2018\cfusion`
- `cfconfig show property=requesttimeout from=C:\ColdFusion2018\cfusion`
  - Or can leave off argnames:
  - `cfconfig show requesttimeout C:\ColdFusion2018\cfusion`
  - `cfconfig show requesttimeout C:\lucee\tomcat\lucee-server`
  - `cfconfig show from=C:\lucee\tomcat\webapps\ROOT\WEB-INF\lucee`
- `cfconfig set requesttimeout=0,0,0,61 to=C:\ColdFusion2018\cfusion`
  - Would need to restart CF to take effect
- `cfconfig export cf2018config.json C:\ColdFusion2018\cfusion`
  - `cat cf2018config.json`
  - `edit cf2018config.json`
- `cfconfig import cf2018config.json C:\ColdFusion2016\cfusion`
- `cfconfig transfer C:\ColdFusion10\cfusion C:\ColdFusion2018\cfusion`
- `cfconfig transfer C:\ColdFusion10\cfusion C:\lucee\tomcat\lucee-server`

RUNNING CFCONFIG (CONT.)
Works much like CFConfig (though obviously just for CF, within CF2021)
- Though it does work WITH CF admin setting config folders for CF2018 and earlier
- Not to be confused with CF2021 package mgt tool, CFPM

Found in CF2021's config\cfsetup folder (not cfusion)

Like cfconfig, offers several commands:
- help
- show all settings, or all in a category of settings
- show category, to see all categories for settings
- export, import all settings, or all in a category, to/from a json file
- get, set, add, delete individual settings (within named categories)
Like cfconfig, can enter cfsetup as a CLI, then enter commands, such as:

- `show all C:\ColdFusion2021\cfusion`
- Or simply `show all cfusion`
- `export all cf2021.json cfusion`
- Or
  - `alias cf cfusion`
  - `show all cf`
  - `export all cf2021.json cf`
- Or
  - `Select cf`
  - `Show all`
  - `export all cf2021.json`
- Again, works even with CF2018, 2016, 11, and 10, in my testing
  - `show all C:\ColdFusion2018\cfusion`
Like the CF CAR feature, the CF2021 cfsetup tool stores encrypted pw’s
- FYI: Commandbox CFConfig tool export any password as plain text
- Like CAR, decryption key and algorithm are stored with the export file
  - Used during import process to decrypt any pw’s, then import them
- Can also create a passphrase while exporting with CFsetup
  - Which must be known in order to import the exported settings
- Take due care with all such files, if they include settings with pw’s
  - Again, see my post on protecting CAR files
    - coldfusion.adobe.com/2020/07/importance-of-securing-car-files/

PASSWORDS IN EXPORT FILES
Automated configuration of Adobe CF Docker images

- Supports import of CAR files, if placed in `/data` folder within image/volume
- Supports `setupscript` environment variable, naming CFM file to use Admin API
- CF2021 supports `importCFSettings` env var, naming json file created with cfsetup
  - `importCFSettings` for naming a passphrase for importing cfsetup export file, if set
  - `installModules` env var, naming modules to be implemented

Commandbox Docker images for CF or Lucee

- Supports `cfconfigfile` env var, naming json file created with cfconfig
- And still more: [hub.docker.com/r/ortussolutions/commandbox/](https://hub.docker.com/r/ortussolutions/commandbox/)
COMPARING CF ADMIN SETTINGS

Several, perhaps surprising ways
Compare using two browser screens, going page by page in Admin
Better: comparing CF Admin “Settings>Settings Summary” page
  - Again, either on two browser screens
  - Or as a pdf: note button on that page, to create a PDF
Or ...

“TRADITIONAL” APPROACHES
Better still: use BeyondCompare (or any compare tool)
  ▶ Use “select all” in browser on “settings summary” content
    ▶ Paste text from two instances on line 1 within BeyondCompare
  ▶ Can easily see admin differences between one instance and another
    ▶ Even between one CF version and another!

Demo

FIRST “SURPRISING” APPROACH
Commandbox CFConfig `diff` command

- `cfconfig diff from=D:\ColdFusion2016\cfusion to=D:\ColdFusion2018\cfusion`
- Can add `--valuesdiffer`, to see only the differences
  - Note when comparing two engines/versions:
    - If one engine/version has a given setting, but the other does not, not shown in `--valuesdiffer`
    - See available `--fromonly` and `--toonly` args, to help with that
- Can also save diff as a “report” (html or PDF), adding:
  - `HTMLReportPath`=folder/file.html or
  - `PDFReportPath`=folder/file.pdf
  - And more
  - `cfconfig diff from=C:\ColdFusion10\cfusion to=C:\ColdFusion11\cfusion pdfreportpath=diff.pdf`
Again, many ways to do migration and comparison of CF/Lucee Admin settings

- Migration:
  - CF "migration wizard" on first-run of admin, or as configured to re-run
  - CF CAR file mechanism
  - Commandbox CFConfig
  - CF2021 cfsetup

- Comparison:
  - Browser
  - Beyondcompare
  - CFConfig diff

- Reach out to me with questions (see bottom right)