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

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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
- ...

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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** (coming in CF2020, already demonstrated publicly by Adobe)
- 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
FIRST-LAUNCH “MIGRATION WIZARD”

- 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
COLDFUSION ARCHIVE (CAR) MECHANISM

- 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
CONSIDERATIONS ABOUT MIGRATION

- 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…

- 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 (CONT.)

- 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
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

SOME BEST PRACTICES
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

CFCONFIG: PERHAPS A “SURPRISE”
- 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`
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)

...
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`
Coming in CF2020, again already demonstrated publicly by Adobe
- Works much like CFConfig (though obviously just for CF, indeed just CF2020)
- Not to be confused with CF2020 package mgt tool, CFPM

Found in CF2020'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)

**CFSETUP (IN CF2020)**
Like cfconfig, can enter cfsetup as a CLI, then enter commands, such as:

- `show all C:\cf2020beta\cfusion`
- `export all cf2020.json C:\cf2020beta\cfusion`
- `alias cf C:\cf2020beta\cfusion`
- `show all cf`
- `export all cf2020.json cf`

- `Select cf`
- `Show all`
- `export all cf2020.json`

*Show all* even works with CF2018, CF11 (not CF10 or earlier)

```
show all C:\ColdFusion2018\cfusion
```
Unlike the CF CAR feature, both the CF2020 cfsetup tool AND the Commandbox CFConfig tool export any password as plain text.

Take due care with the exported json files, if they include settings with pw's.
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
- CF2020 supports `importCFSettings` env var, naming json file created with cfsetup
  - `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
  - CF2020 cfsetup

- Comparison:
  - Browser
  - Beyondcompare
  - CFConfig diff

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