How the Adobe CF Docker Images Have Evolved

Charlie Arehart
@carehart
charlie@carehart.org

Updated: 11/16/2022

Topics

- **Some introductory topics, to set the stage**
- **How the CF2021 images were improved over CF2018/2016**
  - **Size, Modularity, Configurability, and more**
- **How the CF2021 images have changed since their initial release**
- **How the CF2018 images have changed also**
- **How the CF PMT and API Manager images have evolved**

@carehart
charlie@carehart.org

Me.about()

- **Independent consultant, helping folks troubleshoot CF issues**
  - **As well as installation, admin/config, migration, tuning, containerization**
- **Long-time community contributor**

@carehart
charlie@carehart.org

Who is this talk for?

- **Speaking to those using Adobe CF containers**
  - **Those using images for Lucee or Commandbox (for CF or Lucee) may benefit**
- **We'll assess how the ACF images have evolved since intro in 2018:**
  - **How they work**
  - **How they can be configured**
- **Not an intro to using Docker, why to use it, etc.**
  - **Should help you get started, or help you work better if using them already**
- **Not an overview of ALL the capabilities of these CF images**
  - **I've done talks at previous Summits introducing the CF images**
- **Presentation slides available at carehart.org/presentations**

@carehart
charlie@carehart.org

Finding more about CF Docker images

- ***helpx.adobe.com/coldfusion/using/docker-images-coldfusion.html***
- **Resources from others (myself, David Beyers, Dan Skaggs, Pete Freitag, others)**
  - ***carehart.org/blog/client/index.cfm/docker***
  - ***coldfusion.adobe.com/tagpage/?tag=Docker***
  - ***carehart.org/ugtv/list.cfm?search=docker***
  - ***github.com/carehart/awesome-cf-compose***
  - ***cfswarm.inleague.io***

@carehart
charlie@carehart.org

Finding the Adobe Docker images

- **All are available via DockerHub:**
  - ***hub.docker.com/u/adobecoldfusion***
- **Also makes available via Amazon ECR:**
  - ***gallery.ecr.aws/adobe***
- **Adobe offered them only via jFrog bintray May 2018-Sep 2021**
  - **Ignore references to images starting with** eaps-docker-coldfusion.bintray.io
- **Let's take a look at those image repositories**

@carehart
charlie@carehart.org

What's offered there

- **We saw that those registries offer (for CF2021 and CF2018):**
  - **CF images**
  - **CF Addons (Solr, PDFg/cfhtmltopdf support)**
  - **PMT (monitor)**
  - **API Manager**
  - **API Manager addons**
- **Repository for each of those; tags for each update Adobe offers**
- **Docs there include discussion of tags, environment vars, more**
- **Much more help again at that earlier Adobe docs page**

@carehart
charlie@carehart.org

Initial demos

- **Let's run some basic examples of each ACF image, for context**
- **I'll be using docker compose files**
  - **Can use Dockerfile's if desired/when needed**
  - **Don't worry if you've never seen them or have never used Docker**
  - **All of them available online: *github.com/carehart/awesome-cf-compose***
    - **Many more there which I won't be showing today**
- **Quick demos: CF, CF PMT, API Manager**

@carehart
charlie@carehart.org

Implementing or pointing to CFML code

- **Adobe CF images offer an** /app **folder within container**
  - **Can copy code into image using Dockerfiles (or** docker cp**)**
  - **Can use bind mounts or volumes, whether pointed to in:**
    - **Compose file**
    - **Dockerfile**
    - **Command line (**`docker run`**)**
  - **This talk can't elaborate on those options, since not new/different**

@carehart
charlie@carehart.org

Other ways to run Docker images

- **I ran them via VS Code and its Docker extension**
- **But you could run them (and the images) from:**
  - **Command line (**docker run **, or** kubectl **for Kubernetes)**
  - **Portainer or Docker Desktop as alternative mgt UIs**
  - **Kubernetes manifests (which can also be managed from all 3)**
    - **Tool to convert compose to Kubernetes at *kompose.io* (free and cross- platform)**
- **Can run Docker images locally or via cloud solutions, such as:**
  - **AWS, Azure, Google Cloud Platform, Digital Ocean; each offer many ways**
- **Can also use them in CI/CD processes, and much more**

@carehart
charlie@carehart.org

How the images have evolved

How CF2021 images improved over CF2018

- **Size**
  - **For CF2018 and 2016**
    - **About 600mb**
  - **For CF2021**
    - **About 200mb … because …**

@carehart
charlie@carehart.org

How CF2021 images improved over CF2018: **Modularity**

- **CF2021 offers new flexible modularity (however CF is deployed)**
  - **By default, cf2021 images has only a few core modules**
  - **CF2021 gui installer implements ALL modules**
    - **cf2021 zip install approach also has only a few core modules**
- cfpm **script added in CF2021, to manage/identify modules**
  - **Can use it to list/listall, install/uninstallmodules, etc.**
  - **Can even use it to scan your code and identify needed modules**
  - **Can create a file listing modules to export**
  - **These can be used with docker images, as I will show in a moment**
  - **Quick demos**

@carehart
charlie@carehart.org

How CF2021 images improved over CF2018: **Modularity** (cont.)

- **CF2021 docker images allow automation of module selection**
- installModules **(comma-separated list of modules, or** all**)**
- importModules **(file listing them, placed within image in** /app**)**
- **Quick demos**

@carehart
charlie@carehart.org

How CF2021 images improved over CF2018: **Configurability**

- **Modularity controls what CF can do**
  - **Configurability is about how CF Admin settings are managed**
- **CF2021 offers a new mechanism for this, as we will see**
- **But first, CF has long offered a CAR import feature**
  - **CF Docker images have supported this since release (CF2021, 2018, 2016)**
  - **You would place CAR file into image's** /data **folder**
- **Let's look at the compose file**
- **…**

@carehart
charlie@carehart.org

How CF2021 images improved over CF2018: **Configurability**

- **All 3 docker image versions also offer** setupScript **env var**
  - **To name a cfm, to be placed in image's /app folder**
  - **Most likely use of this is to call CF adminAPI**
  - **Quick demo**
- **But CF2021 CF Docker images offer new mechanism**
- **…**

@carehart
charlie@carehart.org

How CF2021 images improved over CF2018: **Configurability** (cont.)

- **Indeed, CF2021 offers new** cfsetup**, to manage CF admin settings**
  - **Script built into CF2021, or can be downloaded from Adobe CF downloads page**
  - **Can be used with ANY CF version (back to CF10)!**
  - **Can view/manage CF admin settings from CLI; export/import via json file**
  - **More: see my talk from Sep 2022 on "Using Adobe's 'new' CFSetup tool"**
    - ***carehart.org/presentations#cfsetup_tool***
- **New in CF2021 image are env vars to import json at container startup**
  - importCFSettings **(json file of settings from cfsetup, placed in image's** /app **folder)**
  - importCFSettingsPassphrase **(if set in *cfsetup*)**
  - **Quick demo**

@carehart
charlie@carehart.org

CF2021 image changes since initial release

- **The first CF2021 image was released with CF2021 in Nov 2020**
  - **Since then, CF2021 has received 5 updates (*helpx.adobe.com/coldfusion/kb/coldfusion-2021-updates.html)***
  - **And each CF2021 image gets a new version with each such CF update**
  - **Recall how I showed those appear in Dockerhub, ECR repos as a new "tag"**
- **Updates 1, 2: addressed bugs with the CF2021, addons images**
  - **Update 2 made CF path within container same between cf2018 and 2021**
- **And more …**

@carehart
charlie@carehart.org

CF2021 image changes since initial release

- **The CF2021 image for update 2** (2021.0.2) **added new env vars**
  - DeploymentType**,** Profile**,** allowedAdminIPList, **corresponding to CF installer features/choices**
  - **FWIW: an early version of** 2021.0.2 **had the first 2 as** **setDeploymentType, setProfile**
- **CF2021 update 3 had no documented docker-related bug fixes**
  - **But IMAGE was updated (tag** 2021.0.3**) to fix failing** deploymentType **env var**
- **Update 4 addressed log4j vulns in CF2021 AND in the CF2021 image**
  - **As well as the CF2021 addons image**
- **Update 5 had no docker-specific fixes, but new image created a month later, 11/11/22**
- **Current dockerhub tags**
  - **For** coldfusion2021 **image:** 2021.0.5, 2021.0.4, 2021.0.3, 2021.0.2
  - **For** coldfusionaddons2021 **image:** 2021.0.3**,** 2021.0.2

@carehart
charlie@carehart.org

CF2018 image changes since initial release

- **CF2018 image released first in 2018, along with CF2016 images**
  - **Again, when CF2018 was updated (15 so far), image updated using new tag**
  - ***helpx.adobe.com/coldfusion/kb/coldfusion-2018-updates.html***
- **CF2016 images no longer supported/offered since CF2021 release**
- **Again, have been some bugs fixed in CF2018 images since their initial release**
  - **Update 11, 12 addressed bugs similar to CF2021 docker, addons images**
  - **Update 14 addressed log4j vulns in CF2018, and its image and addons image**
  - **Update 15 had no docker-specific fixes, but new image created a month later, 11/11/22**
- **The CF2018 image for update 2** (2018.0.2) **had added new env vars:** serial**,** previousSerial
  - **Incorporated into later CF2021 release also, of course**
- **Current dockerhub tags**
  - **For** coldfusion2018 **image:** 2018.0.15, 2018.0.14, 2018.0.13, 2018.0.12
  - **For** coldfusionaddons2018 **image:** 2018.0.1, 2018.0.0

@carehart
charlie@carehart.org

CF PMT image changes since initial release

- **CF PMT and API Manager have also been updated since release**
  - **With new images and tags for them**
  - **4 updates so far for CF2021 PMT, 5 for CF2018 PMT**
- **No DOCUMENTED bugs fixes for CF2021 or 2018 images; but one change**
  - 2021.0.4 **and** 2018.0.5 **added new** password **env var (to change default password,** admin**)**
    - **Adobe updated these images without changing tag; you may need to** pull **to get that updated version**
    - **(FWIW: default username, which is** admin**, cannot be changed)**
- **Image tags for** pmt2021 **image:** 2021.0.4 **(and** 3 **and** 2**)**
  - **For** pmt2018 **image:** 2018.0.5 **(and** 4 **and** 3**)**

@carehart
charlie@carehart.org

CF API Mgr image changes since initial release

- **For API Manager, 1 update (no changes related to Docker images)**
  - **Image tags for** apimanager2021 **image:** 2021.0.1 **(and** 0.0**)**
  - **For** apimanager2018 **image:** 2018.0.1 **(and** 0.0**)**
- **For API Manager addons images, no updates at all since release**
  - apimanageraddons2021:2021.0.0
  - apimanageraddons2018:2018.0.0

@carehart
charlie@carehart.org

Some concluding topics (as time allows)

CF licensing: elephant in the room

- **Just like CF itself, use of Adobe CF images is free for development**
  - **Many do use containers for development/exploration, rather than production**
- **Deploying ACF images for production will require licensing**
  - **Adobe states container licensing to be:**
    - **For CF Enterprise, can deploy 8 containers**
    - **For CF Standard, each container must be licensed**
    - **More: *coldfusion.adobe.com/2019/03/coldfusion-licensing-docker-containers***

@carehart
charlie@carehart.org

Some other issues

- **For now, the ACF images support only 64-bit AMD, not ARM/M1**
  - **Ortus CommandBox images for ACF (and Lucee) ARE offered as M1**
- **You may wonder how images differ (CF, Lucee, Commandbox)**
  - **I did a presentation on this at IntotheBox 2022**
  - **Covered many more aspects about using CF images, contrasting them**
  - **Recording available to ITB attendees or *cfcasts.com* subscribers**
  - **PDF at *carehart.org/presentations***

@carehart
charlie@carehart.org

All these images are Linux images

- **This will be obvious/old info to those using Docker already**
- **To those new to Docker:**
  - **This does NOT mean you "can't run the images in Windows"**
  - **Docker Desktop for Windows or Linux VMs could run these**
    - **WSL (Windows Subsystem for Linux) is yet another way to run Linux and Docker**
- **As for CFML running on Linux…**
  - **Beware case-sensitivity of file names**
  - **Otherwise most would never notice CF is running "on Linux"**
    - **Just as how many don't notice/realize CF is running on Java**

@carehart
charlie@carehart.org

Again, finding more help

- **Recall the earlier resources I shared**
  - **CF docs page, resources (blogs, presentations) from myself and others**
- **No particular community focuses on any CF docker images**
  - **Normal places for support help in wider cf community**
  - **See *cf411.com/cfcommhelp***
- **Of course I can help directly, free to a point, or via consulting**

@carehart
charlie@carehart.org

Summary

- **Adobe CF images have evolved, especially with CF2021**
  - **Improvements in things such as size, modularity, configurability**
- **Also each of the images have evolved since their initial release**
- **See any of many resources I've shared for more**
  - **On using CF and Docker in general**
  - **Or on these new features added to CF2021 and CF2018 Docker images**
- **With that, enjoy the rest of the online CF Summit!**
- **Time for questions?**

@carehart
charlie@carehart.org