

MATLAB in Containers

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Agenda

- Why use containers?
- Using MATLAB in a container
- Licensing MATLAB containers

Why use containers?

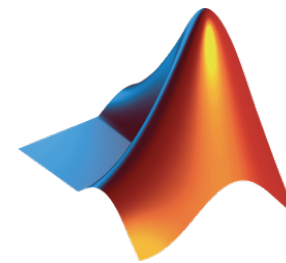
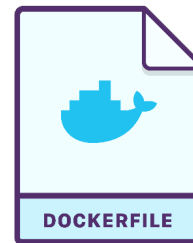
Common Container Use Cases

- CI/CD   **Jenkins**  **Travis CI**
- Scale to Cloud   **Azure**  **Alibaba Cloud** 
- Integration with other systems 

Using MATLAB in a Container

MATLAB Container Offerings

- MATLAB Container on Docker Hub
- Deep Learning Container on NGC
- MATLAB Dockerfile
- Package standalone app into Docker



MATLAB Container on Docker Hub

- A simple, lightweight container that just contains MATLAB
- Useful to get MATLAB running in a container quickly
- Drawbacks: only contains MATLAB, no other MathWorks products or toolboxes
- Available on Docker Hub



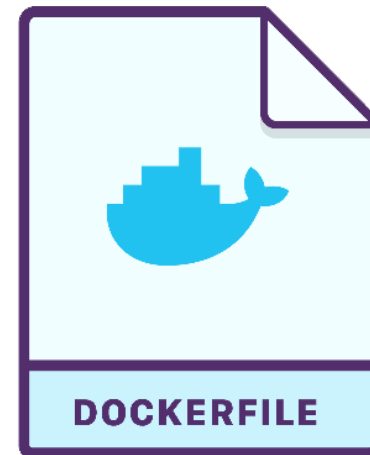
Deep Learning Container on NGC

- A large container that includes MATLAB, Statistics Toolbox, Deep Learning Toolbox, other deep learning oriented toolboxes and several pretrained neural nets
- Great for deep learning
- Drawback: very large (~10 GB)
- Available on NVIDIA GPU Cloud



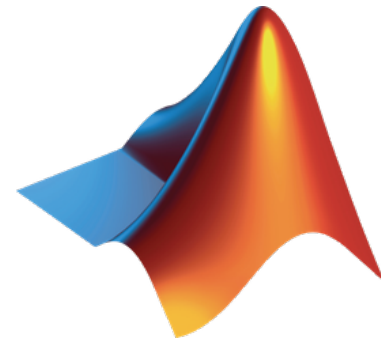
Dockerfile on GitHub

- Not a container image. Rather, a Dockerfile and instructions to help you build your own
- Very flexible: can be used to create a MATLAB container with any set of MathWorks products within
- Drawback: not as easy to set up as a prebuilt image
- Available on GitHub



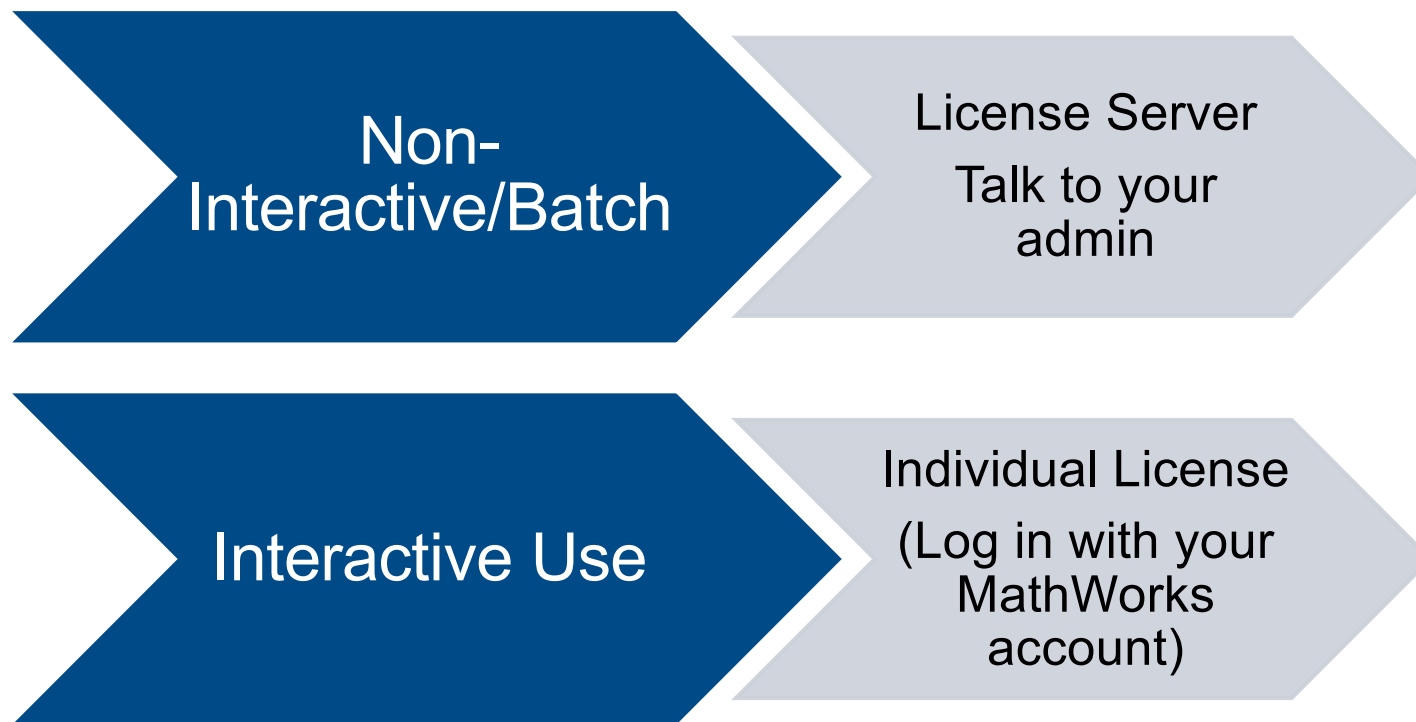
Package standalone app into Docker

- Not a container image, but a feature in MATLAB that lets you package a MATLAB app straight to a container
- Great way to get something made with MATLAB into a small container
- Drawback: not an actual MATLAB installation, need to repackage whenever you make changes
- Available in MATLAB Compiler SDK



Licensing MATLAB Containers

MATLAB Licensing in a Container



Summary

Where to find containers

- Just MATLAB: <https://hub.docker.com/r/mathworks/matlab>
- Deep Learning: <https://ngc.nvidia.com/catalog/containers/partners:matlab/tags>
- Dockerfile: <https://github.com/mathworks-ref-arch/matlab-dockerfile>
- Package into Docker Image: <https://www.mathworks.com/help/compiler/package-matlab-standalone-applications-into-docker-images.html>
- Licensing help: <https://www.mathworks.com/help/licensingoncloud/ug/mathworks-licensing-in-containers.html>

Q & A