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
  - AWS
  - 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

Non-Interactive/Batch

License Server
Talk to your admin

Interactive Use

Individual License
(Log in with your MathWorks account)
Summary
Where to find containers

- Just MATLAB: https://hub.docker.com/r/mathworks/matlab


- Dockerfile: https://github.com/mathworks-ref-arch/matlab-dockerfile


Q & A