DevOps for Defense

February 2019

Containers

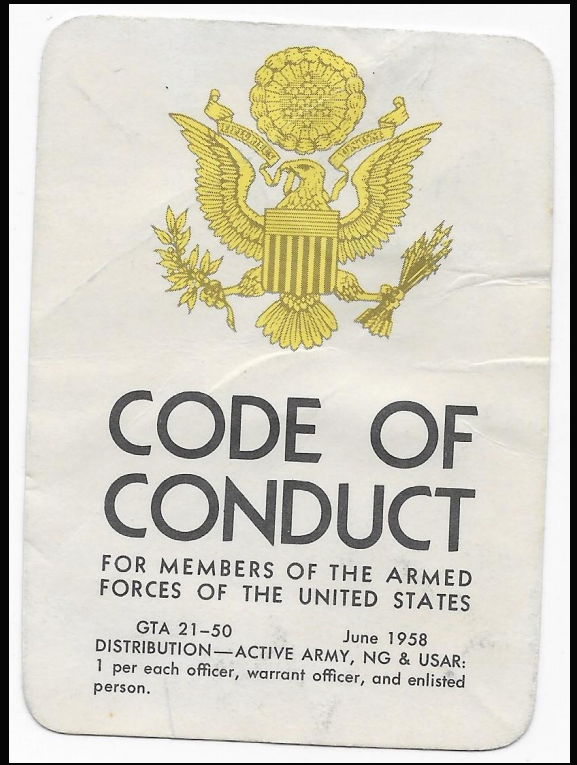
JD Black

https://www.meetup.com/DevOps-for-Defense/
https://github.com/jondavid-black/DevOpsForDefense
devopsfordefense@gmail.com
https://twitter.com/devops4defense

Sponsored by: TEKsystems Own change

DevOps for Defense Meetup: Code of Conduct

- UNCLASSIFIED ONLY!!!!
- Treat each other with respect and professionalism.
- Do not talk about private, sensitive, or proprietary work.
- Do talk about your experiences, needs, desires to improve work in our domain.
- Do share your thoughts.
- Do learn from others.
- Do respect & tip your bartenders!



Be Heard!

What would you like to do in future months?

Presentations:

- Write a topic on a card & add it to the table in the Presentation area.
- If you'd like to volunteer to present the topic, add "Volunteer: [**YOUR NAME**]".

Books:

- Write the title & author on a card & add it to the table in the Book Club area.

Activities:

- Write a short name & description of the activity on a card & add it to the table in the Activity area.

Add a Dot on a Card You'd Like to Vote for!


Containers -
Package
- Deliver
- Distribute

Container ≠ Virtual Machine

GOTO 2018 • Containers From Scratch • Liz Rice
https://youtu.be/8fi7uSYlOdc

What is a Container?

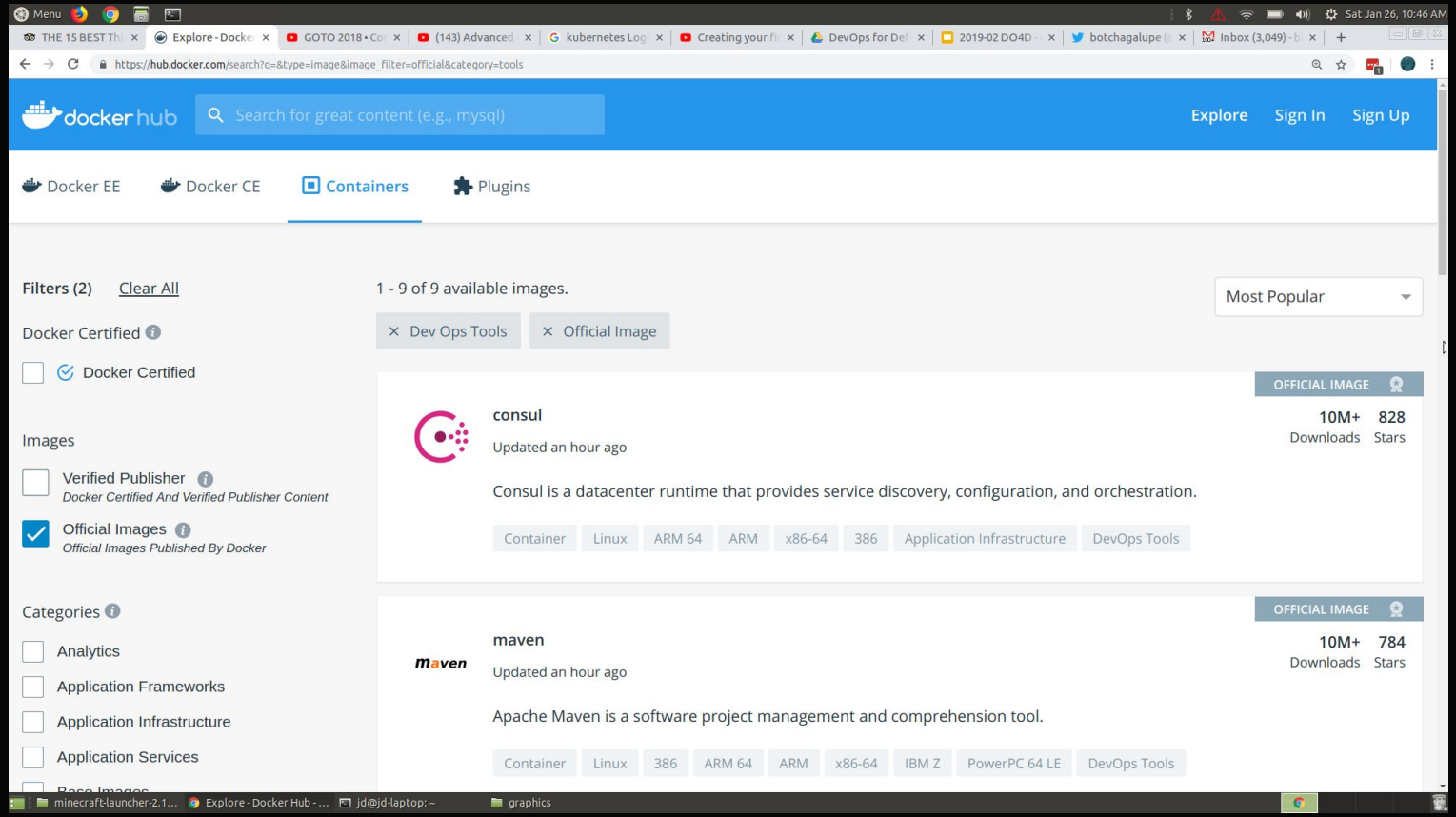
1. Just a Process (with a PID like the others)
   a. Isolation (Namespace)
   b. Resource Sharing (Cgroup)
   c. Encapsulation (Pivot_Root)

docker

Others exist as well - OPENSHIFT by Red Hat

kubernetes

Large Open Source Community - Docker Hub Image Repo



Demo Script- Containers

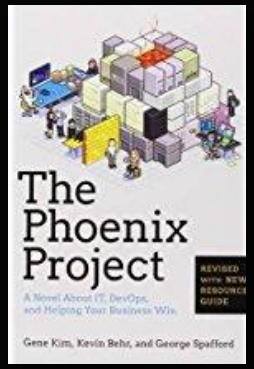
1. Setup (Already done at home)
   a. Env: Ubuntu Mate Linux w/ Latest Install of Docker
   b. Shell: sudo docker pull centos
2. Start and play in a container
   a. Shell: sudo docker run centos -it /bin/bash
   b. Shell: cat /etc/os-release (in and out of the container)
   c. Shell: sudo docker ps (outside the container)
   d. Shell: ps -au (in and out of the container)
   e. Shell: exit (in the container)
   f. Shell: sudo docker ps
3. Create a simple containerized application
   a. Shell: cat run.sh (this is our app)
   b. Shell: cat Dockerfile (this specifies our container)
   c. Shell: sudo docker build . (builds the specified container)
   d. Shell: sudo docker run --name demo ##IMAGE_ID##

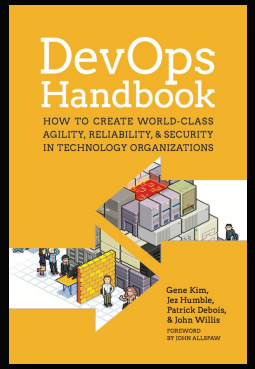
- **Better CM** of process, env, dependencies, & deployment
- **Improved system availability & scalability** if applications are designed well (12factor.net)
- **Create & destroy as needed** for provisioning, deployment, and acceptance testing in your DevOps Pipeline **without violating cyber security** accreditation
- Immutable, so **re-create with confidence** in operations
- **Better operations** visibility, management, and response with tools like Kubernetes

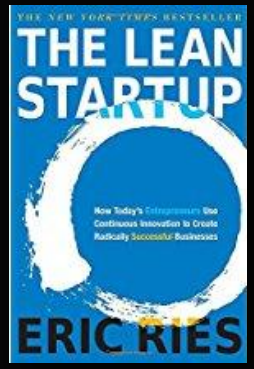
DevOps Resources

https://www.meetup.com/DevOps-for-Defense/
https://github.com/jondavid-black/DevOpsForDefense
devopsfordefense@gmail.com

Books / Publications:



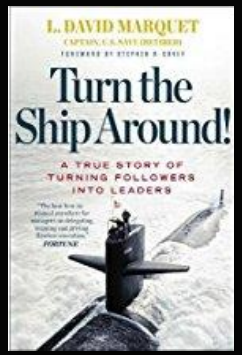


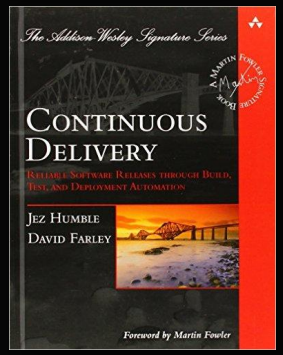


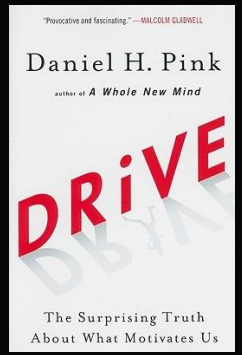
Conference Presentations (YouTube):

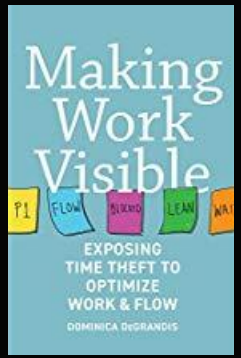
- DevOps Enterprise Summit (DOES)
- IT Revolution
- Velocity
- GoTo

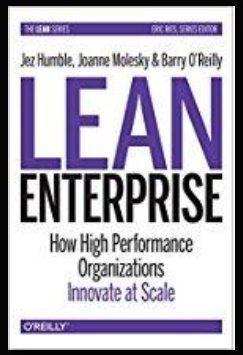
YouTube

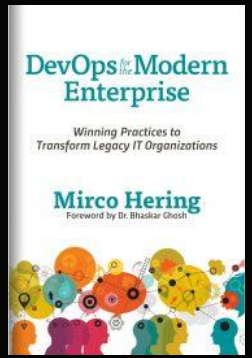












Group Exercises: Lean Coffee & Book Club

Book Club: Review & Discuss "Drive" Section 2

1. Each table has a facilitator.
2. The facilitator has a short introduction.
3. Everyone write down questions or topics for discussion on the subject. Place them in the middle of the table.
4. The group votes on each question or topic by placing a dot on the card. 3 votes per person.
5. Cards with most dots goes first. Set a timer for 5 minutes and discuss.
6. After 5 minutes, either vote (thumbs up/down) to keep going or move on to the next card.

Topics: "Advantages to Using Containers", and "Obstacles to Using Containers"