



DevOps for Defense

October 2019

DevSecOps
Reference Design

JD Black

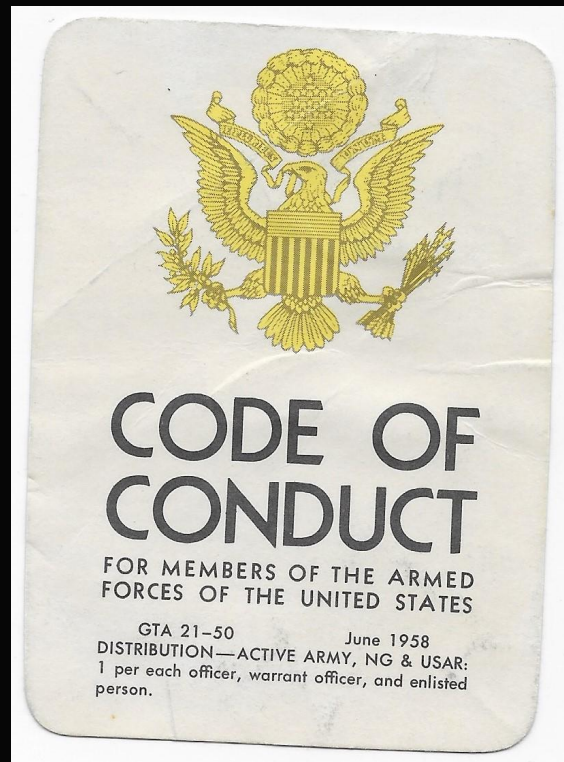
Sponsored by:



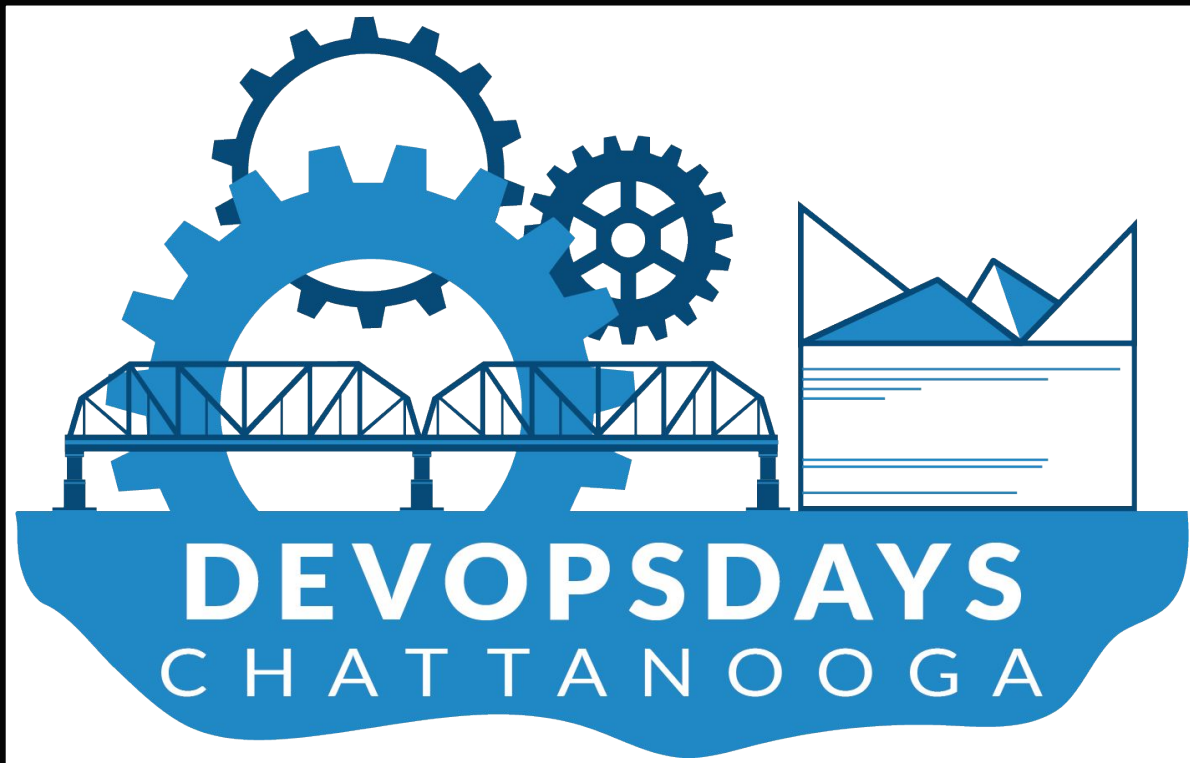
<https://devopsfordefense.org>
<https://www.meetup.com/DevOps-for-Defense/>
<https://github.com/jondavid-black/DevOpsForDefense>
devopsfordefense@gmail.com
<https://twitter.com/devops4defense>

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!



Local(-ish) DevOps Conference - Nov 12, 2019



\$65

Included coffee,
water, snacks, and
lunch last year.

Don't forget about
the time zone
change between
here and
Chattanooga!

Speakers Include:



redhat.



Microsoft



Coming in November @ DevOps for Defense

Outbrief from the conference:

- Key Themes
- Best Presentations
- New Tech
- My Takeaways for the Defense Industry

The logo for the DevOps Enterprise Summit is displayed within a white rectangular box. The text "DEVOPS" is on the top line, "ENTERPRISE" is on the second line, and "SUMMIT" is on the third line. The letters are in a bold, sans-serif font. The colors of the letters vary: "DEVOPS" has blue, green, and yellow letters; "ENTERPRISE" has blue and green letters; and "SUMMIT" has blue, green, and yellow letters.

**DEVOPS
ENTERPRISE
SUMMIT**

Oct 28-30 | Las Vegas, NV

Coming in December @ DevOps for Defense



We have “penciled in”...

Robert Freeman
GitHub Lead Engineer for
DoD and IC

Celebrate our 2nd Anniversary with GitHub!

UNCLASSIFIED



DoD Enterprise DevSecOps Reference Design

**Version 1.0
12 August 2019**

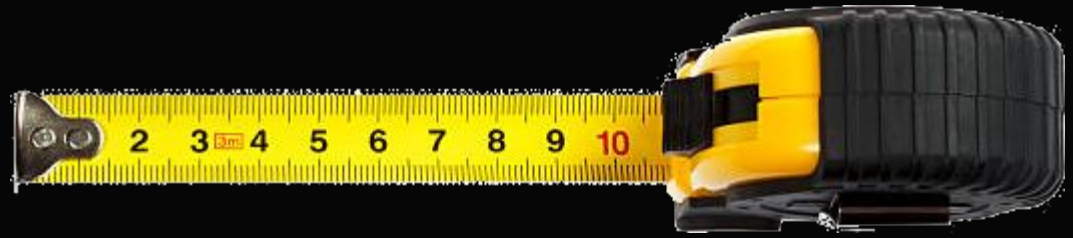
**Department of Defense (DoD)
Chief Information Officer**

Distribution Statement C: Distribution authorized to U.S. Government Agencies and their contractors; Administrative or Operational Use; 29 November 2018. Other requests for this document shall be referred to the DoD Chief Information Officer.

DevSecOps (as defined by DoD CIO)

DevSecOps is an organizational software engineering culture and practice that aims at unifying software development (Dev), security (Sec) and operations (Ops). The main characteristic of DevSecOps is to improve customer outcomes and mission value by automating, monitoring, and applying security at all phases of the software lifecycle: plan, develop, build, test, release, deliver, deploy, operate, and monitor. Practicing DevSecOps provides demonstrable quality and security improvements over the traditional software lifecycle.

Measures



Mean-time to production: the average time it takes from when new software features are required until they are running in production.

Average lead-time: how long it takes for a new requirement to be delivered and deployed.

Deployment speed: how fast a new version of the application can be deployed into the production environment.

Deployment frequency: how often a new release can be deployed into the production environment.

Production failure rate: how often software fails during production.

Mean-time to recovery: how long it takes applications in the production stage to recover from failure.

each phase.

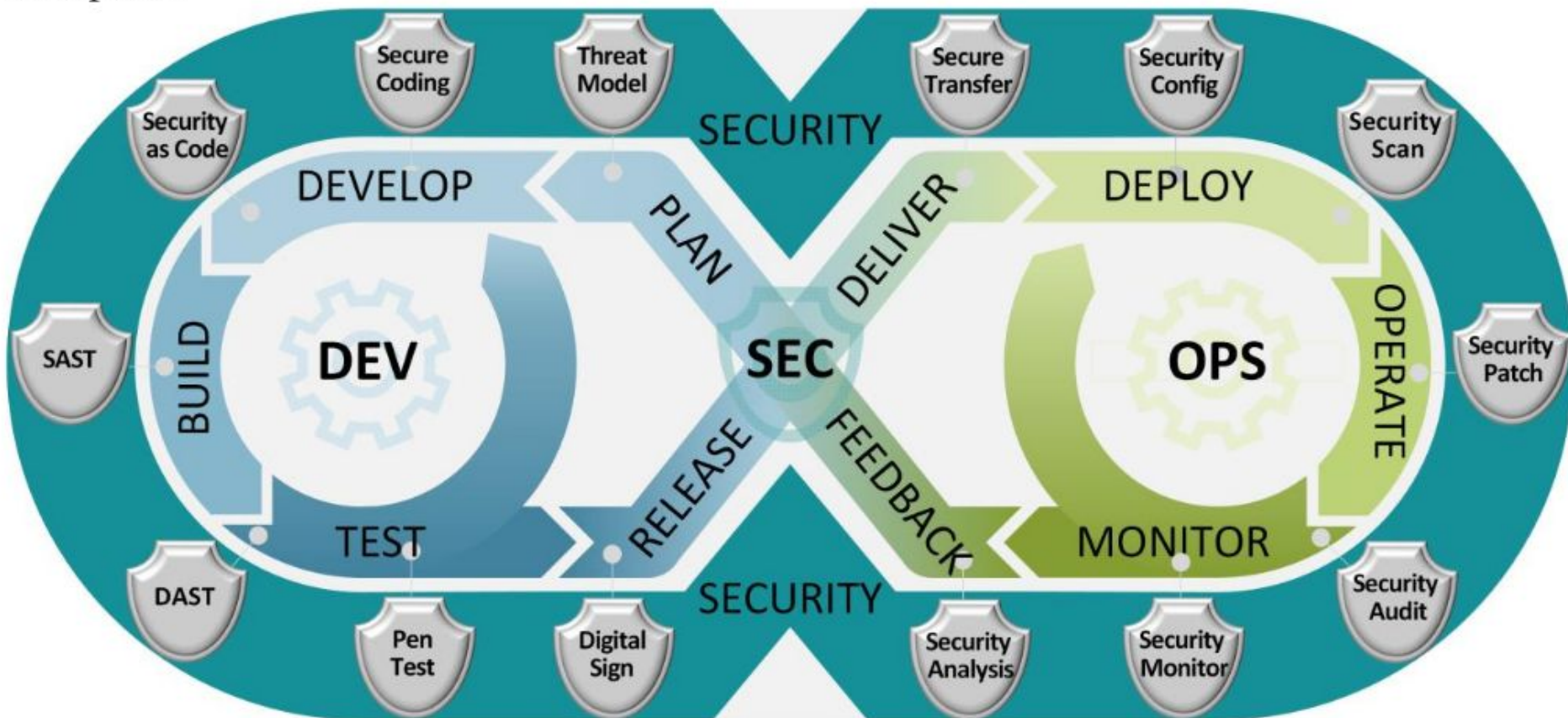


Figure 3: DevSecOps Software Lifecycle

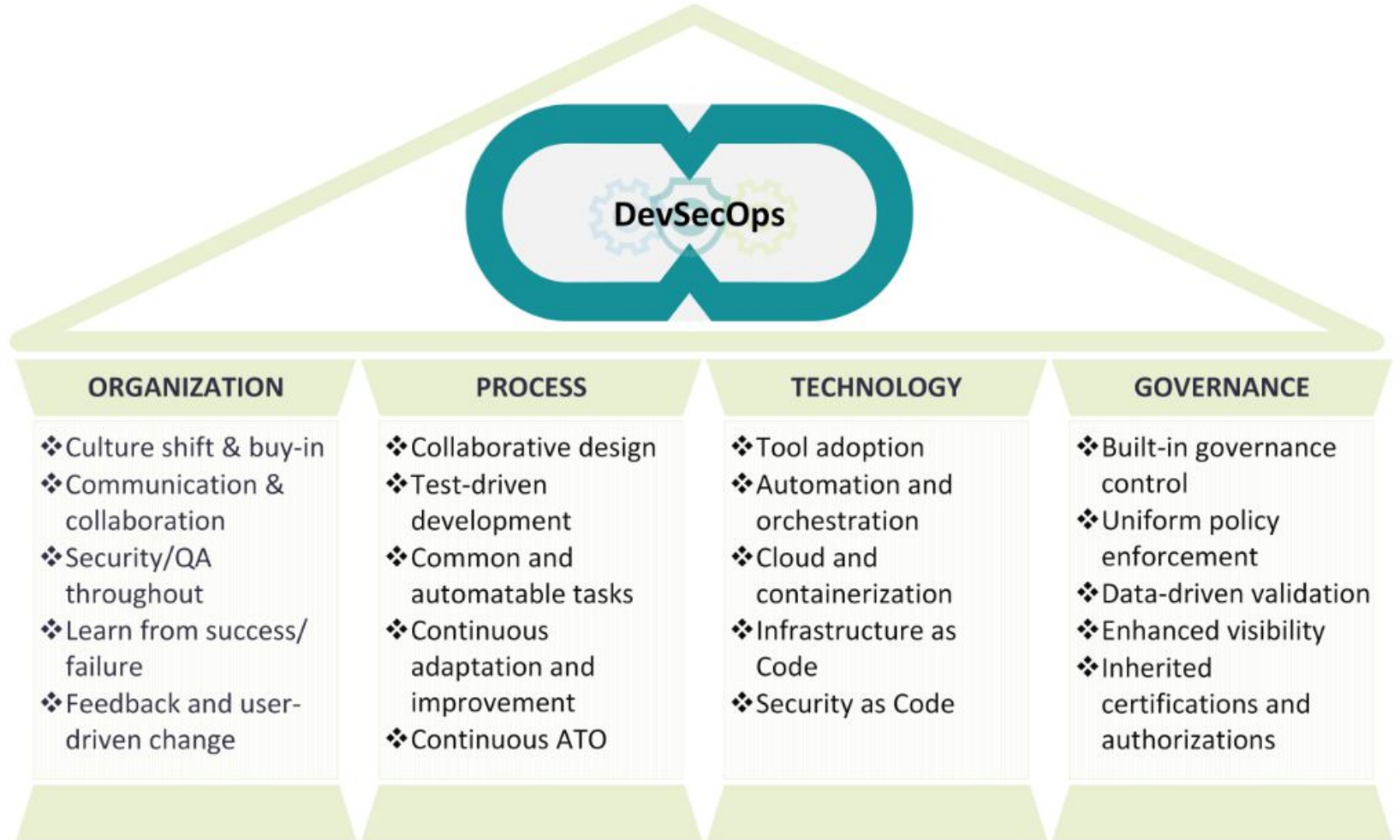


Figure 4: DevSecOps Pillars

Software Factory

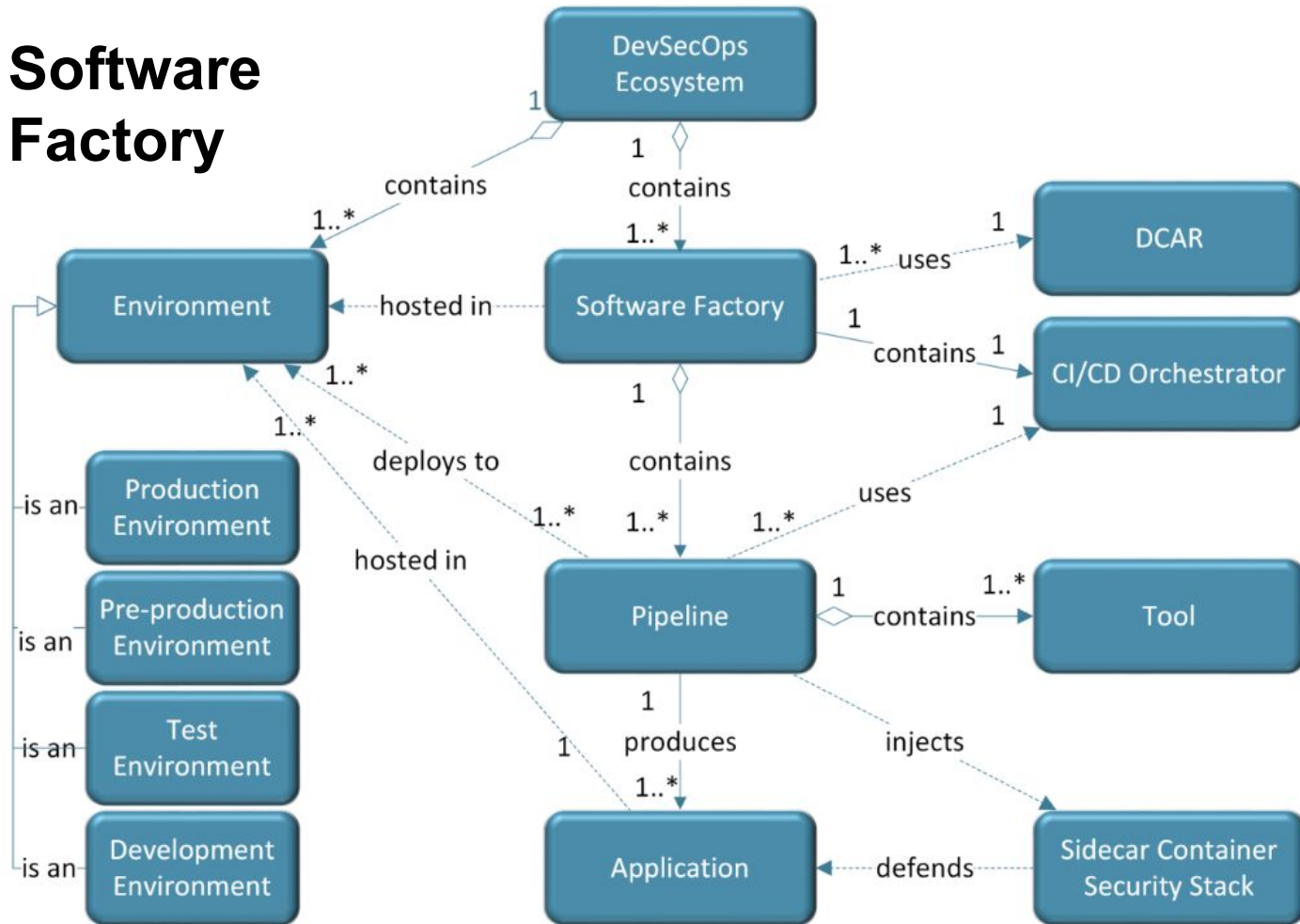


Figure 2: Conceptual Model

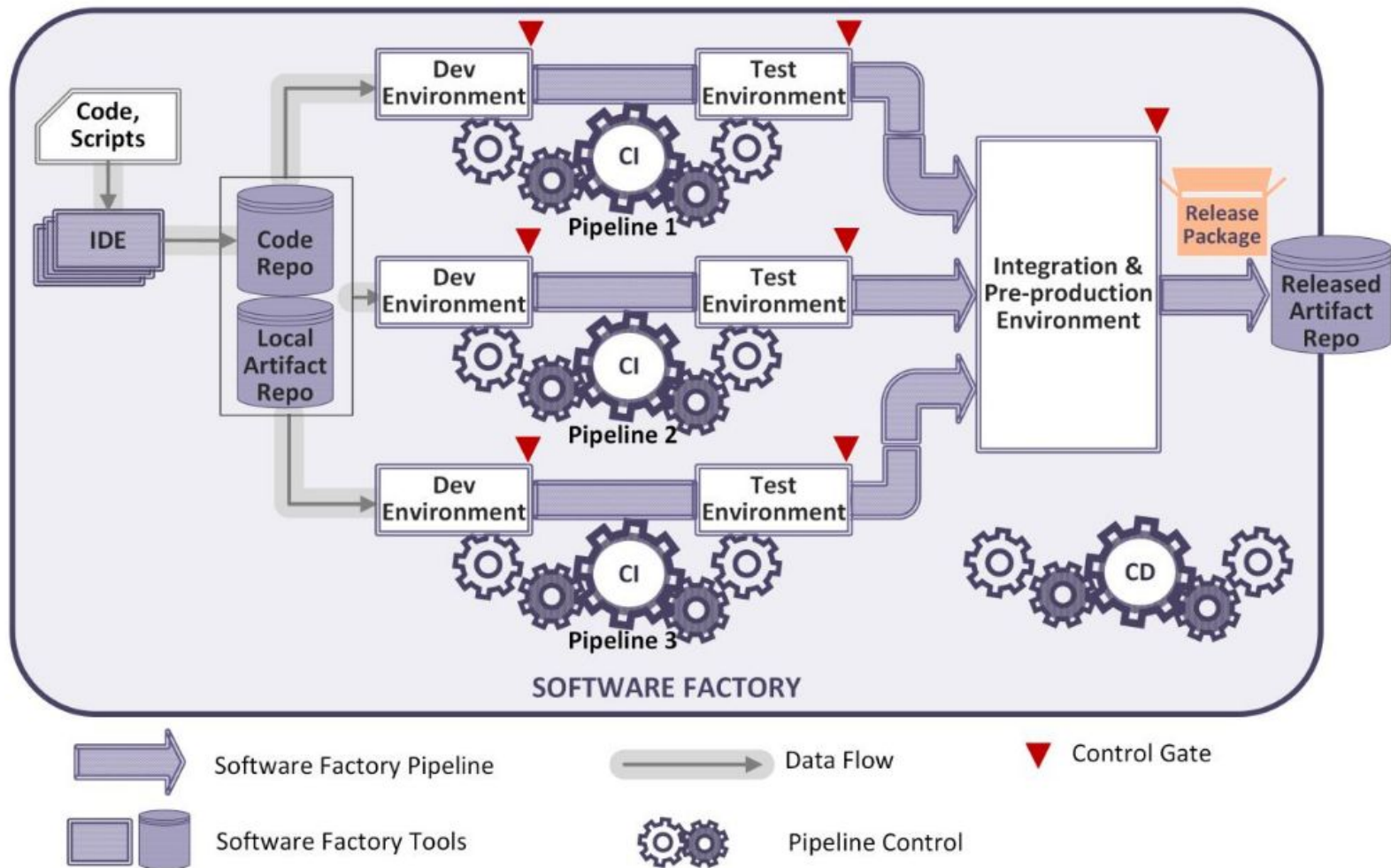


Figure 9: DevSecOps Software Factory

DoD CIO DevSecOps MVP (...objective not shown)

Planning

- Team Collaboration System
- Issue Tracking System
- Project Management System

Develop

- Integrated Development Environment
- Source Code Repository

Build

- Build Tool
- Container Builder
- Artifact Repository
- Static Application Security Test (SAST) tool

Test

- Test Development Tool
- Test Tool Suite
- Test Coverage Tool
- Container Security Tool
- Container Policy Enforcement

Release & Deliver

- Release Packaging Tool

Software Factory

- CI/CD Orchestrator

Production Operations

Deploy

- Virtualization Manager
- CNCF-certified Kubernetes
- Configuration Automation Tools
- Service Mesh

Operate

- Backup Management

Monitor

- Logging
- Log Aggregator
- Log Analysis & Monitoring
- Operations Monitoring
- Information Security Continuous Monitoring (ISCM)
- Alerting & Notification

Containers Everywhere!

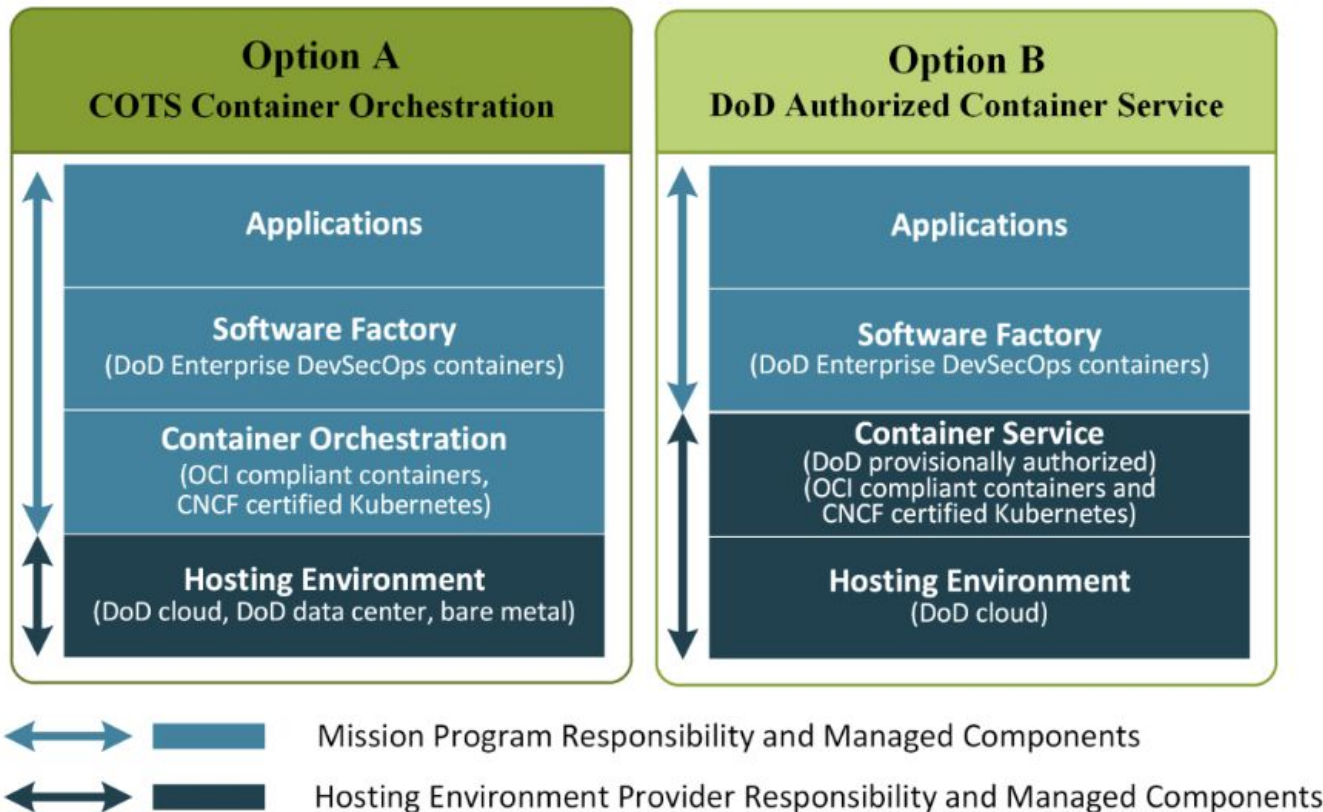
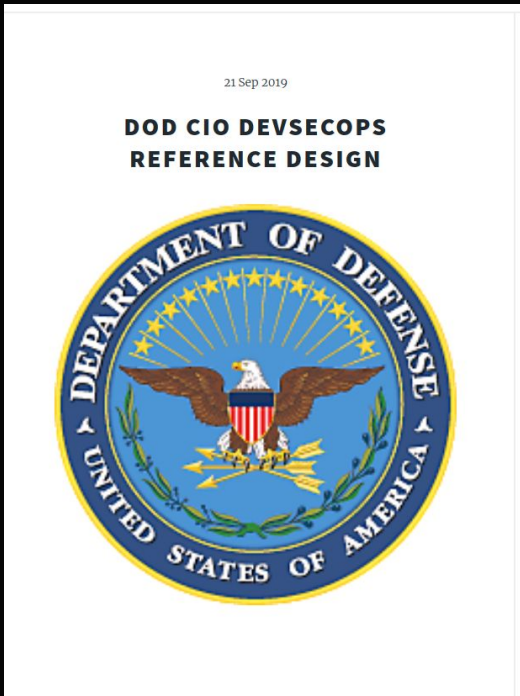


Figure 13: DevSecOps Platform Options

See for yourself on DevOpsForDefense.org
(in the Resources section)



Full document in web section.



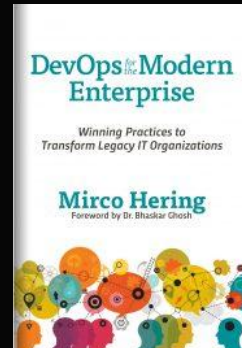
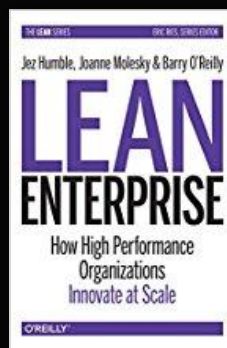
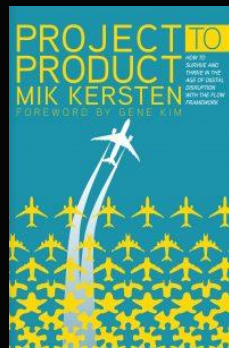
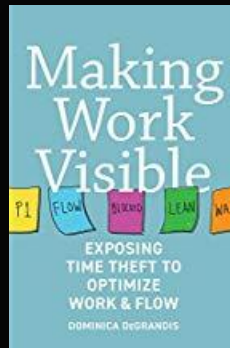
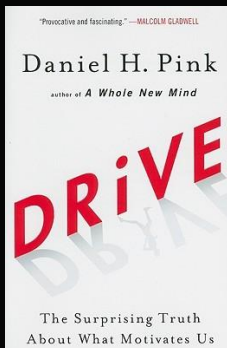
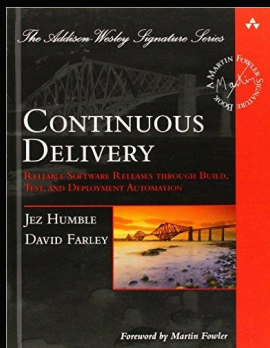
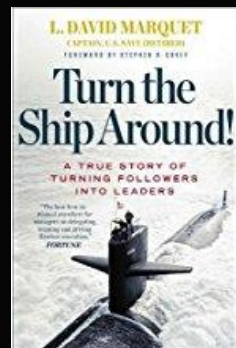
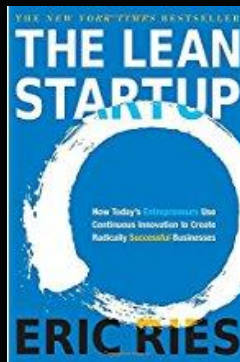
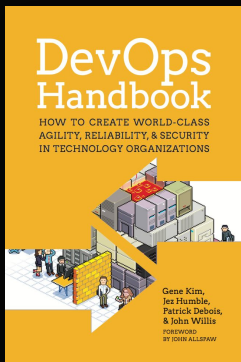
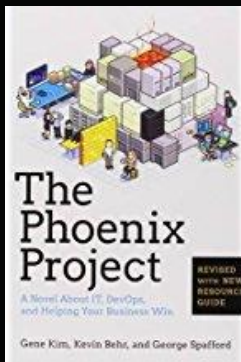
Conference presentation in video section.

DevOps Resources

<https://devopsfordefense.org/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

Group Exercise: Lean Coffee

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: “Can we really Docker?”, “Security-as-Code”, “Doesn’t apply to me!”