DevOps for Defense

November 2020

Configuration Management: #1 Leading Indicator of High Performing Teams

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https://twitter.com/devops4defense

Sponsored by: TEKsystems Own change

Simplified Configuration Management Definitions

Demo:

- 🟢 **Change Management:** The process of actively determining what “active” content is delivered in specific releases. (Note: some content may not be “active”...and that’s ok)
- 🟢 **Version Control:** The practice of ensuring all baseline changes are rigorously tracked within your repository...including what, who, when, and the evidence of “goodness”
- 🔴 **Trunk-Based Development:** The practice of small, frequent baseline changes to a main branch that is continuously integrated and always available to deliver
- 🟢 **GitHub Flow:** The practice that augments trunk-based development through the use of short lived branches to safely collaborate within a team on feature development followed by pull requests that rapidly incorporate changes into the baseline
- 🟢 **Feature Toggle:** A version controlled switch that determines which behavior is enabled and which is disabled.
- 🟢 **Branch by Abstraction:** A strategy to add new features with a main baseline without disturbing existing functionality.
- 🔴 **Versioned Interfaces:** A strategy to maintain backward compatibility of interfaces / APIs as new capability is incrementally delivered.

A Fundamental Premise...

Branches are Evil

(especially when misused & abused)

Branches defer integration.

It’s not called “Merge Hell” for nothing.

Maintaining concurrent baselines becomes expensive!

What You'll Need (for this java-centric demo...I'm using the free/easy-ish stuff)

	What I'm Using	Other Options (among many)
Issue Tracking System	GitHub	Jira, VERSIONONE®
Git with a Repository Manager	git, GitHub	GitLab, Bitbucket
Artifact Repository	GitHub	nexus repository manager by sonatype
Build Tool	Gradle	Apache Maven™
Automated Test	JUnit	cucumber
Continuous Integration	GitHub Actions	Jenkins, GitLab, Bamboo
IDE (nice to have)	Visual Studio Code	eclipse, IntelliJ IDEA

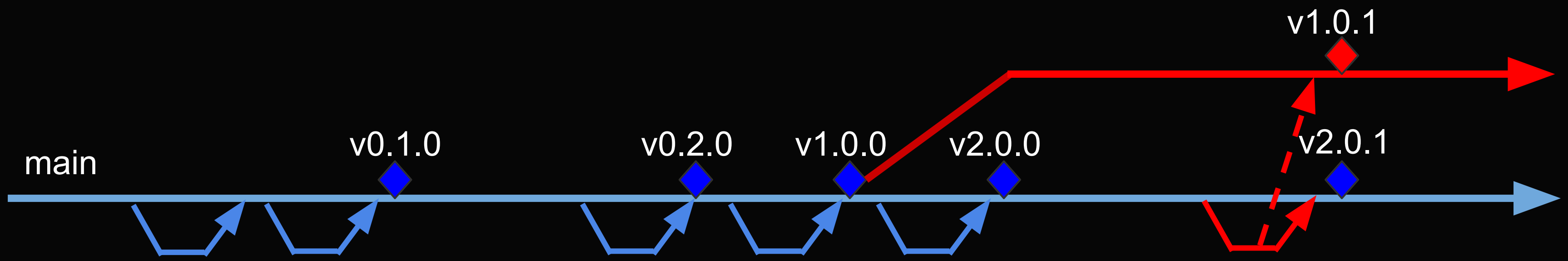
Demo Script

I want a toy application that generates numbers from a distribution and aggregates them into a single reportable value.

Act I: Initialize & Setup

Act II: Feature Release

Act III: Nightmare… Multi-Release Bug



1. Create a repository
2. Initialize the baseline
3. Establish CI Process
4. Establish Release Process

1. Create Number Generator
2. Create Number Aggregator MVP
3. Create Advanced Number Aggregator

1. Fix a critical bug
2. Update current release
3. Update past release

Note: This is not good and can be avoided, but is common in our domain so I show how if necessary.

Act One

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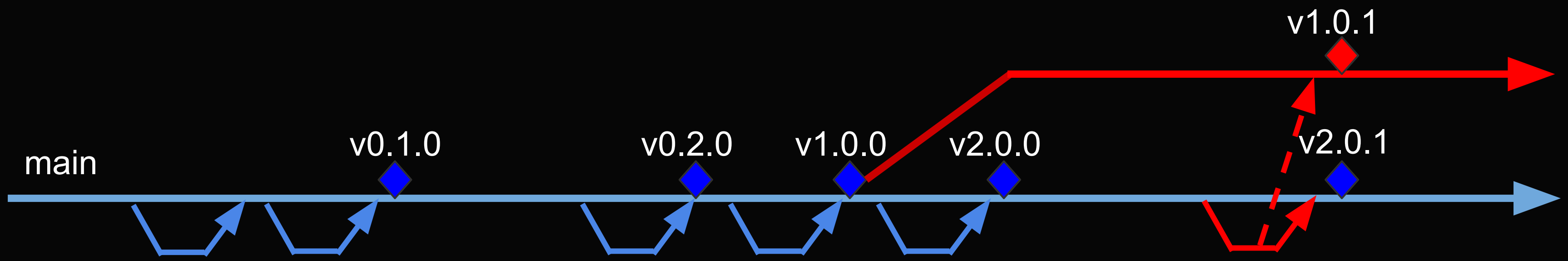

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IT'S ALL
Fun & Games
UNTIL
ACT II

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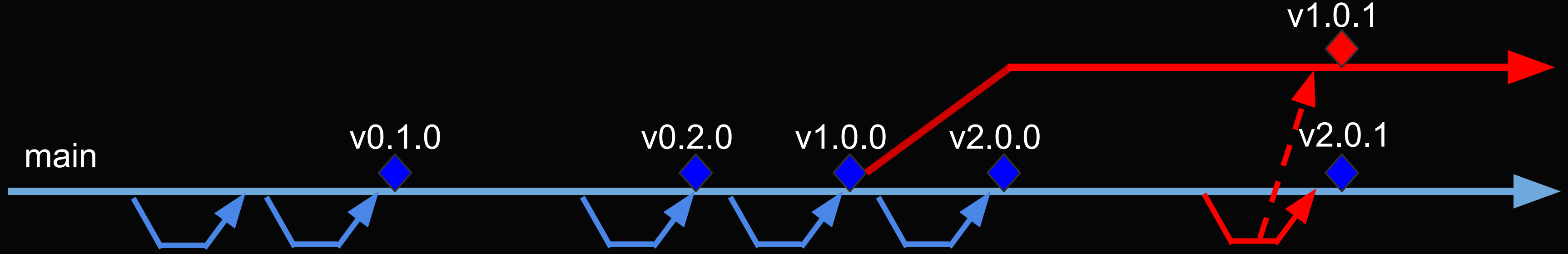

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ACT III
GUIDE
HELLO, NEIGHBOR!

The End

ENCORE!

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Act III:
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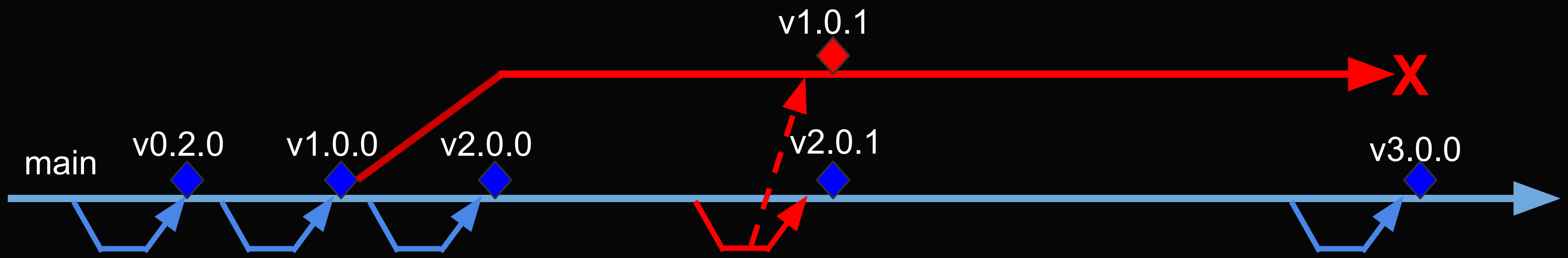
Encore:
Back to Trunk



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1. Externalize Feature Toggle Configs
2. Deliver release with CM Controlled Execution Scripts for OPS

Note: Use an Ansible Playbook to deploy your release and explicitly control execution permissions for target environments. Even better, containerize to make it immutable.

DevOps Resources

https://devopsfordefense.org/resources/

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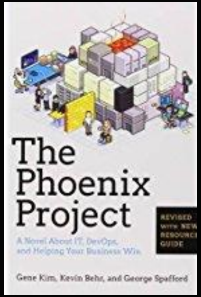
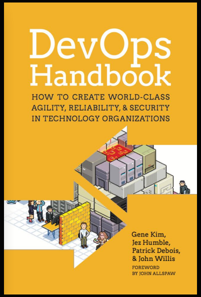
https://github.com/jondavid-black/DevOpsForDefense
devopsfordefense@gmail.com

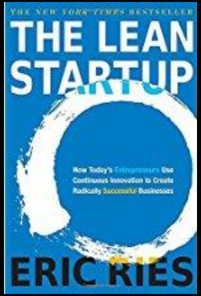
Books / Publications:



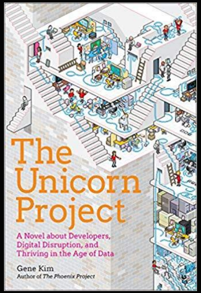
The Phoenix Project
A Novel About IT, DevOps, and Helping Your Business Win
REVISED WITH NEW RESOURCE GUIDE
Gene Kim, Kevin Behr, and George Spafford



DevOps Handbook
HOW TO CREATE WORLD-CLASS AGILITY, RELIABILITY, & SECURITY IN TECHNOLOGY ORGANIZATIONS
Gene Kim, Jez Humble, Patrick Debois, & John Willis
FOREWORD BY JOHN ALLSPAW



THE NEW YORK TIMES BESTSELLER
THE LEAN STARTUP
How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses
ERIC RIES

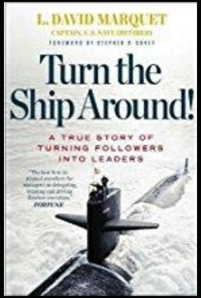


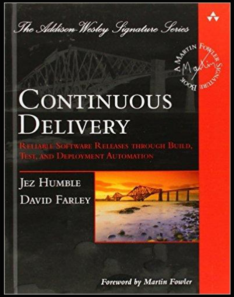
The Unicorn Project
A Novel about Developers, Digital Disruption, and Thriving in the Age of Data
Gene Kim
Author of The Phoenix Project

Conference Presentations (YouTube):

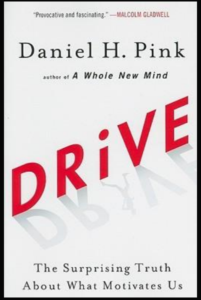
- DevOps Enterprise Summit (DOES)
- IT Revolution
- Velocity
- GoTo

YouTube

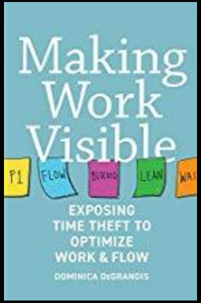


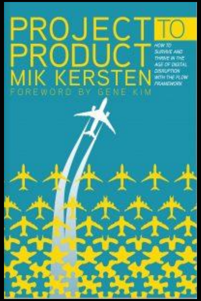


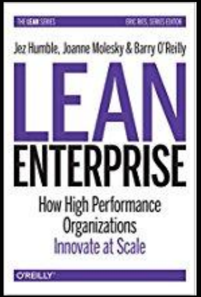
The Addison-Wesley Signature Series
A Martin Fowler Signature Book
CONTINUOUS DELIVERY
RELIABLE SOFTWARE RELEASES THROUGH BUILD, TEST, AND DEPLOYMENT AUTOMATION
JEZ HUMBLE
DAVID FARLEY
Foreword by Martin Fowler



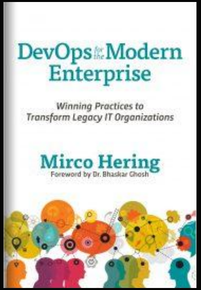
"Provocative and fascinating." —MALCOLM GLADWELL
Daniel H. Pink
author of A Whole New Mind
DRiVE
The Surprising Truth About What Motivates Us



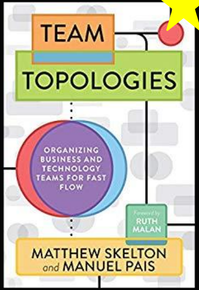




Jez Humble, Joanne Molesky & Barry O'Reilly
LEAN ENTERPRISE
How High Performance Organizations Innovate at Scale
O'REILLY



DevOps for the Modern Enterprise
Winning Practices to Transform Legacy IT Organizations
Mirco Hering
Foreword by Dr. Bhaskar Ghosh



TEAM TOPOLOGIES
ORGANIZING BUSINESS AND TECHNOLOGY TEAMS FOR FAST FLOW
Foreword by RUTH MALAN
MATTHEW SKELTON and MANUEL PAIS