Continuous Delivery: Cloud Software Development on Speed

Live Webcast
April 20, 2021
10:00 am PT / 100 pm ET
Today’s Speakers

Moderator:  
Alex McDonald  
Independent Consultant  
Chair, SNIA CSTI

Presenter:  
Davis Frank  
Co-creator of the Jasmine Test Framework
SNIA-at-a-Glance

180
industry leading organizations

2,300
active contributing members

50,000
IT end users & storage pros worldwide

Learn more: snia.org/technical
What We Do

- **Educate** vendors and users on cloud storage, data services and orchestration

- **Support & promote** business models and architectures: OpenStack, Software Defined Storage, Kubernetes, Object Storage

- **Understand** Hyperscaler requirements. Incorporate them into standards and programs

- **Collaborate** with other industry associations
SNIA Legal Notice

The material contained in this presentation is copyrighted by the SNIA unless otherwise noted. Member companies and individual members may use this material in presentations and literature under the following conditions:

- Any slide or slides used must be reproduced in their entirety without modification.
- The SNIA must be acknowledged as the source of any material used in the body of any document containing material from these presentations.

This presentation is a project of the SNIA.

Neither the author nor the presenter is an attorney and nothing in this presentation is intended to be, or should be construed as legal advice or an opinion of counsel. If you need legal advice or a legal opinion please contact your attorney.

The information presented herein represents the author's personal opinion and current understanding of the relevant issues involved. The author, the presenter, and the SNIA do not assume any responsibility or liability for damages arising out of any reliance on or use of this information.

NO WARRANTIES, EXPRESS OR IMPLIED. USE AT YOUR OWN RISK.
Agenda

- What is Continuous Delivery?
- Why are Product Teams Adopting CD?
- Software Development as a Manufacturing Line
- How to Implement on Your Team
- How to Get Started
What is Continuous Delivery?
The Automobile Assembly Line

STEP 1:  
- Car Parts

STEP 2:  
- Cars
- Profit!

STEP 3:  
- Cars
- Profit!
But...as it Scaled

**STEP 1:**
- Car Parts

**STEP 2:**
- Parking lots full of cars to rework
- Labor issues
- Cars
- Profit?
Software’s Assembly Line

STEP 1: Requirements

STEP 2: Working Software

STEP 3: Profit
Many, Many Waterfall Software Projects

**STEP 1:**
- Requirements

**STEP 2:**
- Missed Deadlines
- Regressions
- Bugs
- Some Working Software
- Profit?
Oops.
How Did Manufacturing Solve Their Problems?
Enter Lean Manufacturing

Just-in-Time Purchasing Materials & Builds

- Increased Automation
- Andon Cords

- Sharing Expertise Among Teams
- Smaller Stations & Steps
Continuous Delivery is Lean Manufacturing for Manufacturing Software
Ship it.
Ship it.

Incrementally
Ship it.

Incrementally Frequently
Ship it.

Incrementally
Frequently
Safely
Thanks, Cloud!
Implementing CD
CD Team Analogs for Lean Manufacturing

Incremental Planning

Automated Testing

Short Feedback Loops

Frequent Team Rotation

Continuous Integration
Incremental Planning

- Hand-wave plan for multiple releases
- Rough plan for this release
- Detailed planning for this week and next
- Always be prepared to throw out anything planned so far
Short Feedback Loops

- Design and estimate for short horizons
- Keep WIP low
  - People work on 1 team at a time
  - People work on 1 story at a time
- Staging Deployments/Environments with latest code
- Product accepts/rejects daily
Automated Testing

- Test-Driven Development (TDD)
- Feature testing/User Acceptance
- Easy to run locally for developers
- Easy to run externally for CI, others
- Find a bug? Write a test. Run it always.
Continuous Integration

- Test all the things again!
- Run test suites on every code check-in
- Deploy code that passes to Staging
  - Do *not* deploy code that doesn’t pass
- Current version of the code should always be useable
- This is practice for deploying to Production
Frequent Team Rotation

- “Given enough eyeballs, all bugs are shallow.” – Linus’s Law
- Outside perspectives can uncover issues
- Shared ownership of code
- Reduces points of failure
- Constant Learning
Process is part of the Product

- How a team works is part of the work
- Hold regular retrospectives

“File:Retrospective.jpg” by Nicole Waleczek (WMDE) is licensed under CC BY-SA 4.0
Find your software problems

- Test frameworks
- PaaS for deployment
- DevOps for infrastructure
- SRE practices for monitoring
- Continuous Integration SaaS
- Cloud databases, mail services, etc.
  - Public & Private clouds
How to Get Started
Homework

- Books
  - *The Phoenix Project*
  - *The Lean Startup*
  - *Agile Retrospectives*
  - *Explore It!*
  - *Extreme Programming Explained*

- DWF Blog Posts
  - *The Continuous Delivery Test*
  - *Process as Product*

- Bonus
  - *This American Life* ep. 561: **NUMMI**
    - History of GM’s joint venture with Toyota
    - They build Tesla cars there now…
Thanks for Viewing This Webcast

Please rate the webcast and provide us with feedback

This webcast and a copy of the slides will be available at the SNIA Educational Library [https://www.snia.org/educational-library](https://www.snia.org/educational-library)

A Q&A from this webcast will be posted to the SNIA Cloud blog: [www.sniacloud.com/](http://www.sniacloud.com/)

Follow us on Twitter @SNIACloud
Thank You