

Continuous Delivery: Cloud Software Development on Speed

Live Webcast

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Today's Speakers



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Framework

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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:

STEP 3:

- Cars
- Profit!





But...as it Scaled

STEP 1:

- Car Parts

STEP 2:

STEP 3:

- Parking lots full of cars to rework
- Labor issues
- Cars
- Profit?

Software's Assembly Line

STEP 1:

- Requirements

STEP 2:

STEP 3:

- Working Software
- Profit



Many, Many Waterfall Software Projects

STEP 1:

- Requirements

STEP 2:

STEP 3:

- Missed Deadlines
- Regressions
- Bugs
- Some Working Software
- Profit?





Oops.

"Flood Waters Cause Sinkhole Washout on MBTA Green Line D Branch in Newton, March 15, 2010" by [MassDOT](#) is marked with [CC PDM 1.0](#)

How Did Manufacturing Solve Their Problems?

Enter Lean Manufacturing

Just-in-Time Purchasing
Materials & Builds

Increased
Automation

Sharing Expertise
Among Teams

Andon Cords

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

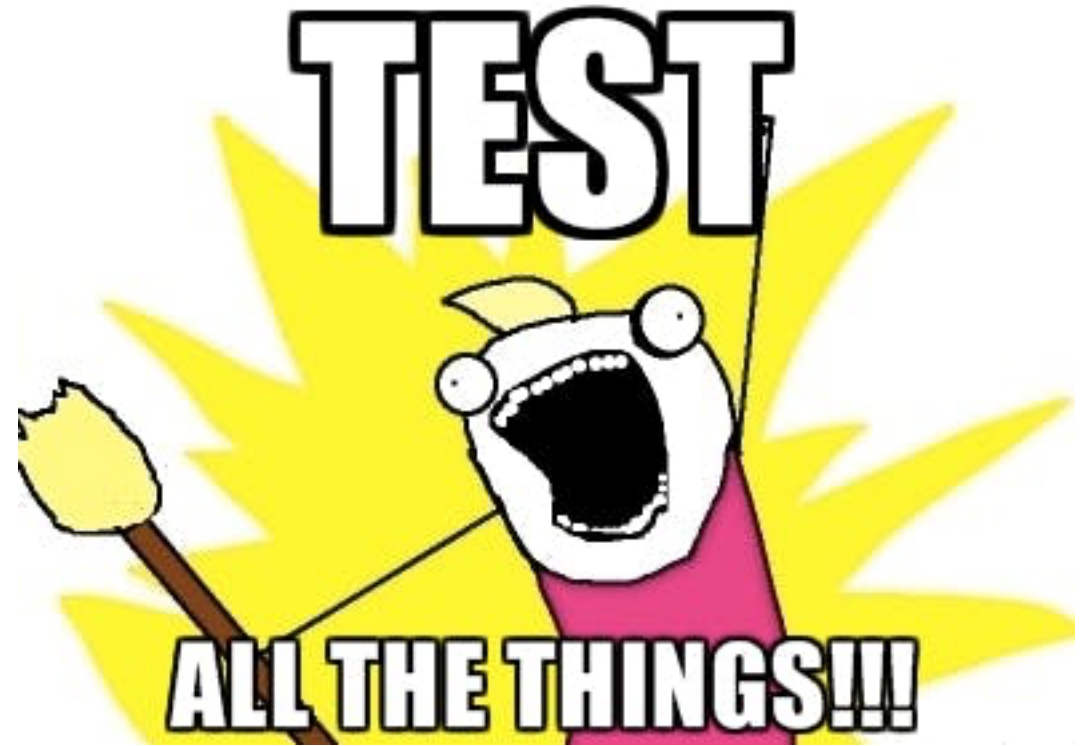
- Hand-wave plan for multiple releases
- Rough plan for this release
- Detailed planning for this week and next
- Always be prepared to throw out anything planned so far

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

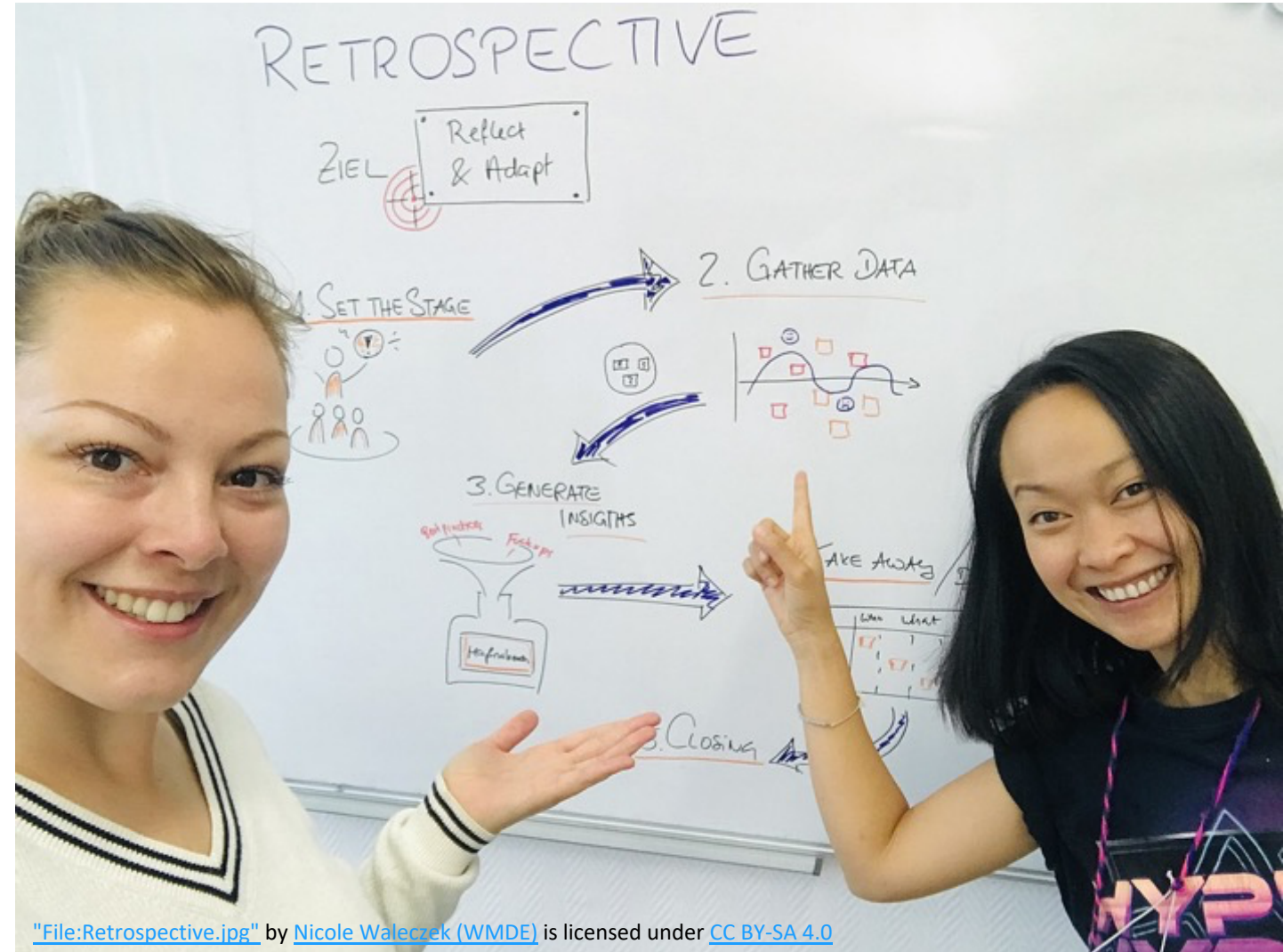
- Test all the things again!
- Run test suites on every code check-in
- Deploy code that passes to Staging
 - Do *not* deploy code that doesn't pass
- Current version of the code should always be useable
- This is practice for deploying to Production

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



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...



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