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Velocity

CONFERENCE

BUILD RESILIENT SYSTEMS AT SCALE

Part of the pipeline: Why continuous testing is essential

Adam Auerbach @Bugman31
Tapabrata Pal @TopoPal

velocityconf.com

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Capital One

- **70 million accounts**
- **One of the largest Digital Banks**
- **~ 20 years old**

“...the winners in banking will have the capabilities of a world-class software company.”

Rich Fairbank
Founder & CEO
Capital One

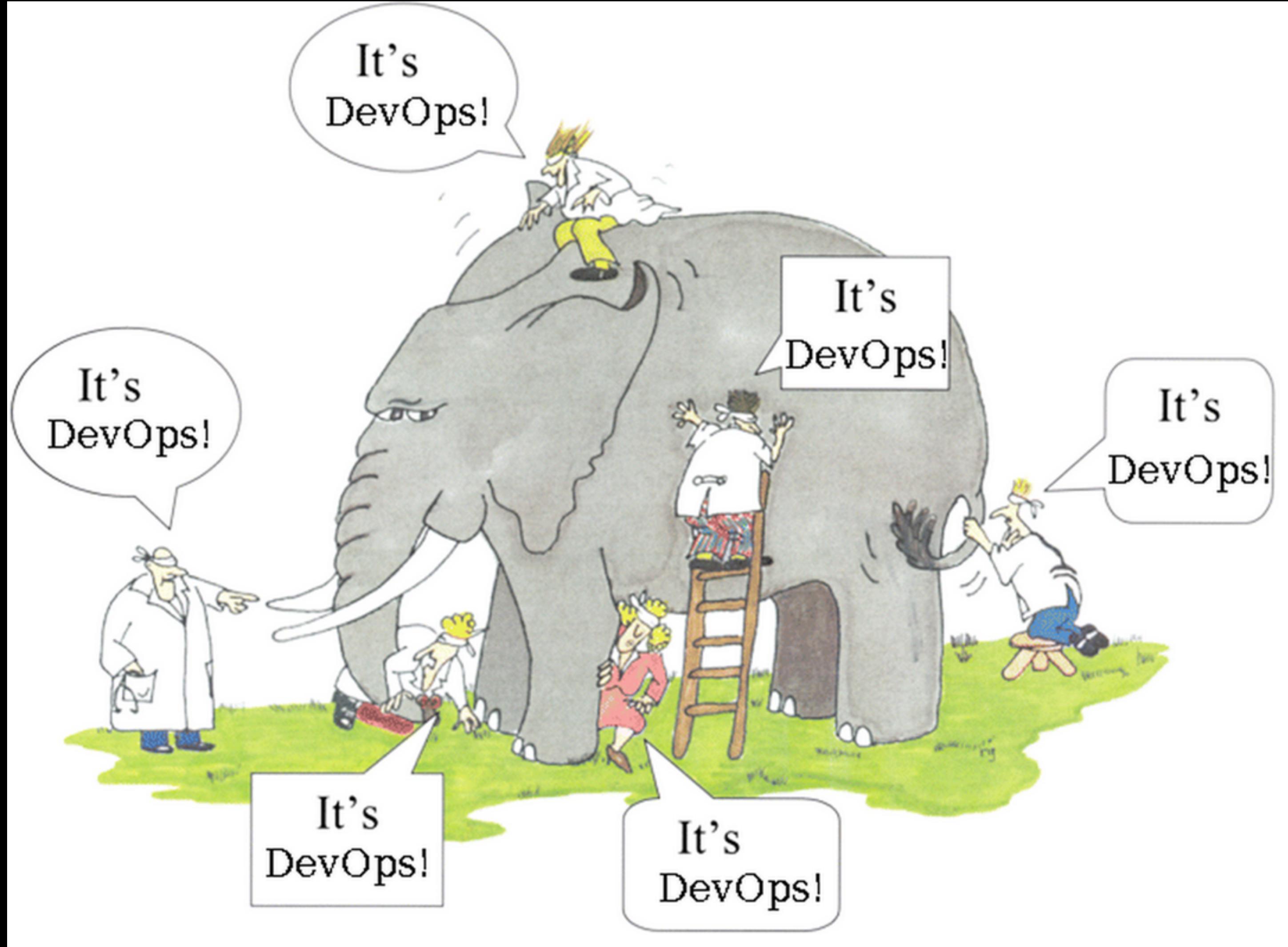
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Different DNA

- Build our own software
- Build on public cloud
- MicroServices
- Open Source
- DevOpsSec and Continuous Delivery



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Deliver High Quality Working Software Faster

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Deliver High Quality Working Software Faster

- No security flaws
- No legal flaws
- Minimum defects
- All levels of testing done
- Code reviewed and source controlled
- Testing of application, configuration, scripts etc.

- How fast? ASAP?



<http://www.netuba.org/>

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https://en.wikipedia.org/wiki/Oil_refinery

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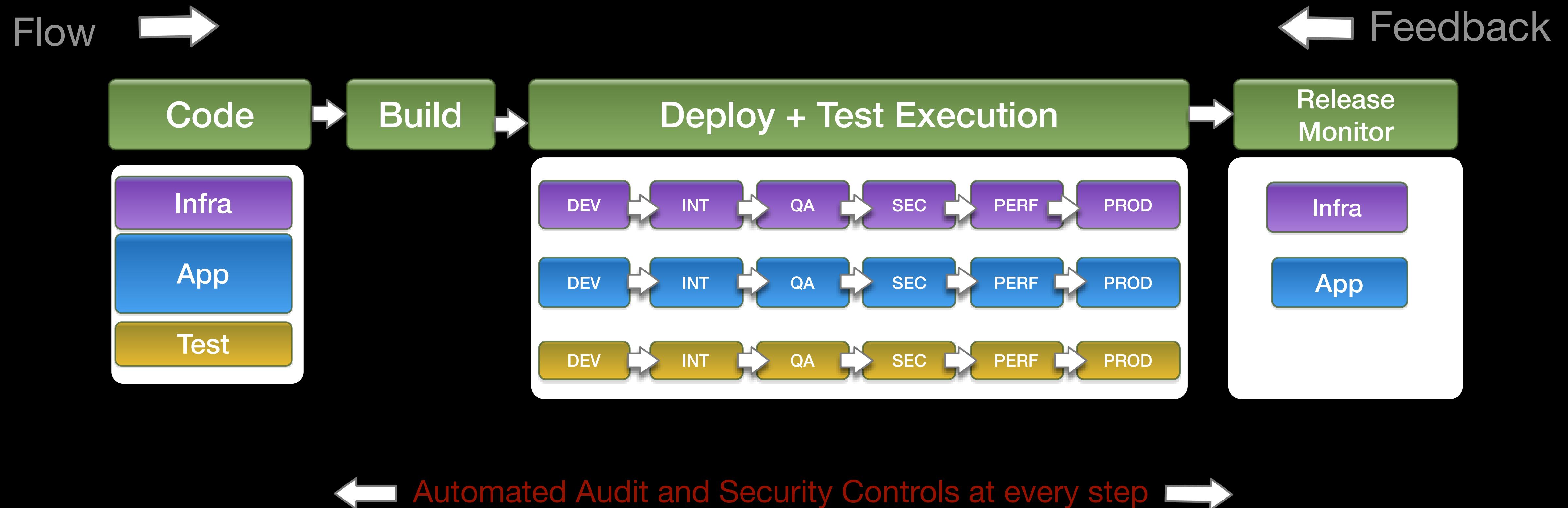


https://commons.wikimedia.org/wiki/File:US_Navy_060906-N-8257O-026_Damage_Controlman_1st_Class_Petty_Officer_Derrick_Harney_assists_his_students_in_repairing_a_broken_pipeline_during_the_hands_on_patch_training_portion_of_the_Damage_Control_Wet_Trainer.jpg

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Backlog

Design

Sprints

Hardening

Maintenance

High Quality Working Software



Continuous Testing

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Continuous Testing

- Static Scan
- Unit Testing
- Acceptance Test
- Performance Test
- Security Tests

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Challenges

- Devices and Browsers
- Test Environments
- Test Data
- Dependencies
- What & When
- Visibility and Transparency
- People

Solution

- Devices and Browsers
 - Use SaaS
 - Needs a bit of engineering

Solution

- Test Environments
 - On Demand, On the fly - Cloud

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Solution

- Test Data
 - On demand
 - Freshly loaded
 - Production Like

Solution

- Dependencies
 - Service Virtualization

Solution

- What & When
 - No good answer
 - Fail fast
 - Keep pipeline speed intact

Visibility: Dashboard Everything



Tracking health of your software delivery pipeline

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Feature

Scope: VersionOne - ScrumIT
SPRINT: SPRINT 15... A DAY

	82	17	5
TOTAL	82	17	5
WIP			
DONE			
FEATURES IN PROGRESS	+/-		

Multiple Business Types	45
Tech Debt	17
Google Type Ahead	8
Web Analytics and Customer Feedb...	6

Build

BUILDS PER DAY

AVERAGE BUILD DURATION

3m ago ⚙️

LATEST BUILDS

!	17	7h ago	>
✓	16	8h ago	>
!	15	8h ago	>
!	14	8h ago	>
✓	13	9h ago	>

TOTAL BUILDS

8	17	17
TODAY	LAST 7 DAYS	LAST 14 DAYS

Monitor

DEPENDENT SERVICES

- ✓ Chef Platform: Chef 11 KDC

Deploy

4m ago ⚙️

①	DEV1	6h ago	3 ↑ 0 ↓
✓	DEV2	Aug 23	3 ↑ 0 ↓
✓	DEV3	12h ago	3 ↑ 0 ↓
②	DEV4	Jul 29	3 ↑ 0 ↓
①	DEV5	5h ago	3 ↑ 0 ↓
①	DEV6	6h ago	3 ↑ 0 ↓
②	DEV7	Aug 23	3 ↑ 0 ↓
①	DEV8	Sep 1	3 ↑ 0 ↓
✓	DEV9	2d ago	3 ↑ 0 ↓
✓	DEV10	2d ago	3 ↑ 0 ↓
✓	DEV11	2d ago	3 ↑ 0 ↓
②	DEV12	Apr 23	6 ↑ 0 ↓
②	DEV13	Apr 23	6 ↑ 0 ↓
②	DEV14	Apr 23	6 ↑ 0 ↓
②	DEV15	Apr 23	6 ↑ 0 ↓
✓	DEV17	Aug 6	2 ↑ 0 ↓
②	QA0-Team1	Jul 22	3 ↑ 0 ↓
①	QA0-Team2	2d ago	3 ↑ 0 ↓

Code Repo

51s ago ⚙️

COMMITS PER DAY

SUMMARY

TOTAL COMMITS	31	141	175
CONTRIBUTORS	13	26	27
TODAY	31	141	175
LAST 7 DAYS			
LAST 14 DAYS			

Quality

STATIC ANALYSIS

Blocker	1
Critical	0
Major	11
Issues	60

VERSION VERSION_NUMBER

99.9%	3d
RULES COMPLIANCE	TECHNICAL DEBT

CODE COVERAGE

UNIT TESTS

Success	100.0%
Failures	0
Errors	0
Tests	7,267

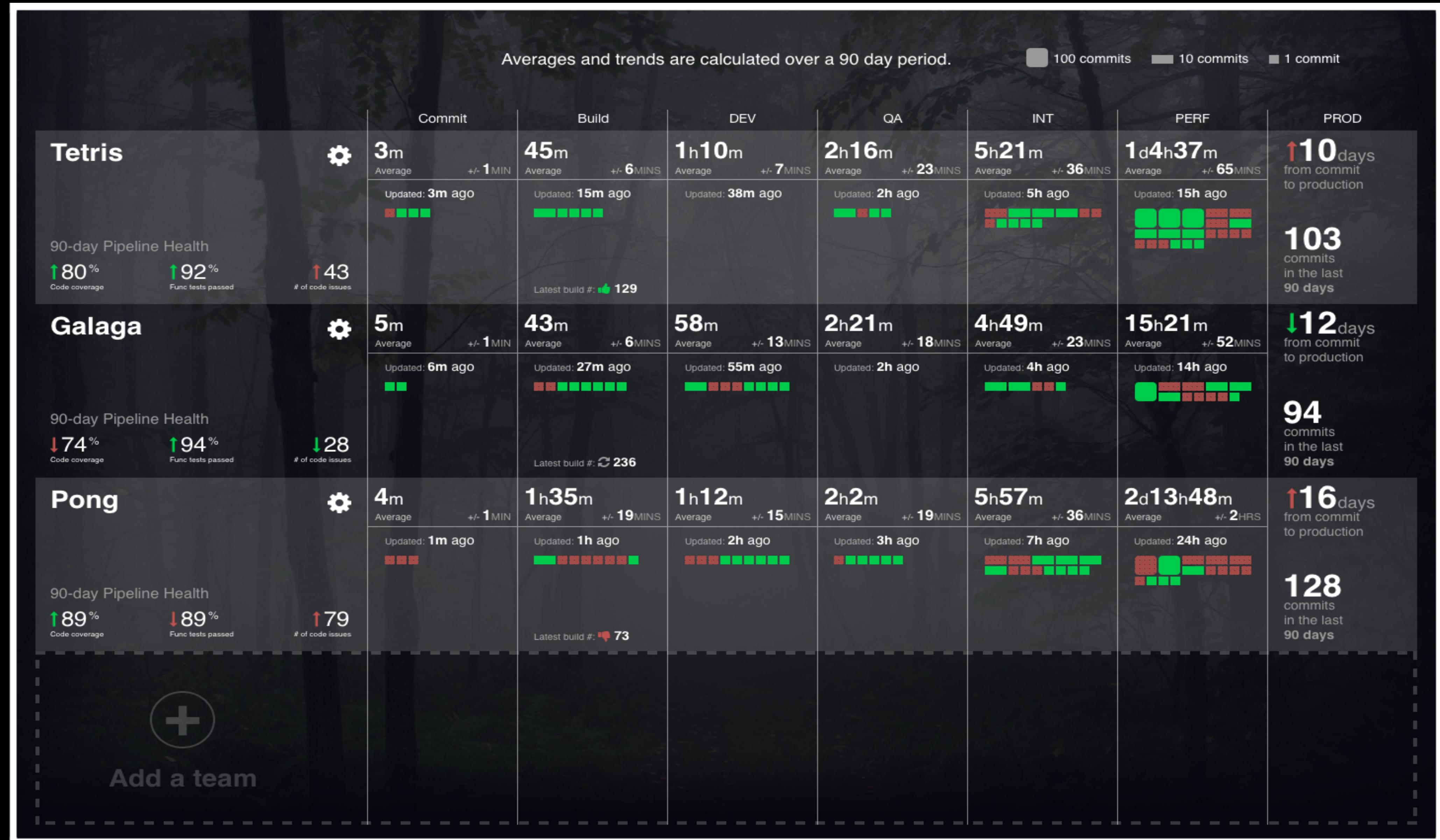
46s ago ⚙️

SECURITY ANALYSIS

!	Blocker	0
!	Critical	0
⚠	Major	214
	Minor	

FUNCTIONAL TESTS

Ch-High	100%	2d
Breaks	100%	Apr
CardJenk	100%	Apr
Unstable	100%	Apr



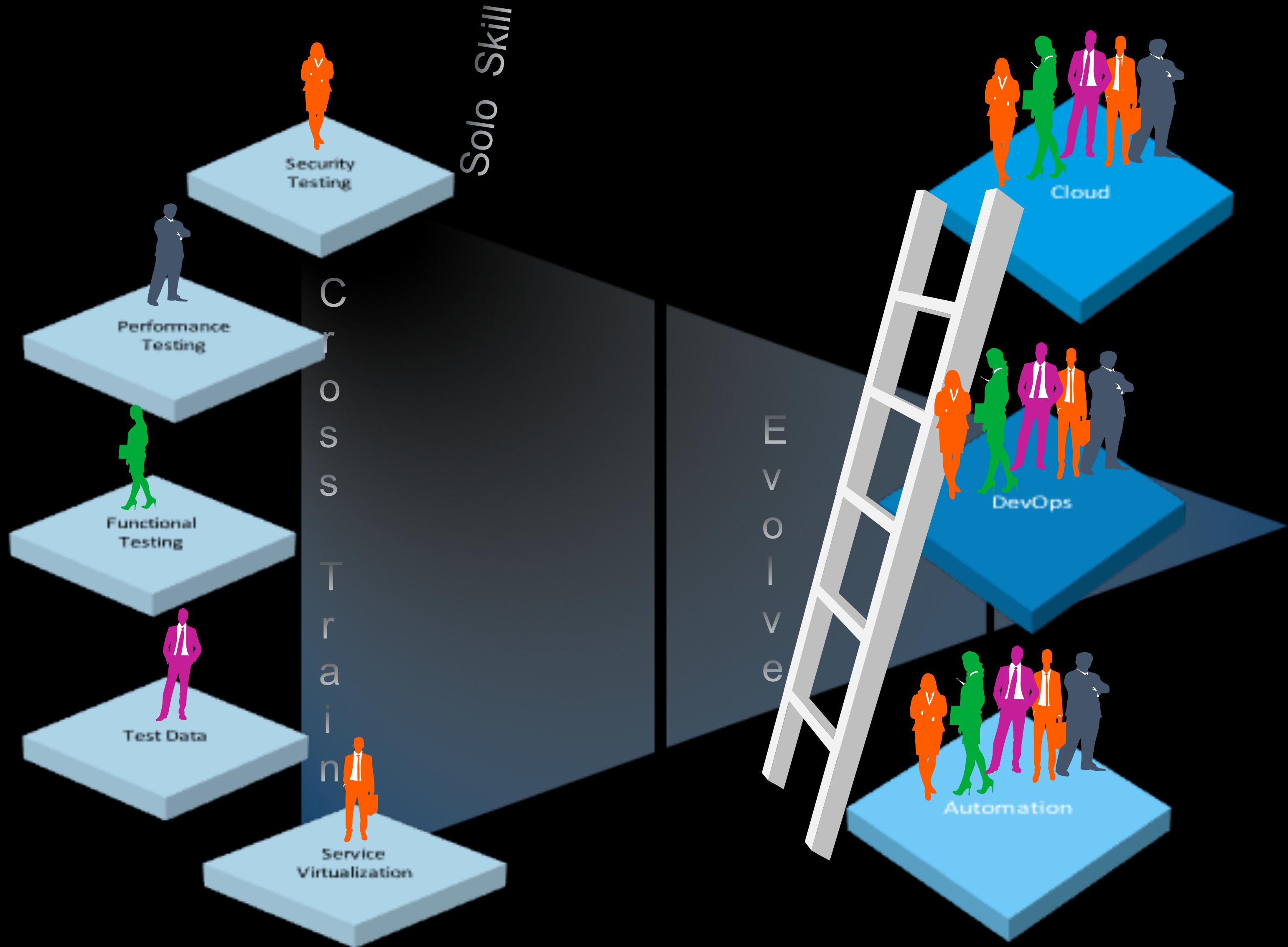
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People



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Scaling Continuous Testing: DIY



Coaching & Training

We provide Lean Agile Portfolio coaching, Agile Training, Hot Houses and more to support teams on their agile journey



Performance Testing

We provide root cause analysis, continuous performance validation and app monitoring to provide the best customer experience possible



Solutions Delivery Process

Our Value Stream Mapping, Delivery standards, AVS and more will help accelerate your delivery



Delivery Servicing

Have questions about Jira, VersionOne, NGTIR, Conductor or TECH Delivery Controls? We have your team covered



Idea & Story Breakdown



Design, Test, Build,
Continuous Integration, Continuous
Delivery



Delivery



Test Automation

Our TDM solution offers ETL & Scrubbing, Self Service Data Creation and Conditioning with our user-friendly OneSource tool



Test Data Management

We provide Lean Agile Portfolio coaching, Agile Training, Hot Houses and more to support teams on their agile journey



Service Virtualization

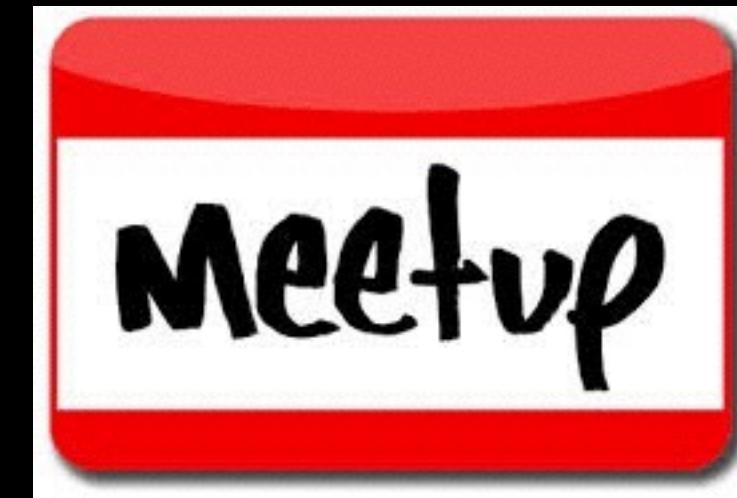
Our SeV team can quickly address your virtualization needs by getting you started with their Parasoft or HP Sev tools



Release Engineering

Our specialists provide Production Release automation with their Artemis tool, Collision Avoidance & Release Assessment and more!

Scaling Continuous Testing: Community



OPEN SPACE

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Scaling Engineering: Internal Conference



2015

1 location

2 days

1,200+ attendees

28 Tech Expo Booths

52 Sessions

0 Vendor

2016

2 locations

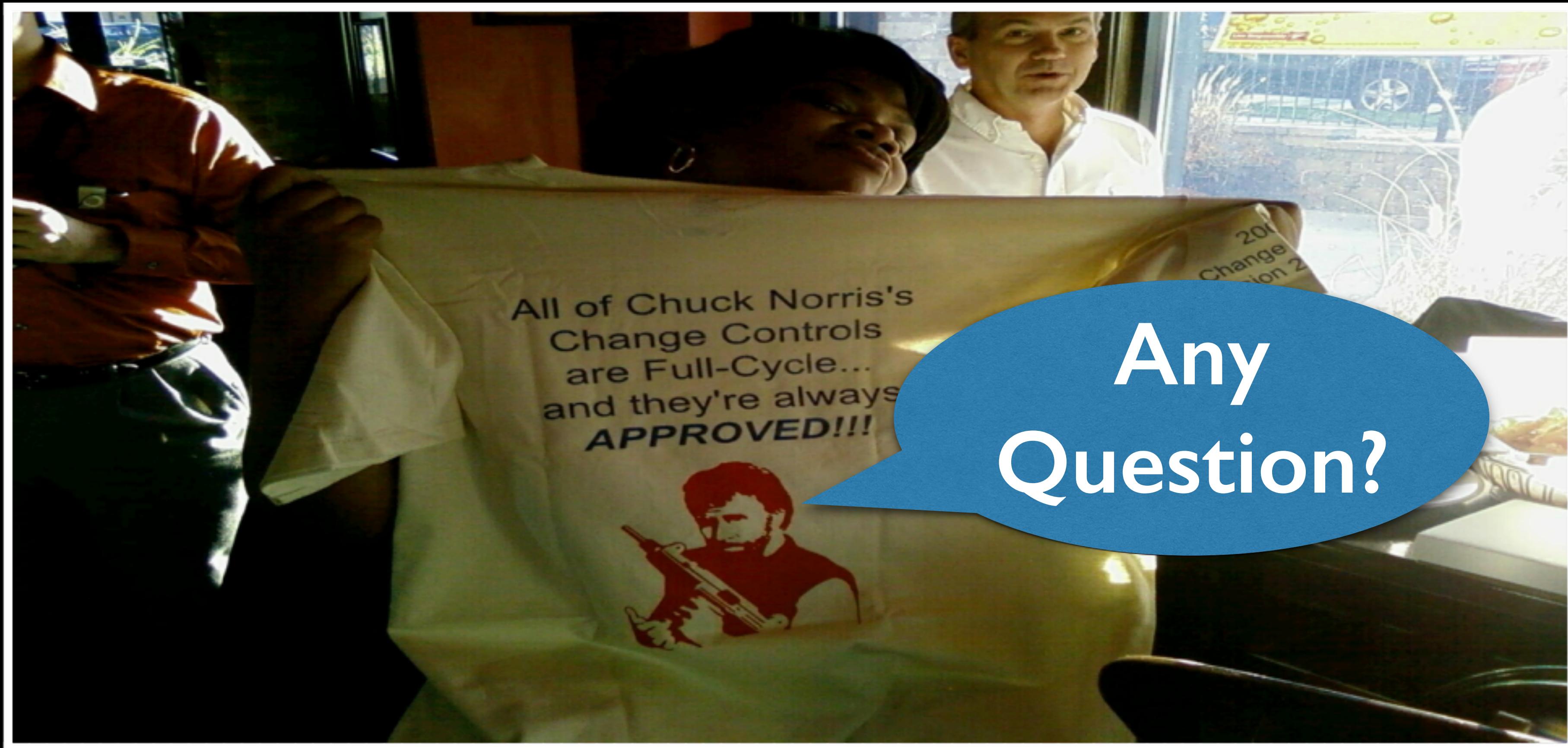
1 day

2,000+ attendees

54 Tech Expo Booths

146 Sessions

0 Vendor



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