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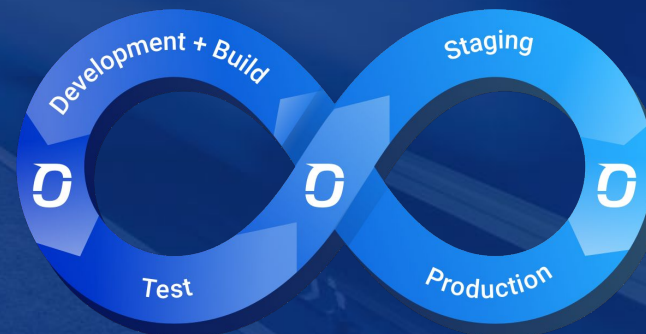


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**Thank you for joining us!**

**We will begin in just a few moments**



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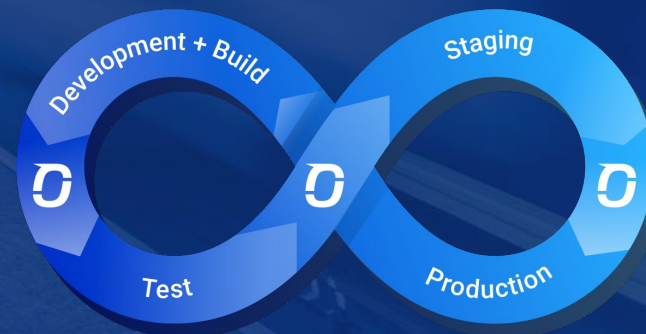
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# ● The Definitive Checklist for Delivering Reliable Kubernetes-based Applications

● June 11, 2020



# Welcome...



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Senior Software Engineer



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Director, Product Marketing



# Thanks for joining!



**This is a live  
webinar!** 🤯

NOT pre-recorded



# Today's Agenda

- The State of Software Quality Today
- The Challenges of Delivering Reliable Kubernetes-Based Applications
- Definitive Continuous Reliability Checklist

## Phase 1 (Build/Testing):

Item #1: Static Analysis

Item #2: Unit Tests

Item #3: Integration/End-to-end testing

## Phase 2 (Staging/UAT):

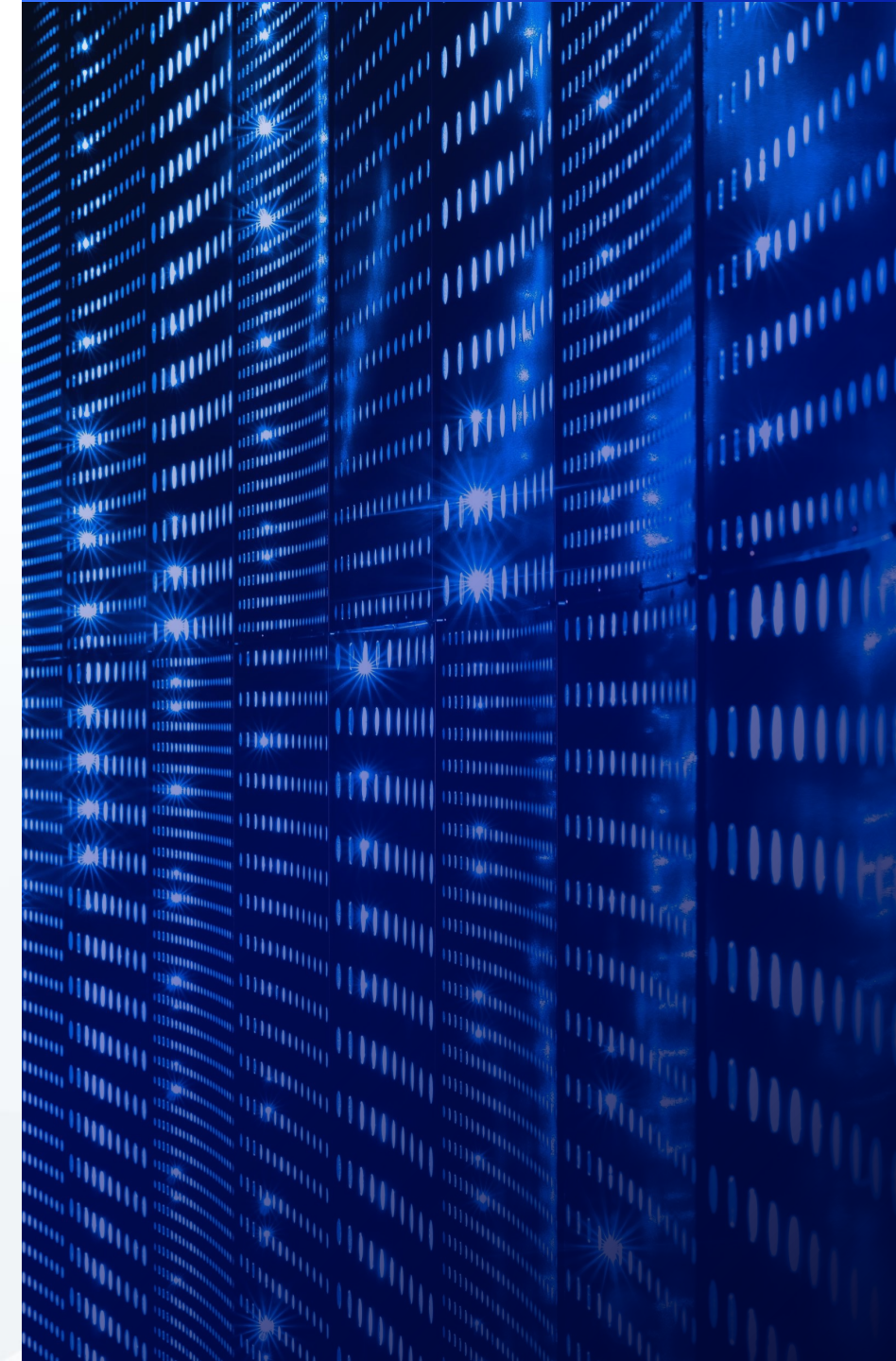
Item #4: Performance/Scale testing

Item #5: Staging go-no-go decision

## Phase 3 (Production):

Item #6: Build Rollout

Item #7: Rollback Criteria & Production Feedback Loop



# The State of Software Quality

(Source: [bit.ly/overops-survey](https://bit.ly/overops-survey))

**70%** of engineering professionals say **quality is paramount to speed**

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**69%** of respondents spend a **day per week or more troubleshooting code-related issues**

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**53%** of participants experience **customer-impacting incidents at least once a month**

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**20%** of organizations **release code one or more times per day**

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**45%** of respondents plan to adopt **containers** in 2020

# The Challenges of Delivering Reliable Kubernetes-Based Applications

- Managing the transition from a monolithic application to microservices.
- Orchestrating deployments across multiple services.
- Effective testing.
- Polyglot programming.
- Tracing transactions through the system.
- Logging across microservices.



# Scared or Confident?

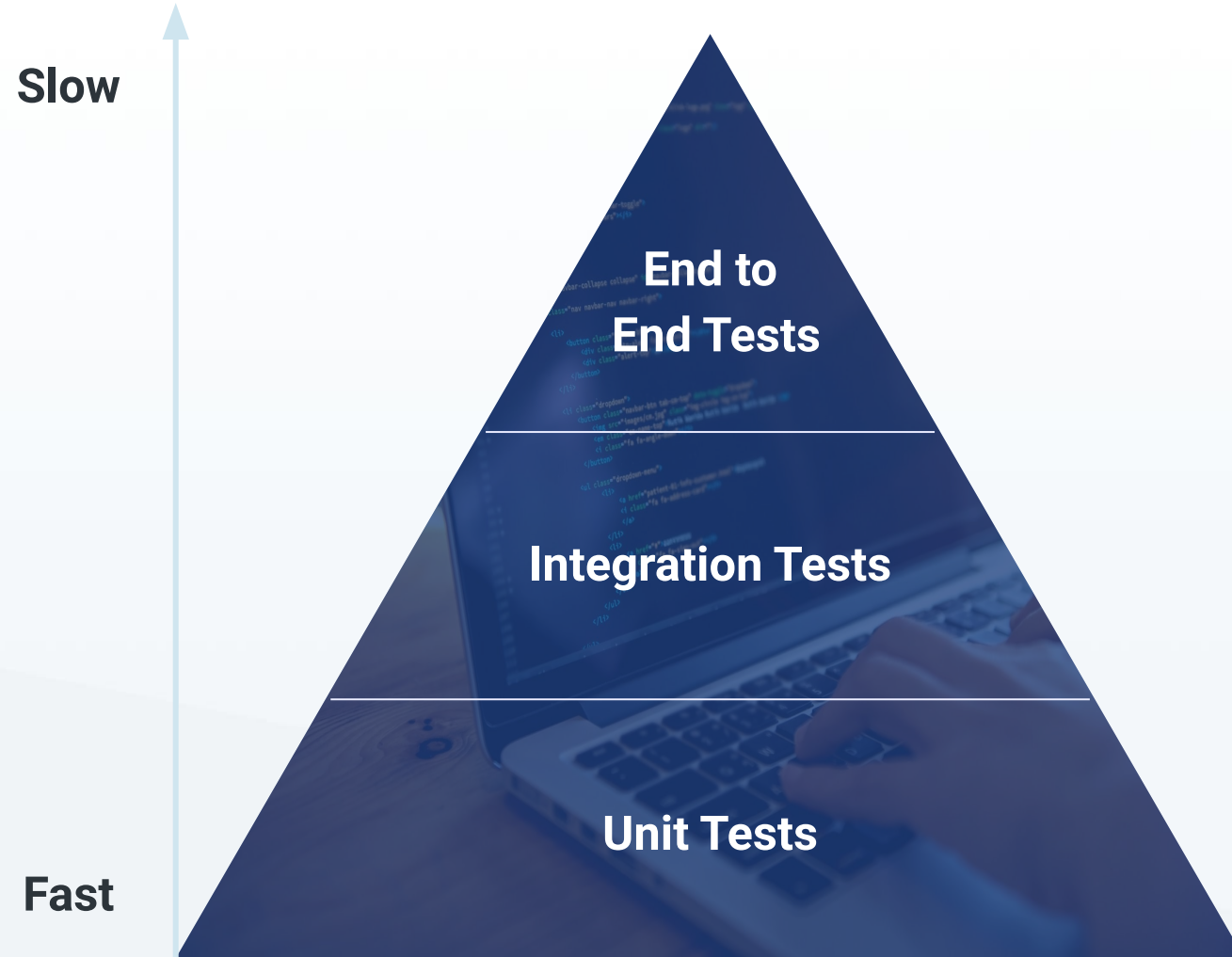


# How can we release on a regular cadence with a high level of confidence?

## Recommendations:

- Examine your business needs.
- Determine what your release cadence is.
- Research available solutions.
- Know where to invest your time & money.

# Test Pyramid





THE DEFINITIVE

# Continuous Reliability Checklist



# Phase 1

Building/Testing



# Static Analysis

## Goals:

- Finding “bugs”.
- Enforcing industry standards.
- Identifying security vulnerabilities.
- Maintaining a consistent coding style.

# Unit Testing

- It's fast!
- Not integration tests.
- Difficult to test the right things.





# Integration/End-to-end testing

- Testing components individually.
- Testing components with other components.
- User testing.
- Business use cases.

# Demo



# Phase 2

Staging/UAT



# Performance/Scale Testing

- Browser response timing.
- API performance.
- Comparing performance measurements over time.

# Staging go-no-go decision

- What is your error tolerance level? (Bugs, performance, etc)
- Dashboarding of previous items.
- Can you rollback quickly?

**Where is your  
confidence level now?**



# Phase 3

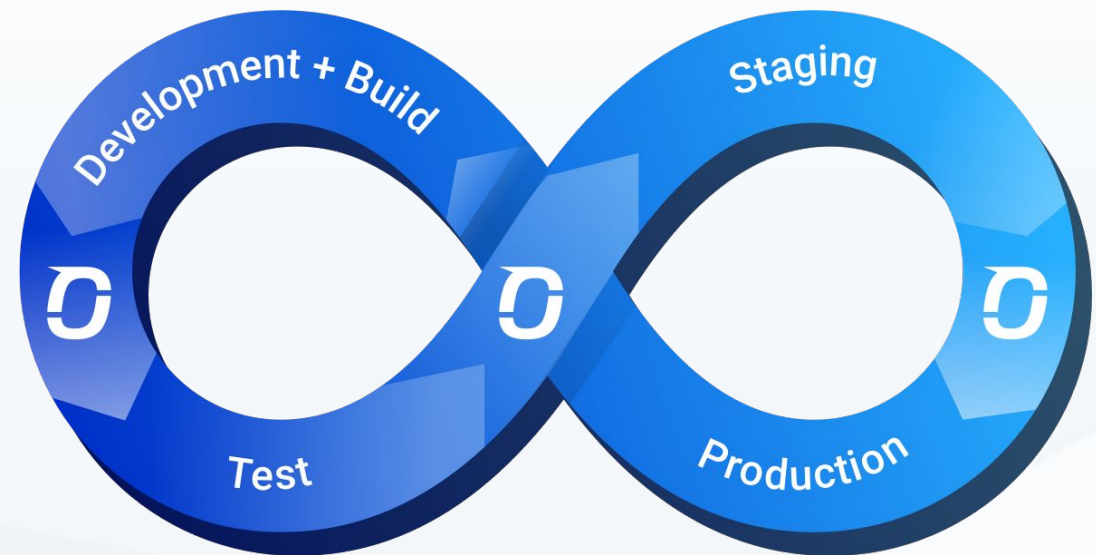
Production

# Gradual Rollout

- Rolling Strategy
- Canary builds
- When should you be doing builds?
  - API changes that break compatibility

# Feedback Loop

- Runtime code analysis.
- APM & Logs.
- Rollback or move forward.
- Issue tracking.





**Yet code still breaks!**



# Demo



# Definitive Continuous Reliability Checklist

## Phase 1 (Build/Testing):

Item #1: Static Analysis

Item #2: Unit Tests

Item #3: Integration/End-to-end testing

## Phase 2 (Staging/UAT):

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WEBINAR EXCLUSIVE OPPORTUNITY

# State of Software Quality Report

Download the report  
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[bit.ly/overops-survey](https://bit.ly/overops-survey)

2020 Report:  
**The State of Software Quality**





# OverOps

Questions?

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# Where does CR fit into CI/CD?

