

Increase App Confidence using CI/CD & Infrastructure as Code

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Agenda

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Meet + Greet
- 2 **Testing**
Smoke Tests
- 3 **Broken Deployments**
It worked on my laptop
- 4 **Increasing App Confidence**
Test Releases in Target Environments using Infrastructure as Code + CI/CD
- 5 **Demo**
Show + Tell

Developer Advocate



Angel Rivera

 circleci



@punkdata

Testing

Verifying Code

What is Testing?

execution of test cases and **comparing** their
results with the **expected** results

Multiple Types of Testing

Types of Tests

- Unit Tests
 - Smoke Tests
 - Functional Tests
 - Integration Tests
 - Regression Tests
- Limited in Scope
 - Focused
 - Fast
 - Larger in Scope
 - Generally Slower
 - Expensive

Smoke Tests

Smoke Tests

simple preliminary testing that
reveals **failures**

quickly verifies essential functionality before
executing more **comprehensive** testing

Broken Deployments

It worked on my laptop

Continuous Delivery

practice of building, testing, and **delivering** changes to code and user environments using **automated** tools



Code



Scan for
Vulnerabilities

CI/CD



Test



Production
Kubernetes

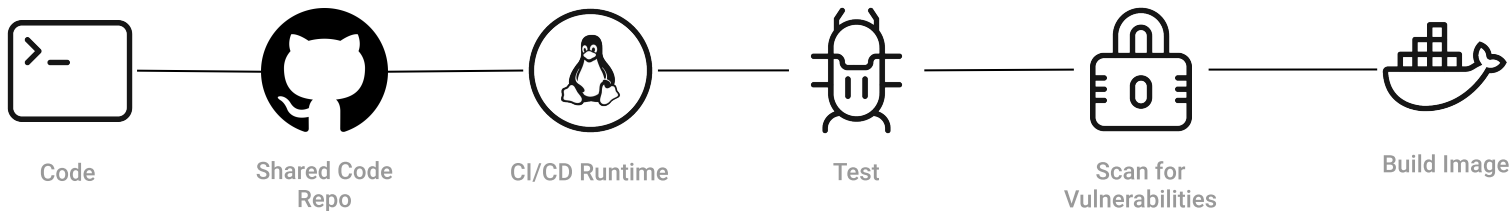
CI/CD?

CI == “Continuous Integration”

CD == “Continuous Deployment”

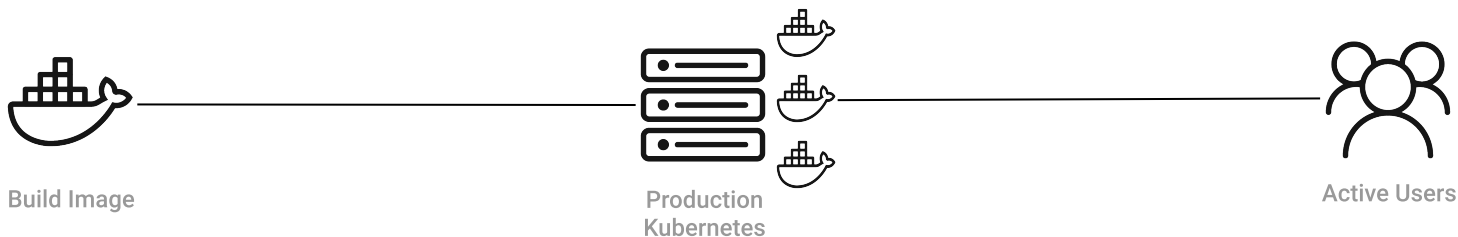
Continuous Integration

the **practice** of merging all developers' working copies to a **shared** code repository



Continuous Deployment

the **practice** of automatically deploying new software releases to **target environments**



Happy Path Deployments

All the jobs **successfully** complete



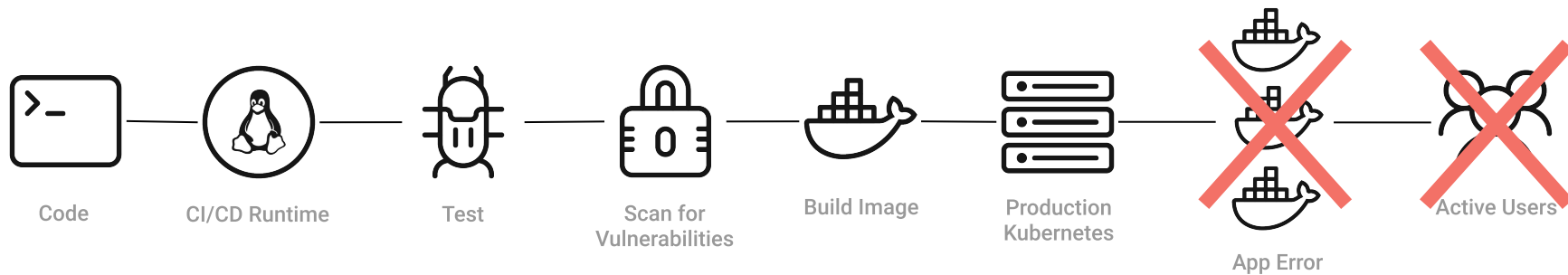
Pre-Deploy Results

Pre-Deploy results can be **Deceptive**

Deceptive Results

Deployments **Fail** Unexpectedly

Something **Failed** Post Deployment



Common Post Deployment Failure Reasons

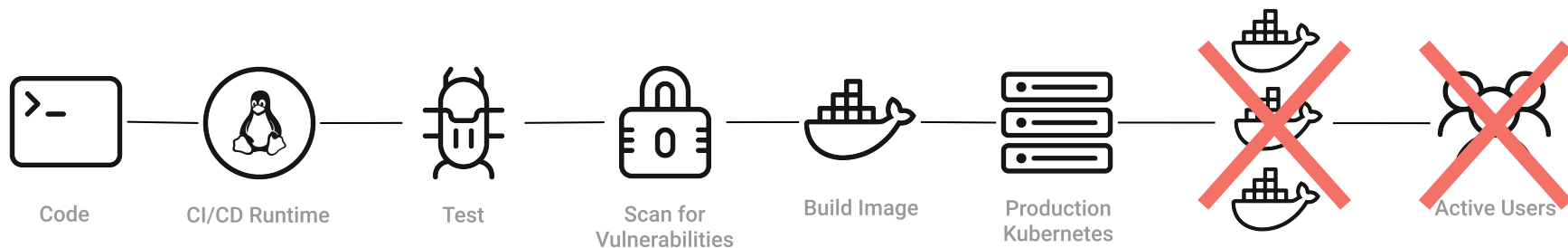
- Defective Configurations
- Integration Faults
- Invalid Credentials/Authentication

Increasing App Confidence

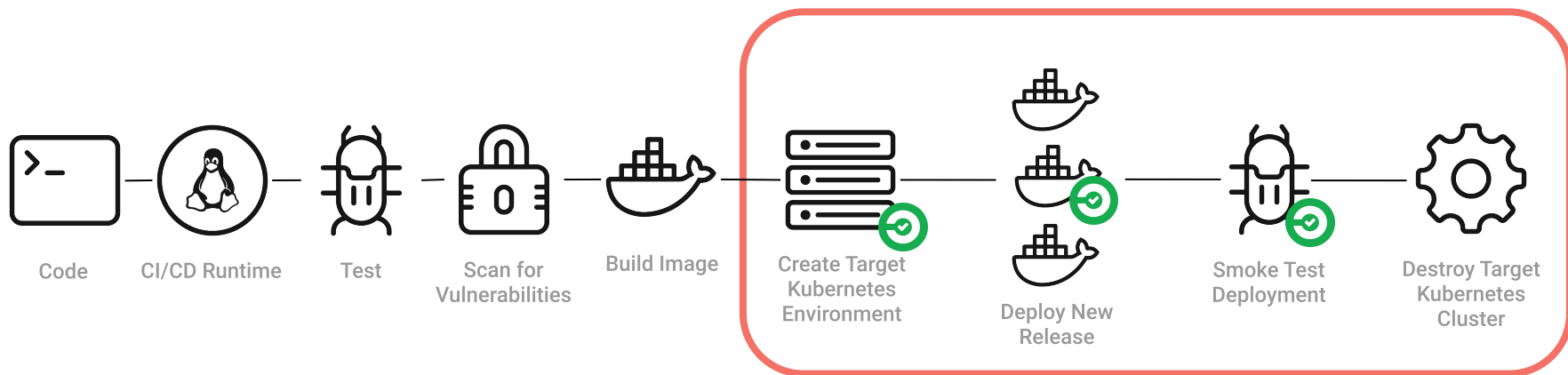
Test Releases in Target Environments using Infrastructure as Code + CI/CD

go fast confidently and reliably

Failed Production Deployment



Test Release prior to Final Deployment



Smoke Testing Release Pipeline



verify deployments using smoke tests in
target environments

develop **fast** pipelines that smoke test
releases

Infrastructure as Code (**laC**) **create** + **destroy**
target environments

laC also eases management + changes to
target environments

laC also eases management + changes to
target environments

Benefits of Smoke Testing Target Environments

- Gain valuable insights
- Expose easy to miss Bugs
- Verifying app behavior within target environments
- Reject failed software releases

Demo

Let's see it in action

Thank you.