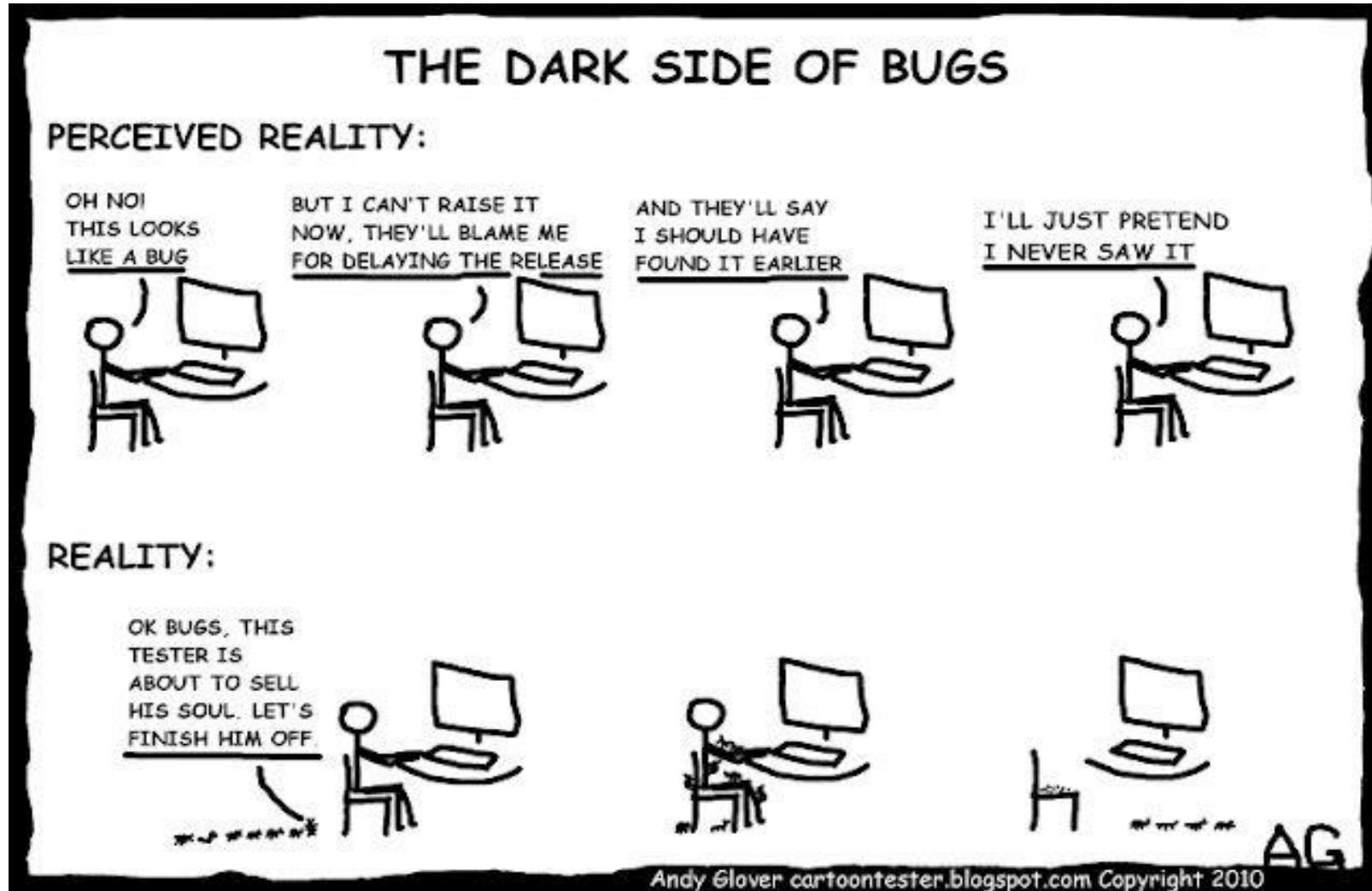# Continuous Integration and Delivery
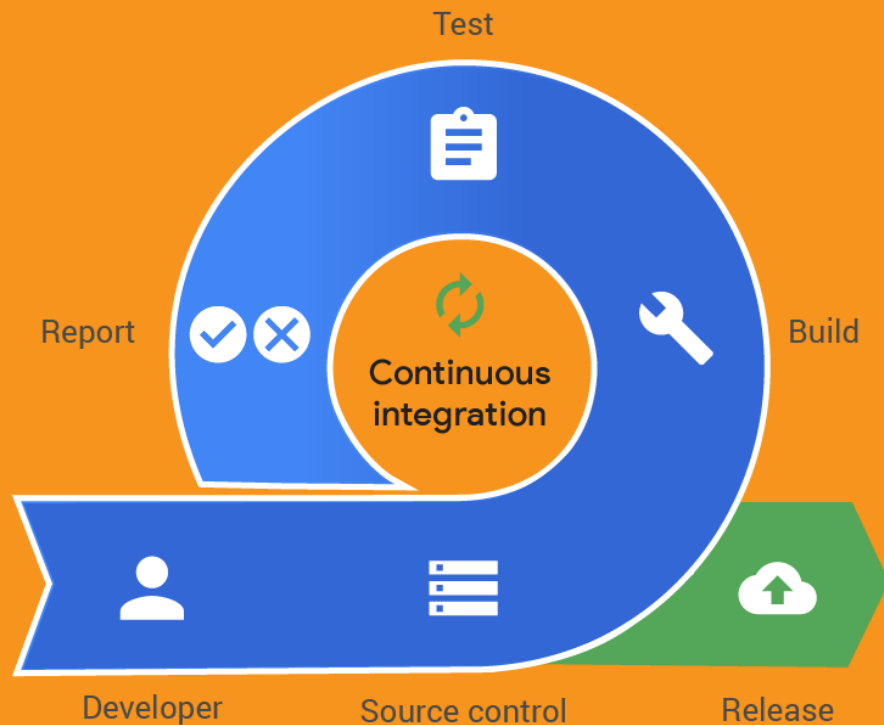
Delivering Quality Solutions Faster

Tom Vaillancourt, Program Manager & Principal Software Engineer, Sunrise Labs

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The Dark Side of Bugs

What is CI/CD

It's a Best Practice

Continuous Integration is a software development practice where members of a team *integrate their work frequently*, usually each person integrates at least daily — leading to multiple integrations per day. Each integration is *verified by an automated build* (including test) to detect integration errors as quickly as possible.

"You achieve continuous delivery by continuously integrating the software done by the development team, building executables, and running automated tests on those executables to detect problems. Furthermore, you *push the executables into increasingly production-like environments* to ensure the software will work in production."
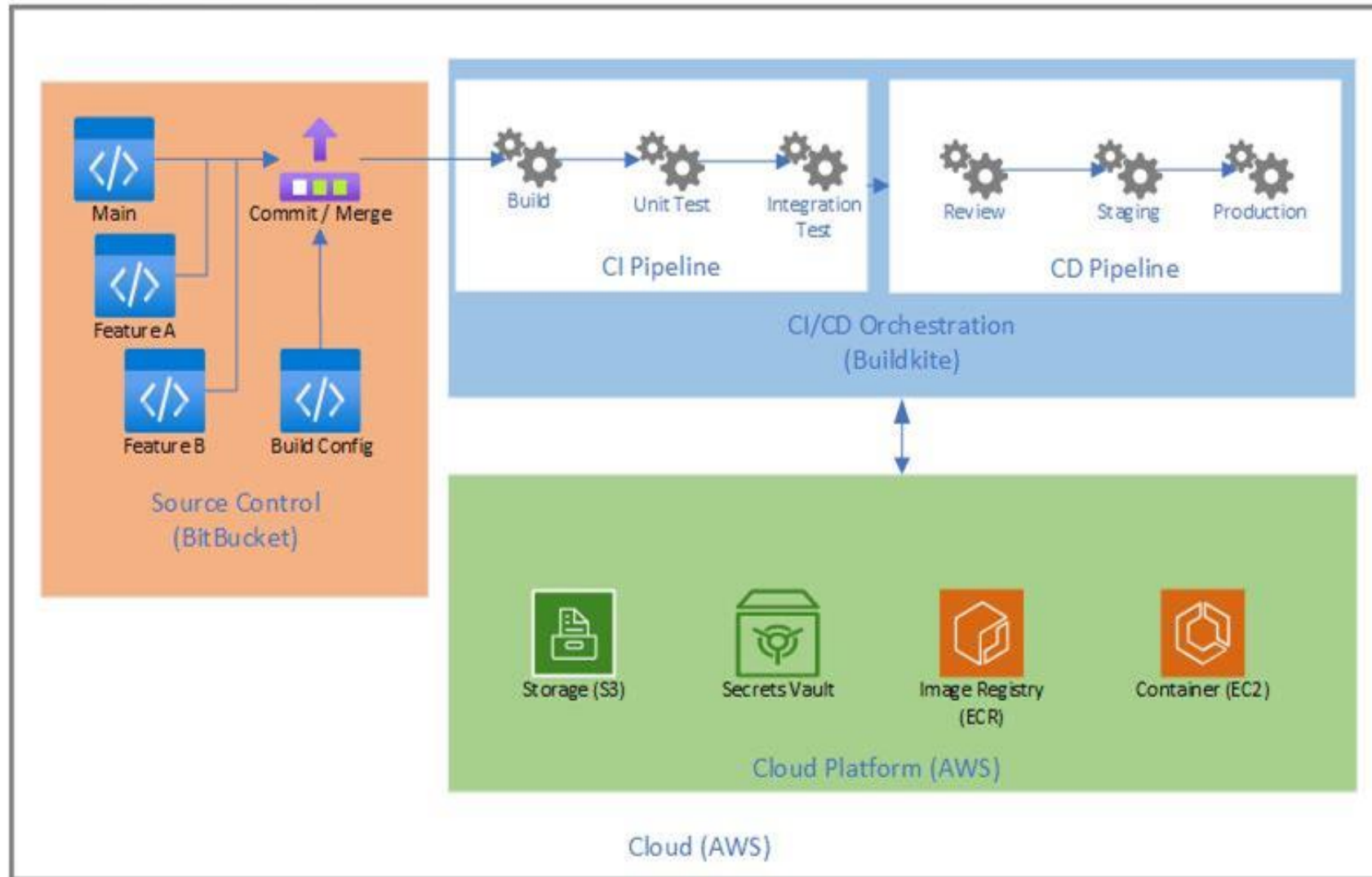
—Martin Fowler

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Concepts and Strategies

Supporting CI/CD Principles

- **Infrastructure as Code (IaC)**
  - Tools and environments are tagged and versioned to provide a consistent solution

- **Containerization**
  - Encapsulate the tools and environments to easily spin up project development

- **Automation**
  - Discourage manual processes that are not reproducible or fast

- **Cloud Based**
  - Elastic
  - Security

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Typical CI/CD Workflow

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Roles and Responsibilities

As an Automation Engineer

- Setup build tool
- Associate with Source Control
- Define the steps to build your application
- Create build steps (compile and test)
- Add the pipeline.yml to the root of your repo
- Set up a persistent storage for your build artifacts

As a Developer

- Create a story and feature branch in JIRA
- Checkout the feature branch in git
- Write code and unit tests
- Commit code, run the build to verify
- Store artifacts

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Savings and Costs

- **Process Savings**
  - Find bugs
  - Production delivery
  - Re-use of build scripts
  - Reproduce environments
  - Shorten ramp up time

- **Operational Savings**
  - Pay for what you use
  - Reduce maintenance

- **Costs**
  - Tools and licenses
  - Cloud environment
  - Setup costs

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THANK YOU!

Please visit our website for more information, and to view our portfolio: www.sunriselabs.com

Or, contact us directly

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We look forward to learning more about your needs and development plans!!

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