You make **possible**

GitHub and Continuous Integration (CI) for Python Network Developers

Stuart Clark
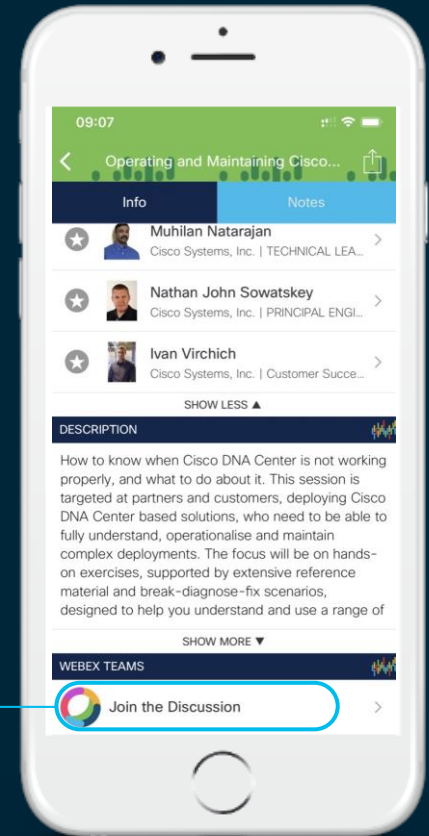Developer Advocate /w Cisco DevNet
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DEVNET-2315

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Agenda

- Configuration management

- Managing operational complexity

- The future of infrastructure as code

- Continuous Integration (CI)

**Warning this presentation contains cats

Schrödinger's code.......

Code has been written, but not tested, and is in state of neither working nor failing until it is observed

Schrödinger's semicolon

Code Quality?
High-quality Code Identifiers

Does it do what it is meant to do?

Does not contain flaws or Glitches?

Should be easy to read, uphold, and extend?

Hide and seek champion...

;

since 1958

Kernighan's law:

"Debugging is twice as hard as writing the code in the first place. Therefore, if you write the code as cleverly as possible, you are, by definition, not smart enough to debug it."

Why Code Quality Matters?

Better code quality and less bugs

New team members get up to speed quicker

Engineers will write more comments and test code more

What is "Linting"?

"Linting" means running a basic quality tool against your code. The tool will check your code syntax and provide instructions on how to clean it."

Linting, static analysis, and alerting
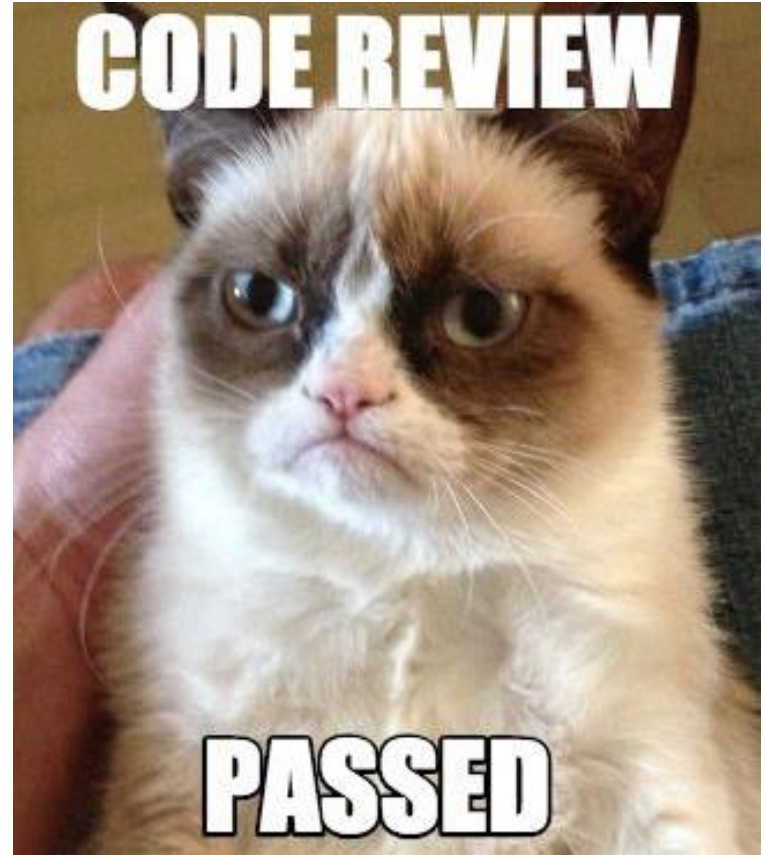
Logical Lint
Code errors
Code with potentially unintended results
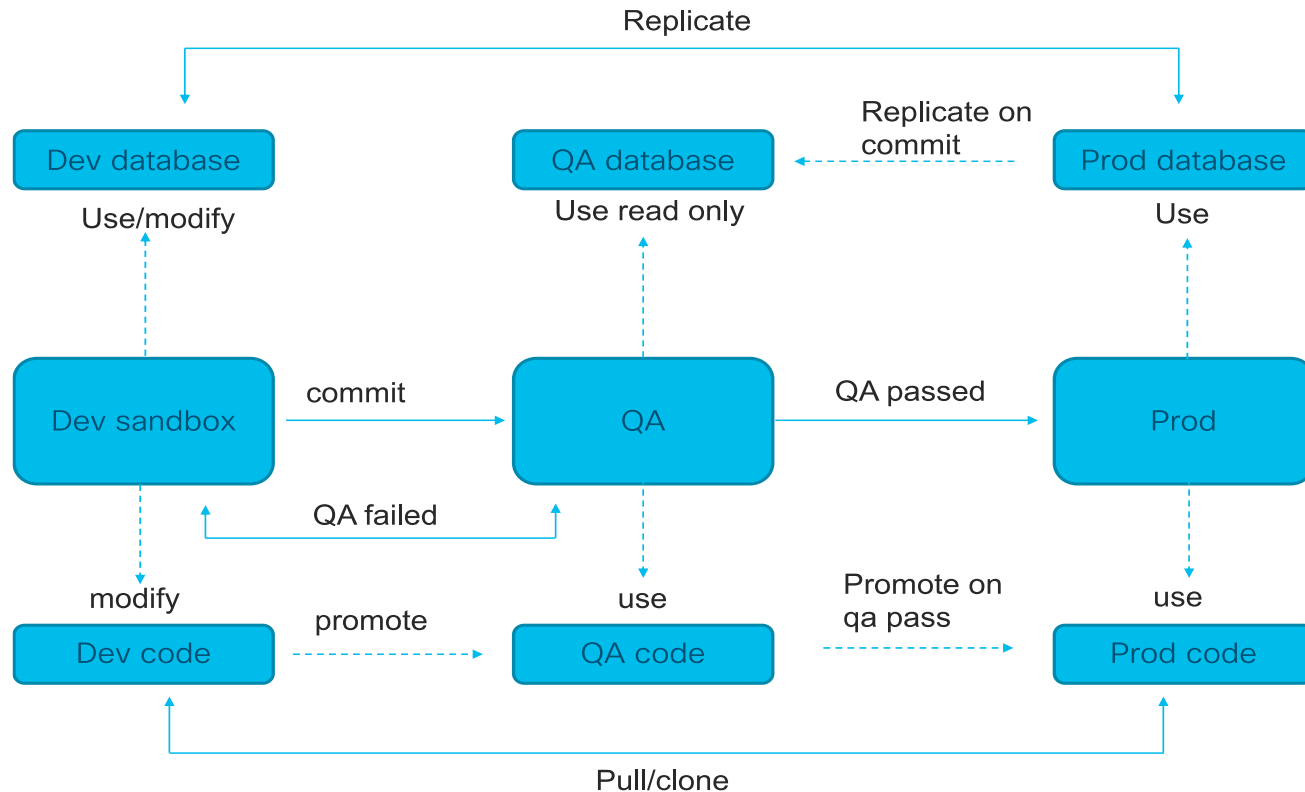Dangerous code patterns

Stylistic Lint
Code not conforming to defined conventions

The future of infrastructure as code.....

Everything as Code (EaC)

Replicate

Dev database	QA database	Prod database
Use/modify	Use read only	Use

Replicate on commit

Dev sandbox	QA	Prod

commit → QA passed →

QA failed

modify	use	Promote on qa pass	use

Dev code	QA code	Prod code

promote →

Pull/clone

Continuous Integration Tools

Continuous Integration Options

Jenkins

Travis CI

GitLab CI

Azure Pipelines

Github Workflows

GitHub Actions

"GitHub Actions enables you to create custom software development life cycle (SDLC) workflows directly in your GitHub repository"

Demo Time....

Summary

Configuration management

Managing operational complexity

The future of infrastructure as code

Continuous Integration (CI)

Got more questions? Stay in touch!

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