



Linux Users Group @ UT DALLAS

Continuous Integration / Continuous Deployment

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2017-10-21

Overview

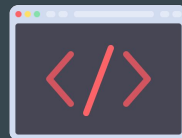
- Introduction to CI
- GitHooks
- External Tools
 - travis-ci
 - Jenkins
 - Buildbot

Introduction to CI/CD

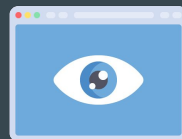
“Traditional” Development



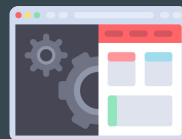
Write code



Occasionally test



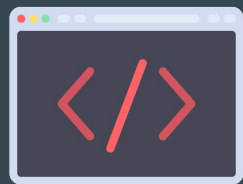
Eventually Deploy



What's wrong with this model?

- People have to do everything **manually**
- **Individuals** are responsible for testing
- Deployment is not **automatic**
- **Disconnect** between development, testing and deployment
- No **global** view
- People make mistakes
- People get lazy or forget

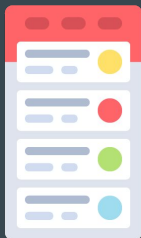
Continuous Integration



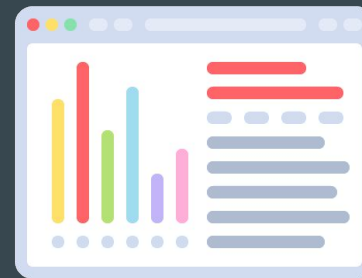
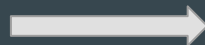
Write



Test Automatically

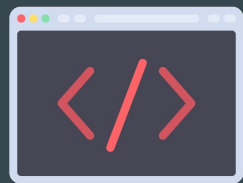


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Global Dashboard

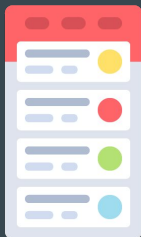
Continuous Delivery



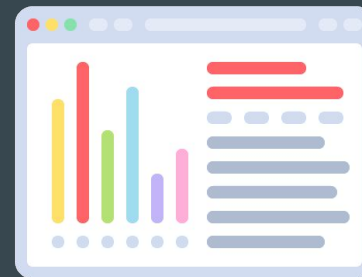
Write



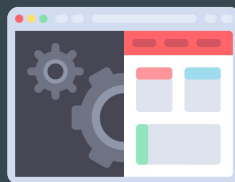
Test Automatically



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Global Dashboard



Deployment Pipeline

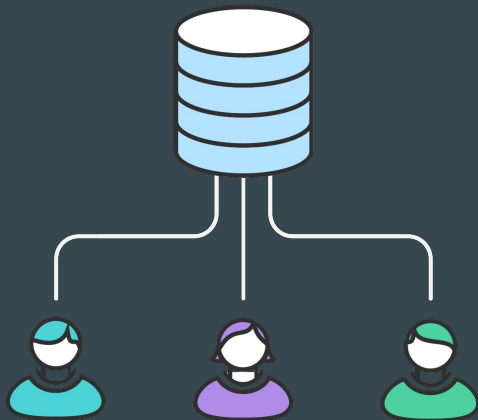
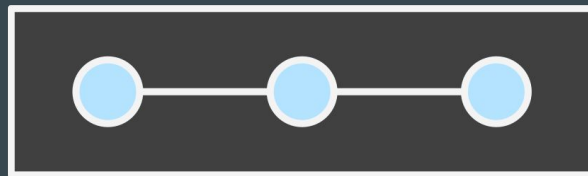
What kind of tests?

- Code linting
 - Enforcing **style** guidelines and best practices
- Build tests
 - Ensuring code **compiles** correctly
- Unit tests
 - Verifying **proper operation** of individual units of code
- Integration tests
 - Validating software modules as a **group**

GitHooks

A brief overview of Git

Developers write code,
creating snapshots called
“commits”

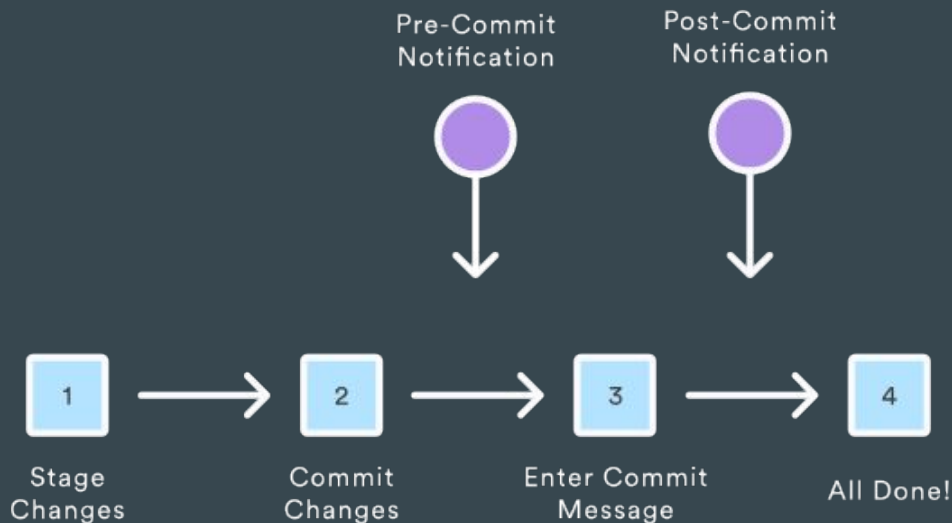


One of more developers
push and pull their code in
a central repository

Git “Hooks”

Git hooks are scripts that run automatically every time an event occurs in a Git repository.

- What kinds of events?
 - Pre/post commit, ...



Demo!

External Tools

Travis CI

- Integrates well with **GitHub**
- **Free** for Open-Source projects
- Reads from a **.travis.yml** file in your repo
 - **Easy** to set-up



Demo!

Jenkins

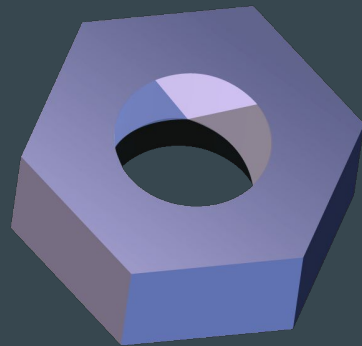
- **Self-hosted automation server**
- Define **hooks**, **tasks**, and **pipelines**
- Extensible and configurable with **plugins**
- More **integrations** than other solutions



Demo! (If there's time + interest)

Buildbot

- **Self-hosted job scheduling system**
- More of a **framework** than a ready-to-use app
- Better suited for **complex** release tasks
- Configurable via **Python**



Questions?