Infrastructure & Go

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Outline

- Shortest ever intro to Docker

- Why is Docker written in Go?

- Go, the bad parts

- Cool infra tools we use in Go

What is Docker?

Docker is a runtime for containers.

Whoa what's a container?

A container is a concept made from linux namespaces, cgroups, & pivot roots.

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1. Fully Static Binary

out-of-box building binaries with go
you do not get fully static binaries
(libc is not included, but why would this ever
be missing?)

you *can* get a **fully** static build with
specific flags to go build

1. Fully Static Binary

easier to install

bootstrap from there
(ie. scp binary to server, and build everything else w it)

say sayonara to dependencies

2. Multiple Architecture

linux

darwin

windows

freebsd

Feel the power

3. A neutral language

4. Features we need

channels

async

syscalls (low level bits)

5. go fmt

stop arguing about tabs vs. spaces

I DON'T KNOW WHAT WE'RE YELLING ABOUT

5. **go fmt**, **go lint**, etc...

go vet: vet packages
go lint: lint code
go doc: get docs for any package
go get: fetch dependencies
go test: run test suite
go run: run project w/o full build

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Haters gunna hate

Bring on the comments section..

> "Something something new hipster lang"

Lol I can't even

> "Erlang or death!"

Please Go is easier than Erlang.

> "Javascript but on the server"

Yavascript, huh...

Real problems...

Package versioning

Generic, meh we may not need...

go test is not ideal

err's everywhere

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NSQ

A real-time distributed messaging
platform

We use it internally to distribute
github webhooks to a series of
consumers we built.

Docker Master Binaries

Automated building of Master Binaries

This happens on every push to the master branch of Docker.

NSQ gets the hooks and passes it here.

Docker Master Docs

NSQ also sends the webhooks to an application which automates building our docs.

With every push to the master branch of docker, the docs get pushed to a "master docs" url.

Patch Parser

Yet another consumer of the NSQ webhook dispatcher.

Parses each new PR to the Docker project, applies appropriate label and comments if things are missing.

Leeroy

We use Jenkins as our CI server.

However the Jenkins Github PR plugin was meh.

Found a cool project written in python in rewrote in Go. Single binary/typed languages for the win.

Random notable other projects

consul
etcd
weather
udict
slex
goimports

Fin.