

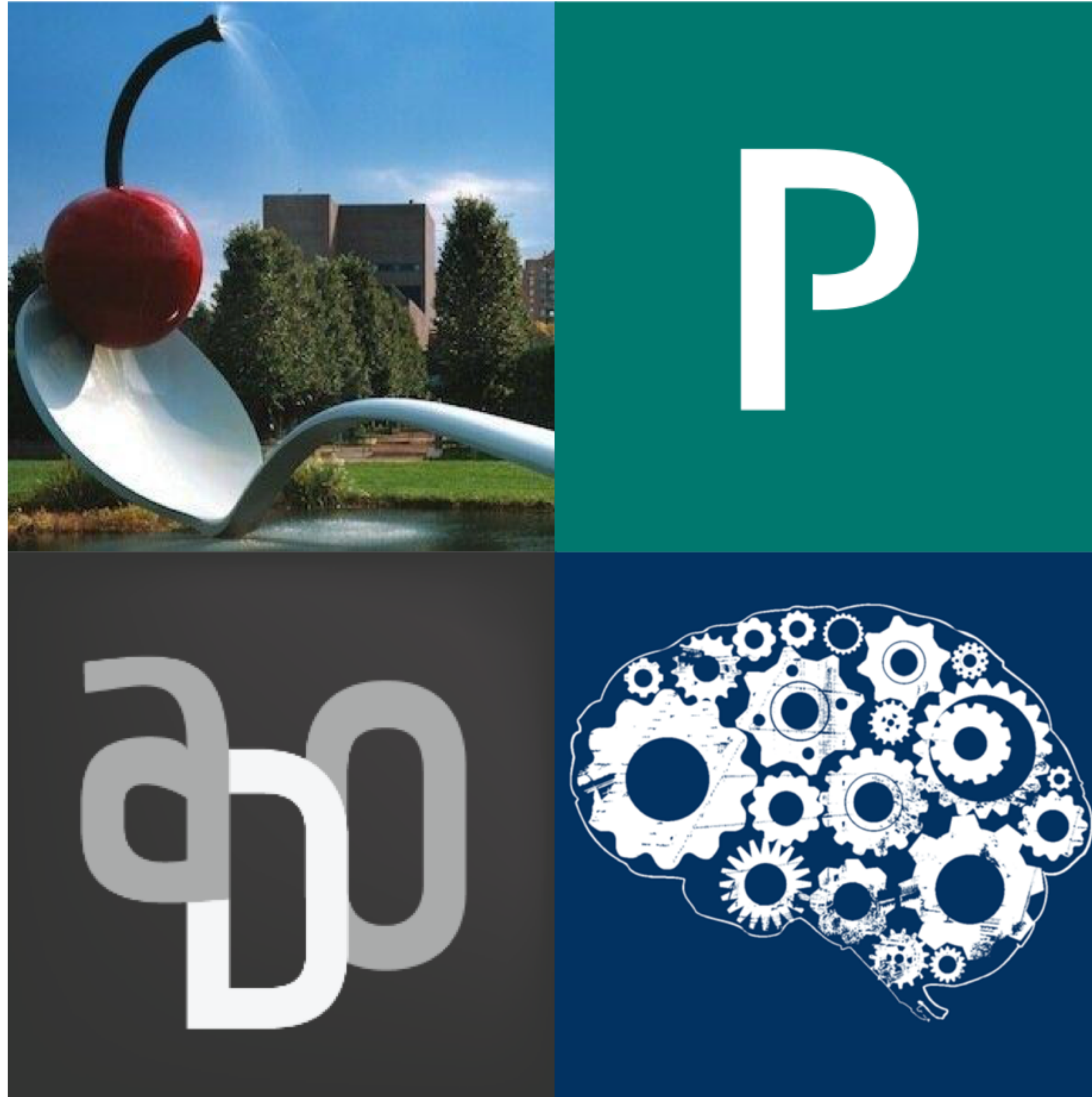


Beyond Ad-hoc Automation To Structured Platforms

Bridget Kromhout

Bridget Kromhout

lives:
Minneapolis,
Minnesota



works:
Pivotal

podcasts:
Arrested
DevOps

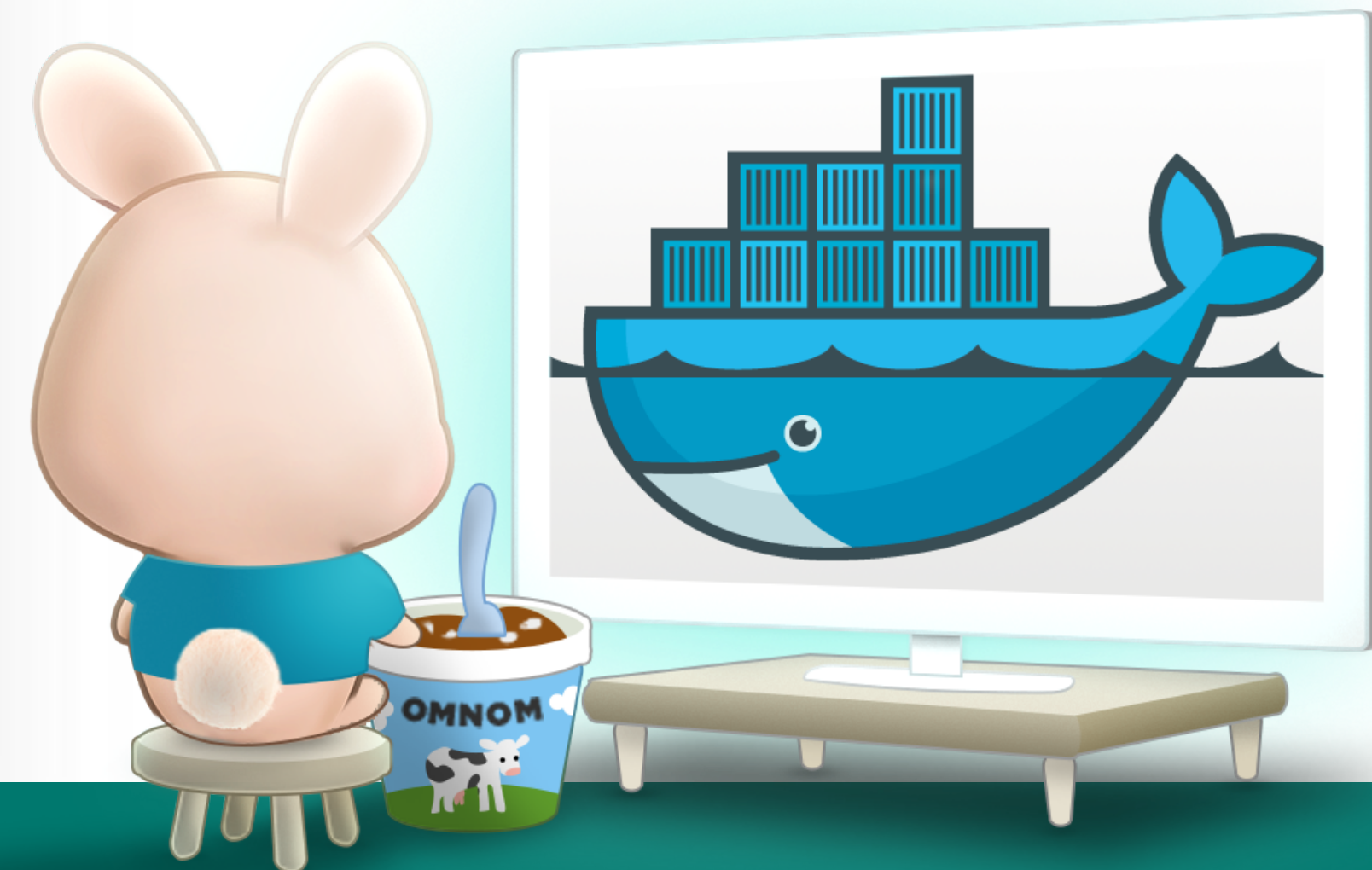
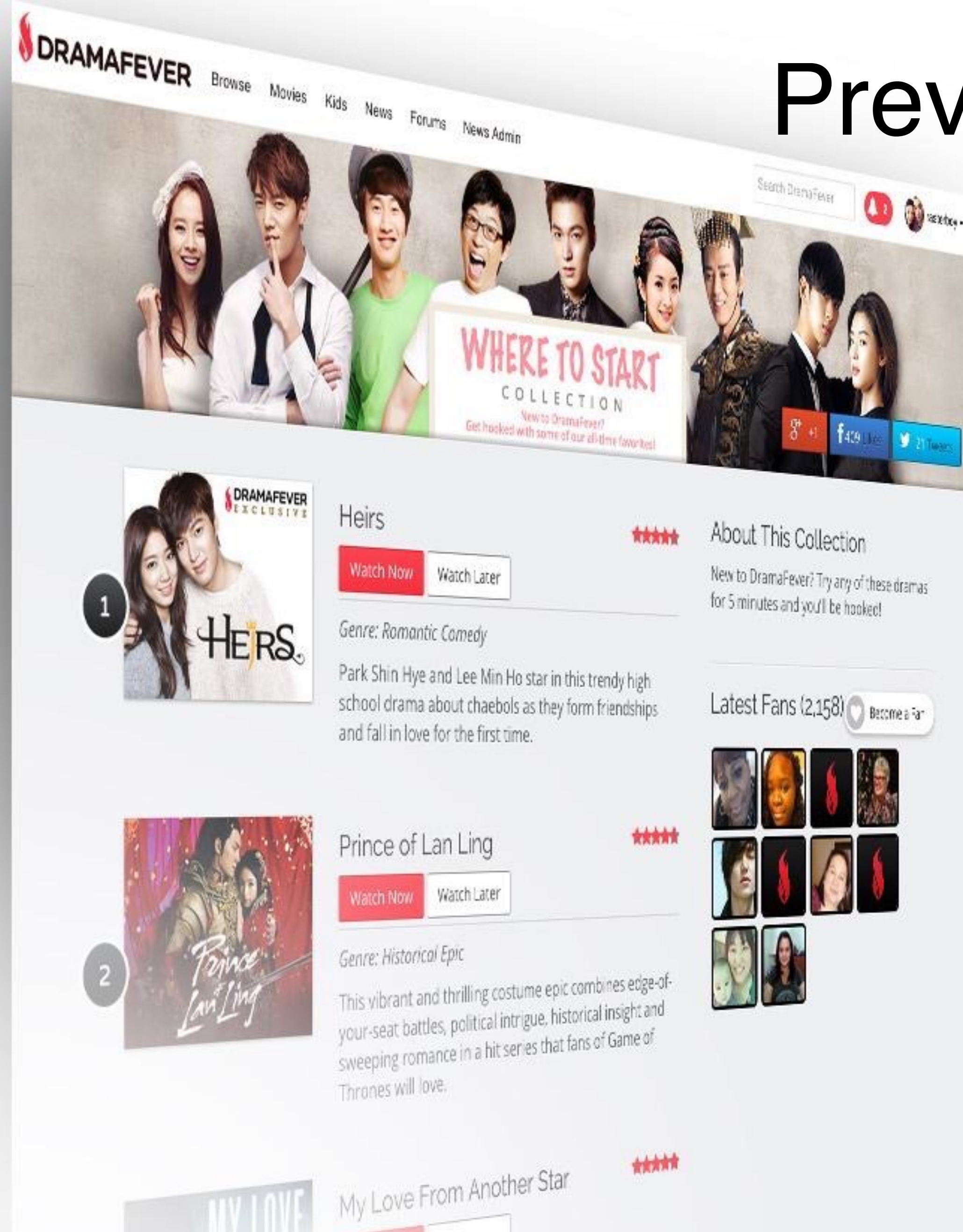
organizes:
devopsdays



navigating infrastructure choices

Previously, on *Platform Tales*...

Docker in Production: Reality, Not Hype





So I tied an onion to my belt...

Deconstructing
a monolithic
Python/Django
app into...

Go microservices

(as was the style
at the time)

Peak load: tens of thousands of requests per second
Traffic variance: swings 10-20x throughout the week



 DRAMA FEVER



J. Paul Reed

@jpaulreed



Following

"You can't hate the curl bash and be OK
deploying from Github." - @petecheslock
#devopsdays

RETWEETS

8

LIKES

3



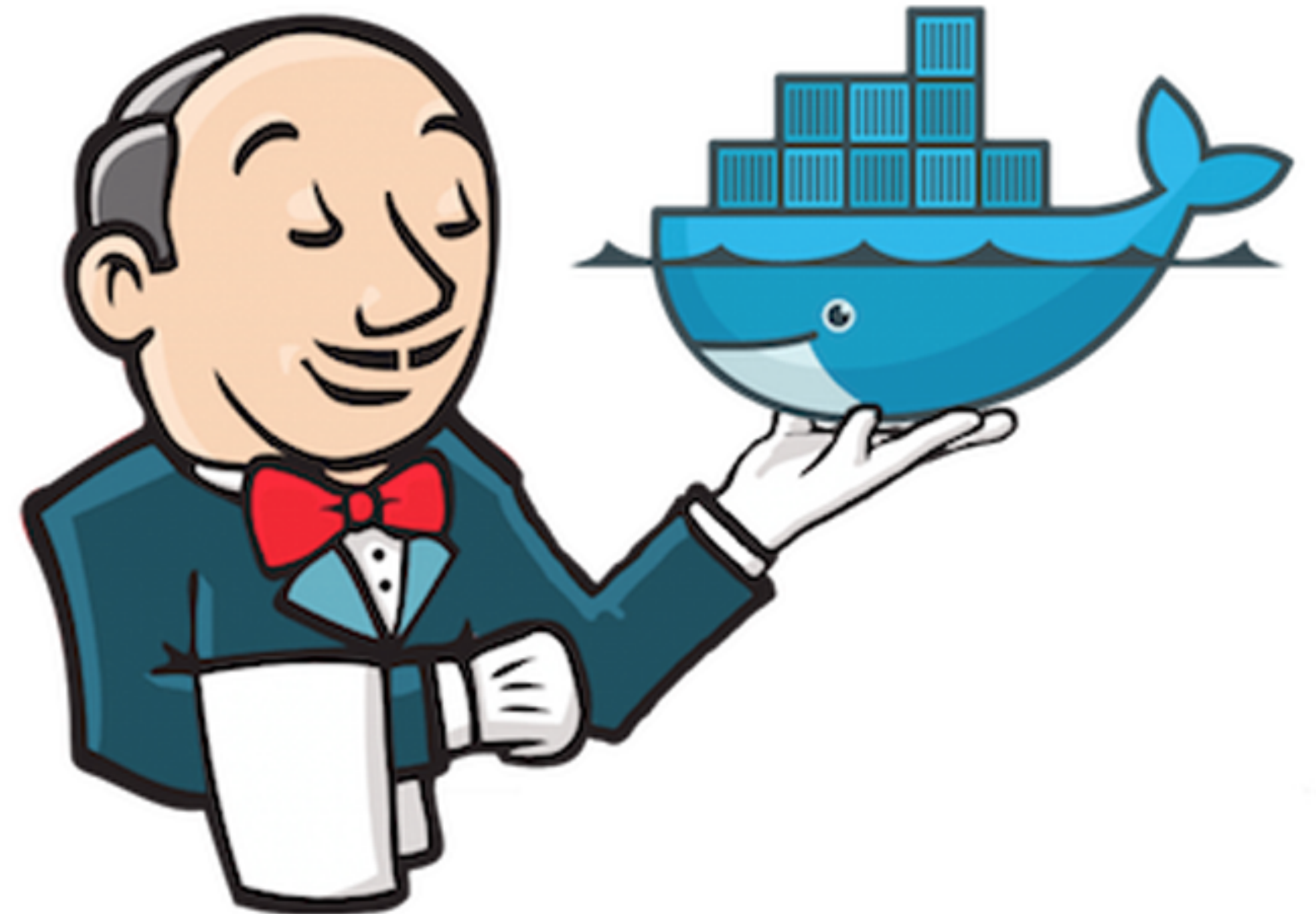
10:26 AM - 5 May 2015

Containerized builds

runs tests

creates versioned
deployable artifacts

standardizes development
environment





August 8, 2013

GETTING TO DOCKER 1.0

Last week, someone posted a tweet about Docker that was both one of the funniest– and one of the scariest– we’d seen.

Ready 2 deploy @docker. Can’t wait to ignore “not production ready” warnings.

Docker is less than 6 months old, and is currently at version 0.5.1. We – and the Docker community – are still rapidly iterating. So, we make a point of saying that we’re not production ready.

also true for infrastructure as code.



mikeash
@mikeash



Follow

Joe's code has 20 bugs. If Joe fixes 2 bugs per hour for 8 hours, how many bugs does Joe's code have now?

Answer: 27.

RETWEETS
4,417

FAVORITES
2,933



6:20 PM - 18 Sep 2015



mark mcbride

@mccv



Follow

them: is that written down?
me: we communicate in the viking tradition.
Let me tell you the saga of that system.

RETWEETS

794

LIKES

605



4:34 PM - 10 Feb 2014





Andrew Clay Shafer
@littleidea



Following

ad hoc automation is a problem
masquerading as a solution

RETWEETS
20

LIKES
11



9:51 AM - 30 Jul 2015



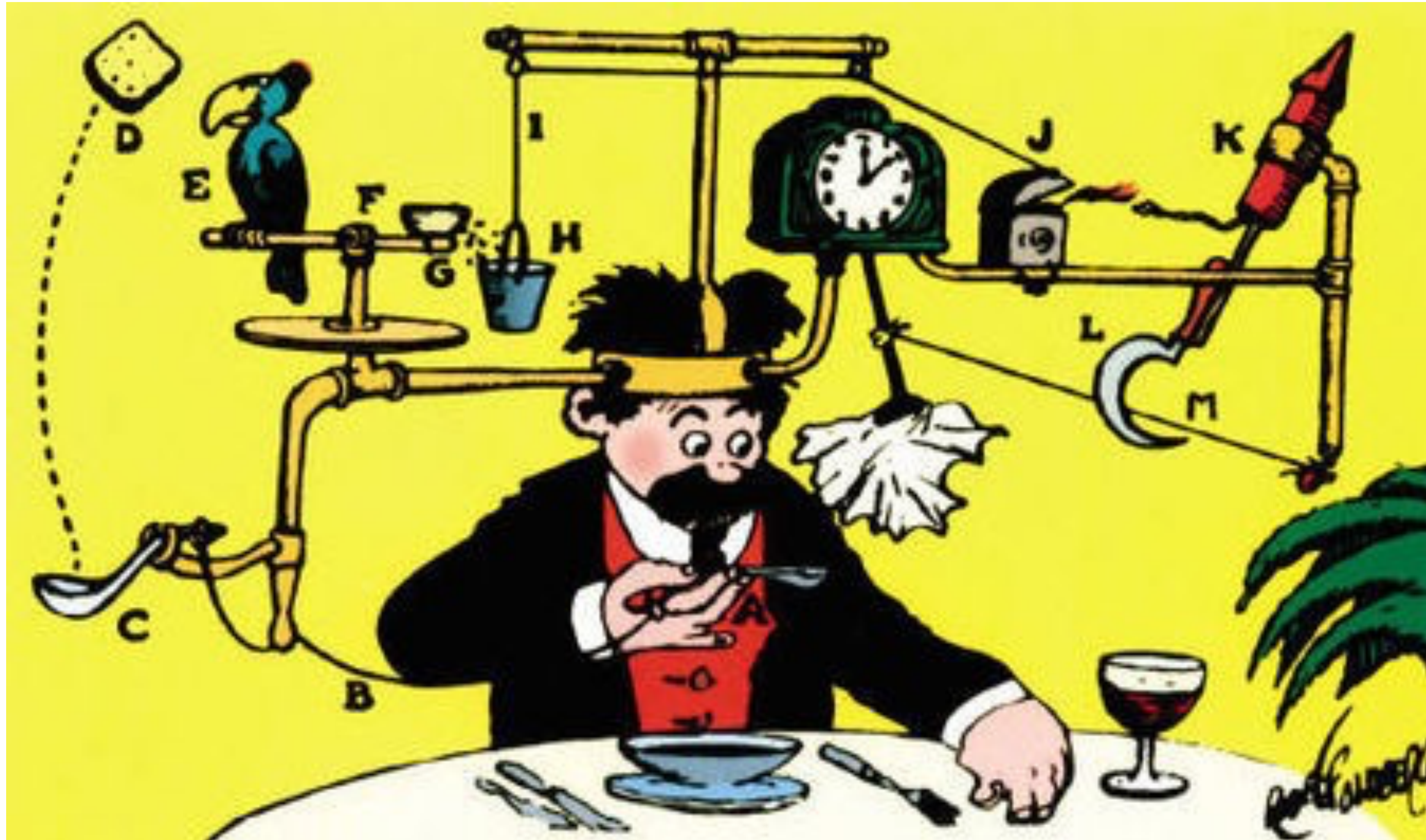
“Great job on those
zero-downtime
blue-green
deployments!”

—no CEO ever



canary deployments

Just because you can...



...doesn't mean you should.



Andrew Clay Shafer

@littleidea



Following

your periodic reminder:

broken gets fixed, but shitty lives forever

RETWEETS

63

FAVORITES

63



1:40 AM - 12 Sep 2015

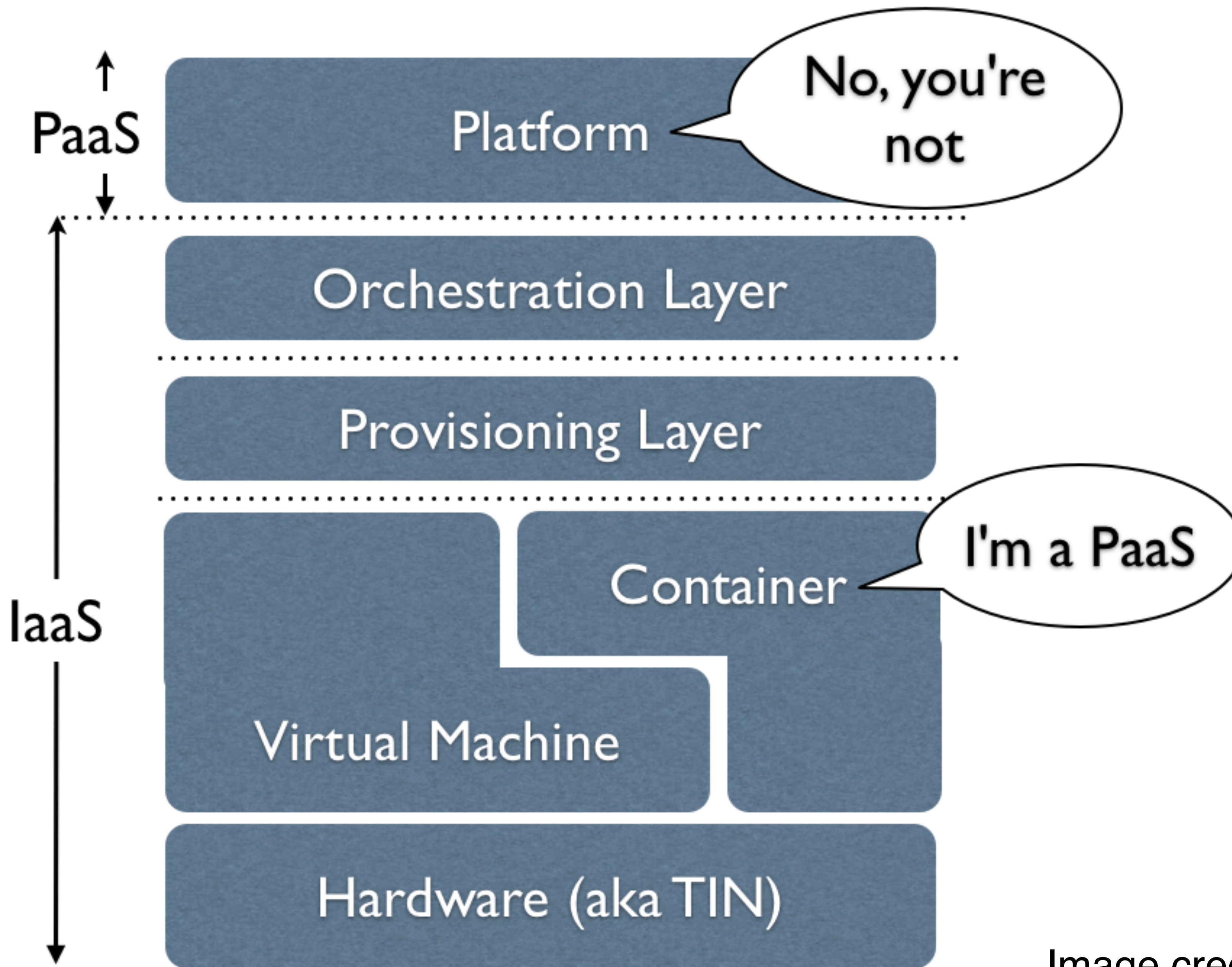


Image credit: Simon Wardley

A futuristic space station or space station-like structure is shown in space, with a large planet in the background. The station has a central tower and two long, thin arms extending outwards. The planet is partially obscured by a bright light source, creating a lens flare effect. The overall scene is set against a dark, starry background.

there has to be a better way

let's talk platforms....



Joe Wright
@joe_jag

[Follow](#)

I was in favour of space exploration until I realised what it'd mean for date time libraries

RETWEETS
2,592

FAVORITES
1,651



5:54 AM - 11 Sep 2014

if you can deploy and operate code
in any capacity, you have a platform

opinions optional



Andrew Clay Shafer

@littleidea



Following

infographic to help people understand opinionated and unopinionated platforms



Opinionated Treehouses



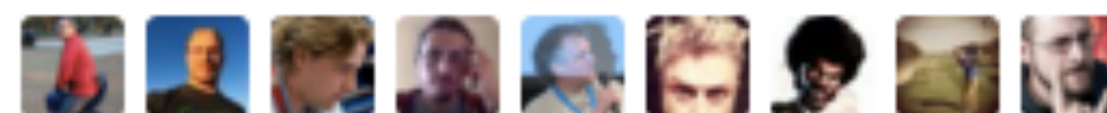
Unopinionated Treehouses

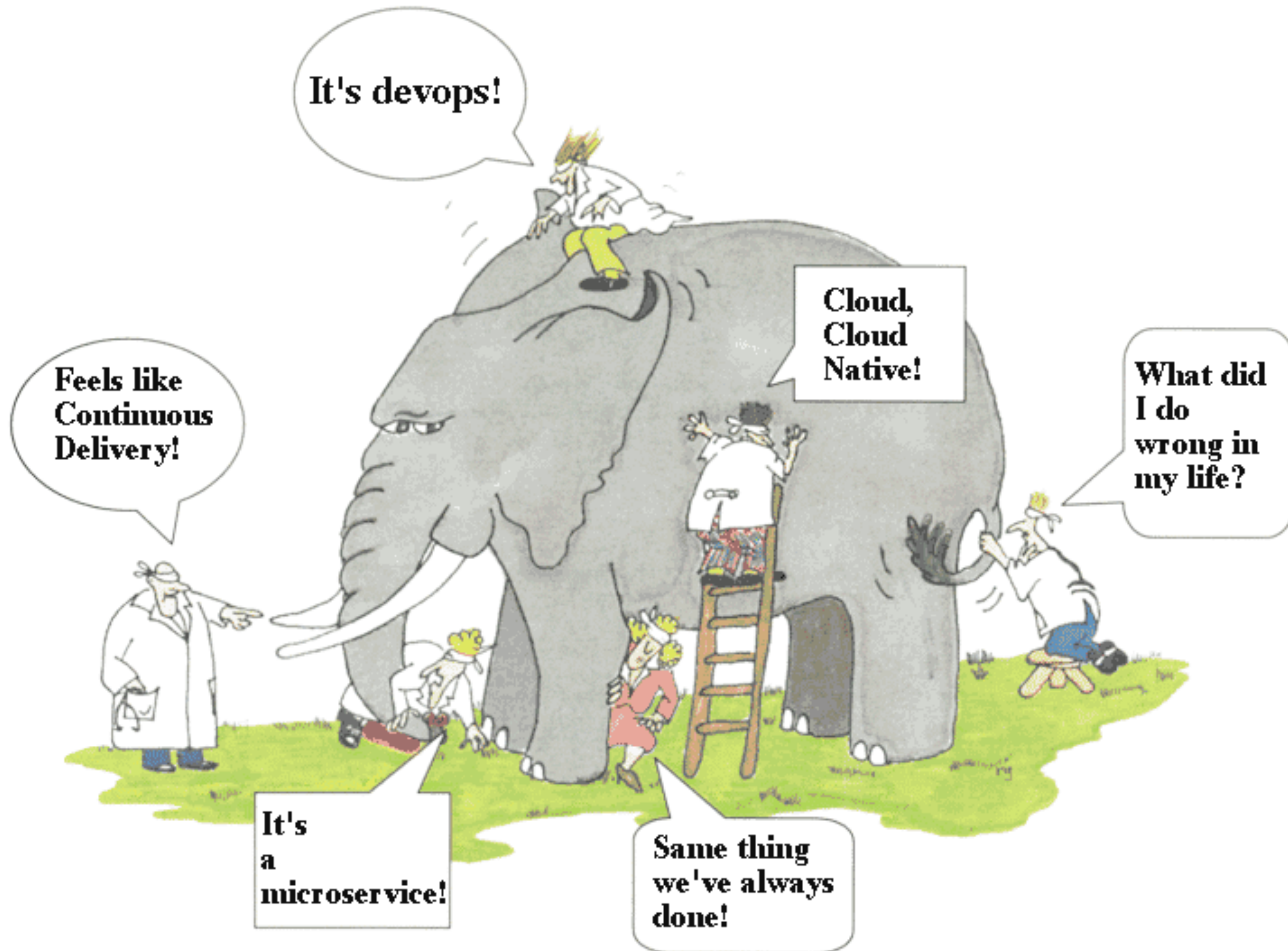
RETWEETS

62

FAVORITES

62





It's devops!

**Cloud,
Cloud
Native!**

**What did
I do
wrong in
my life?**

**Feels like
Continuous
Delivery!**

**It's
a
microservice!**

**Same thing
we've always
done!**



Mark Imbriaco

@markimbriaco



Following

I wonder how many organizations that say they're "doing DevOps" are actually building a bespoke PaaS. And how many of those realize it.

RETWEETS

103

LIKES

77



11:27 PM - 28 Sep 2014

“Almost every task run under Borg contains a built-in HTTP server that publishes information about the health of the task and thousands of performance metrics”



Large-scale cluster management at Google with Borg - Verma et al. 2015

Principles > Practices > Tools

why > what



Honest Status Page

@honest_update



+ Follow

We replaced our monolith with micro services so that every outage could be more like a murder mystery.

RETWEETS

1,997

LIKES

1,451



6:10 PM - 7 Oct 2015





Bridget Kromhout

@bridgetkromhout

Think microservices are too complex?
Monoliths have complexity you can't see and dependencies you didn't realize existed.

@adrianco #ricon15

RETWEETS

39

LIKES

21



3:35 PM - 5 Nov 2015





reasonable
constraints

@bridgetkromhout

Pivotal™



Constraints are the contract that allows a platform to keep promises.



Everyone has a platform.
What promises can
your platform keep?

does your platform promise this?

- role based access to resources
- run code on demand
- coordinate cross-service configurations
- route public requests
- read and write persistent data
- add and remove resources
- record internal and external events
- isolate resources and failures
- measure performance/health
- detect & determine failure
- recover from failures
- day two operations

promises






**structured contracts determine the
promises a platform can keep**



**simple patterns
automated by tooling**



“Any organization that designs a system (defined broadly) will produce a design whose structure is a copy of the organization's communication structure.”

Mel Conway



12-factor apps

need

12-factor ops



Use tools and simple
patterns to make
doing the **right** thing
the **easy** thing



“To always be shipping, you need a shipyard”

Bret Mogilefsky of 18F,
on cloud.gov



Thank you!