

Beyond Ad-hoc Automation

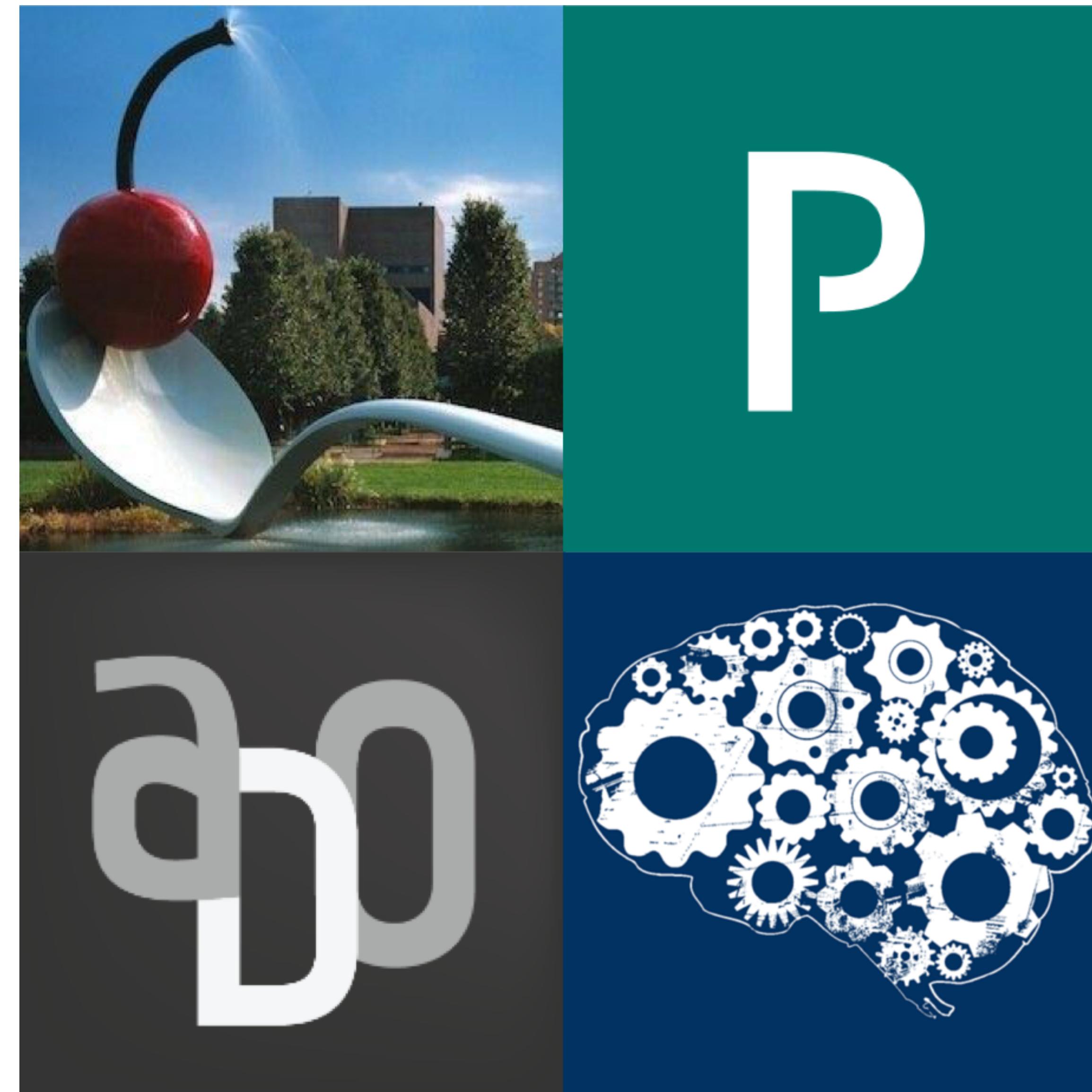
To Structured Platforms

Bridget Kromhout

Bridget Kromhout

lives:
Minneapolis,
Minnesota

podcasts:
Arrested
DevOps

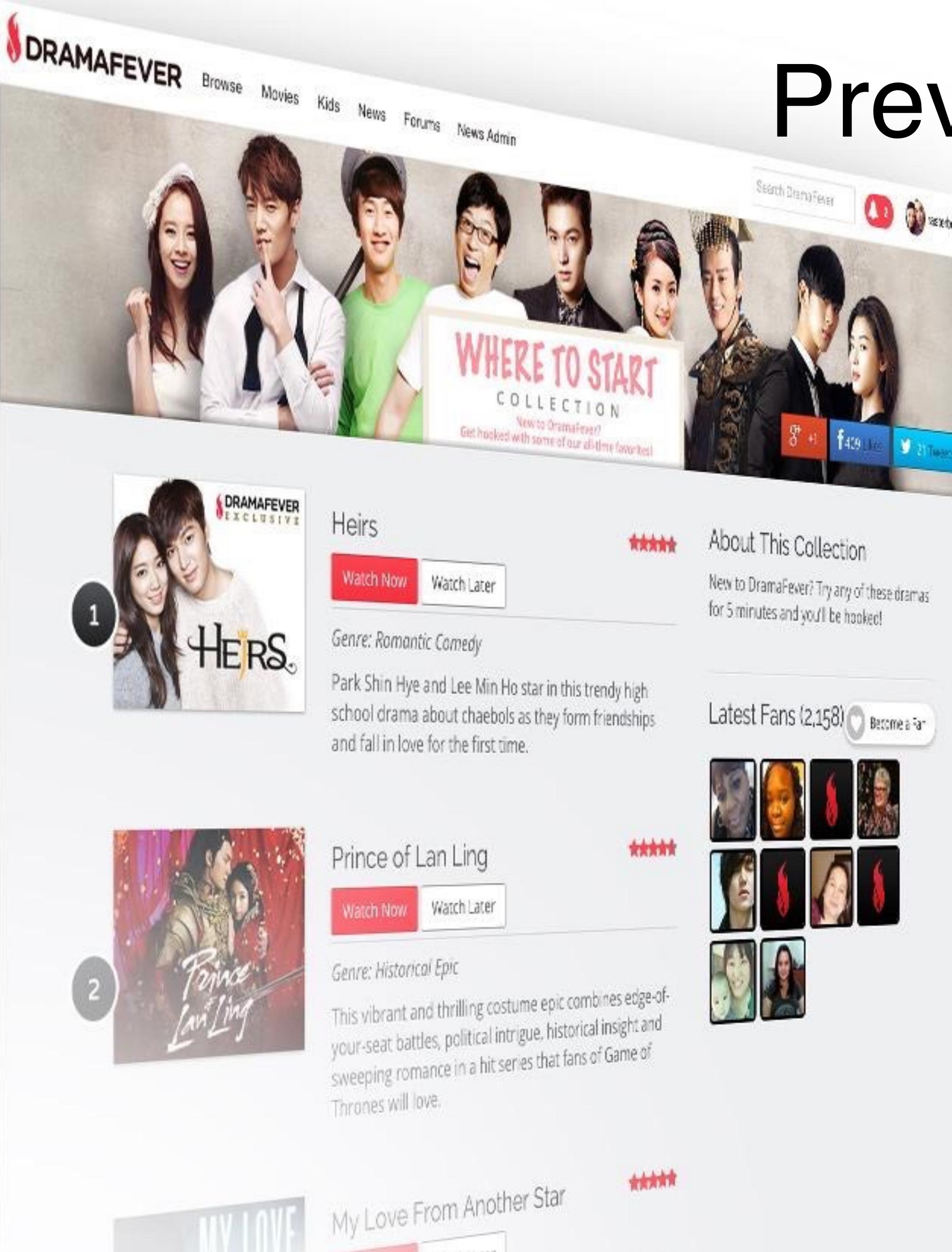


works:
Pivotal

organizes:
devopsdays

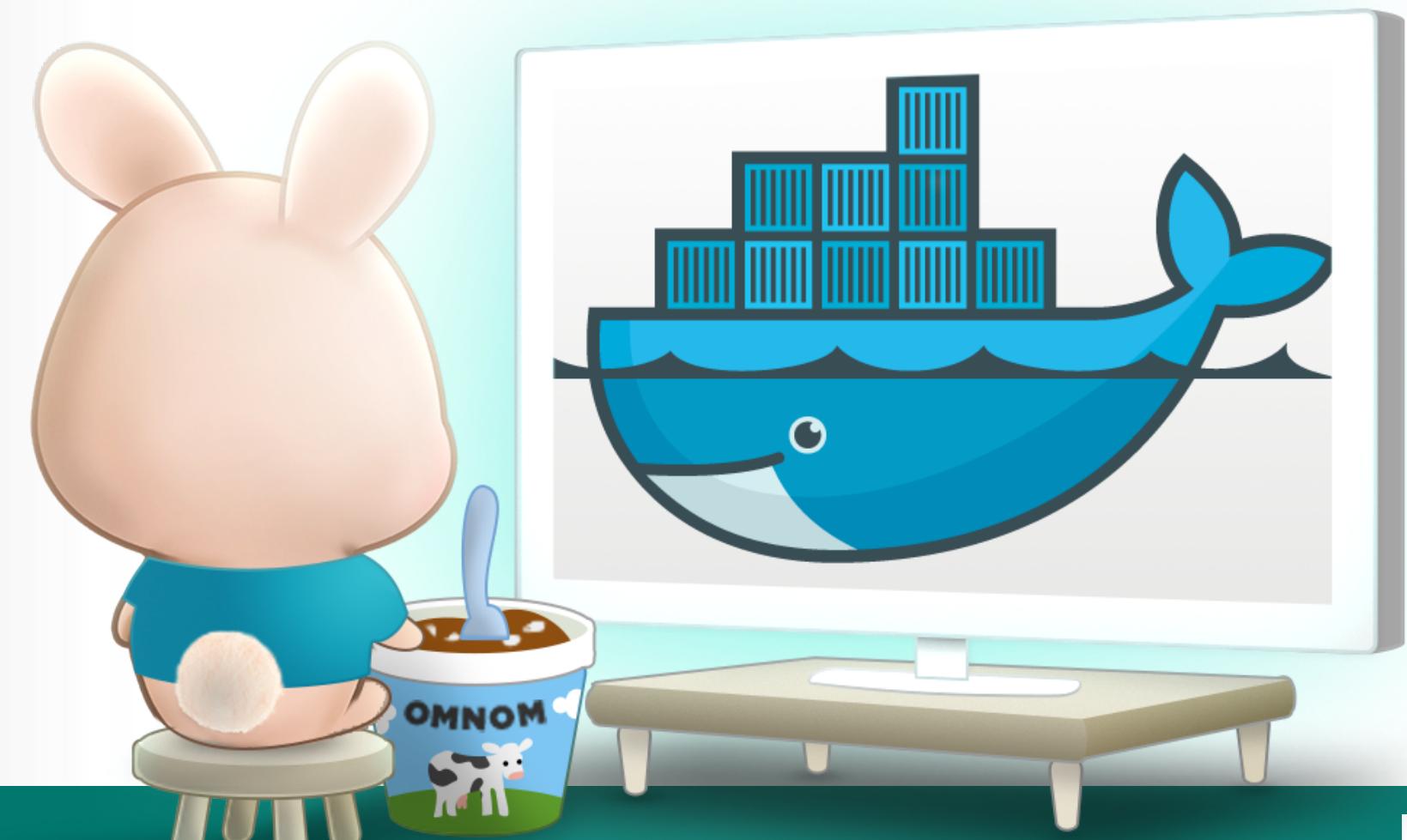


navigating infrastructure choices



Previously, on Platform Tales...

Docker in Production: Reality, Not Hype



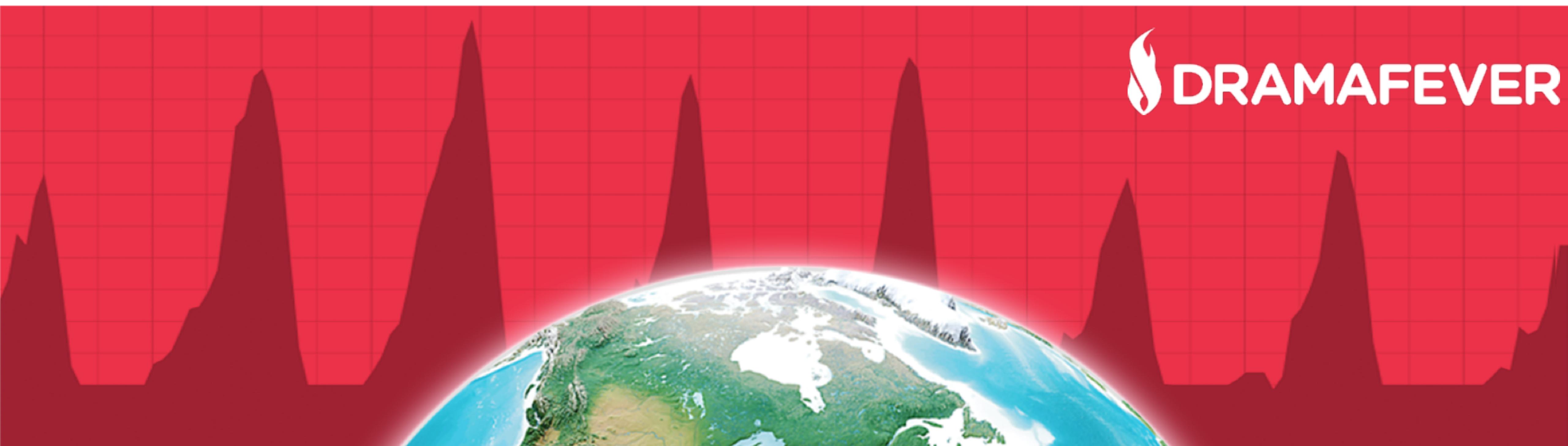


So I tied an onion to my belt...

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





J. Paul Reed
@jpaulreed



Following

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

RETWEETS

8

LIKES

3



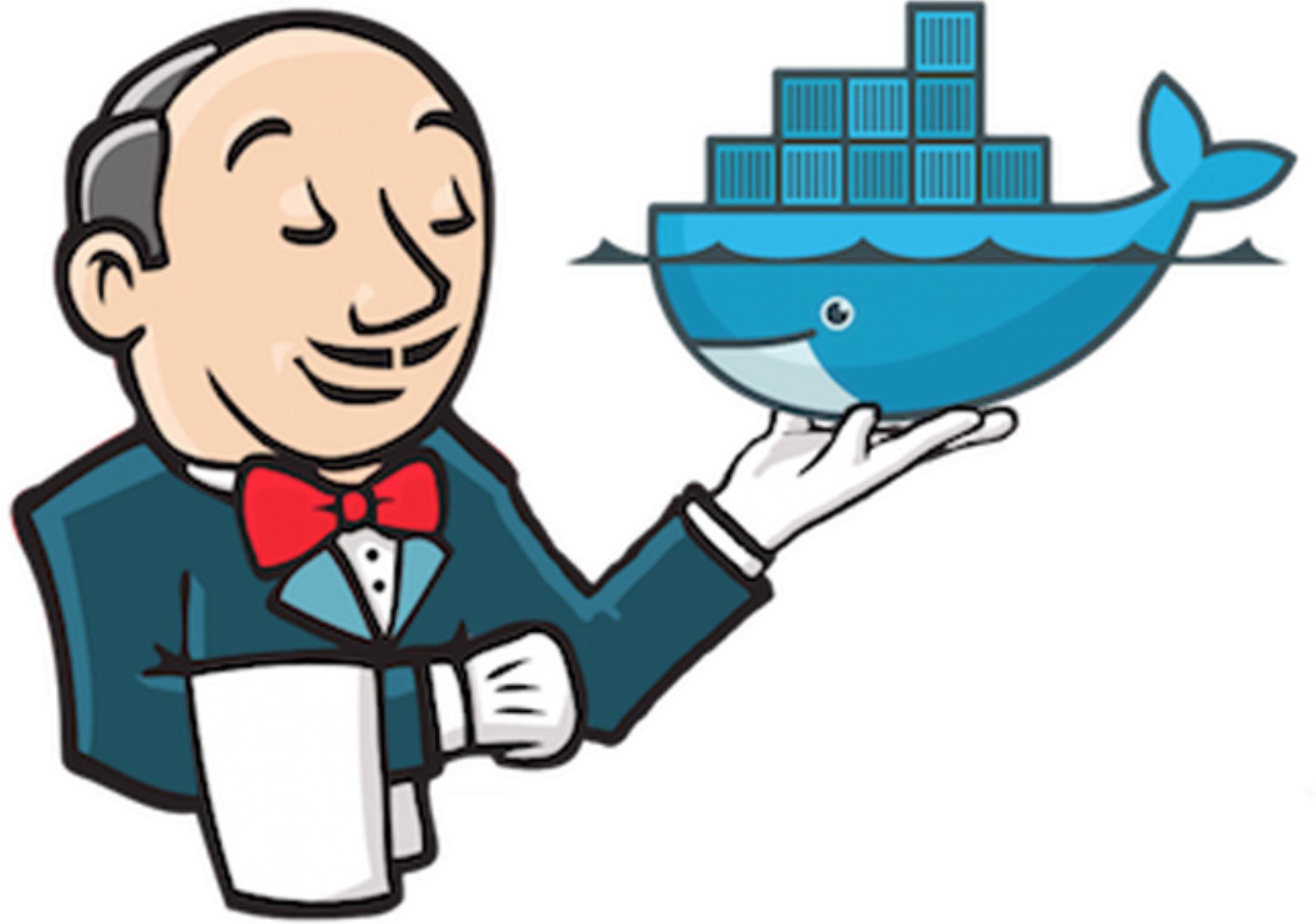
10:26 AM - 5 May 2015

Containerized builds

runs tests

creates versioned
deployable artifacts

standardizes development
environment



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?

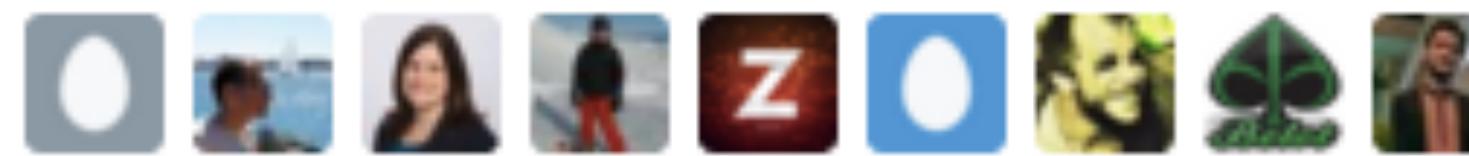
Answer: 27.

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

@bridgetkromhout



Pivotal™



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



@bridgetkromhout

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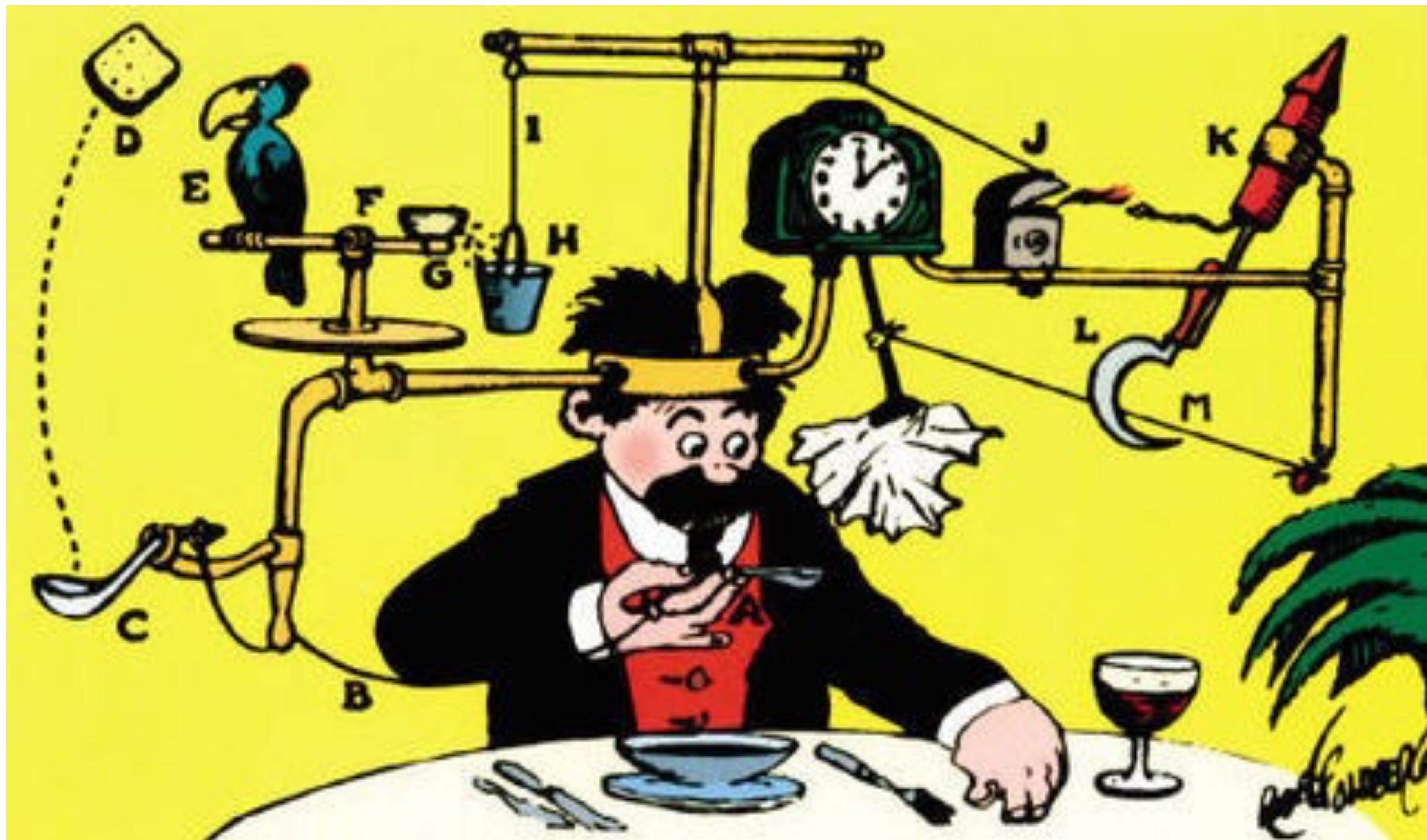
“Great job on those
zero-downtime
blue-green
deployments!”

— 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

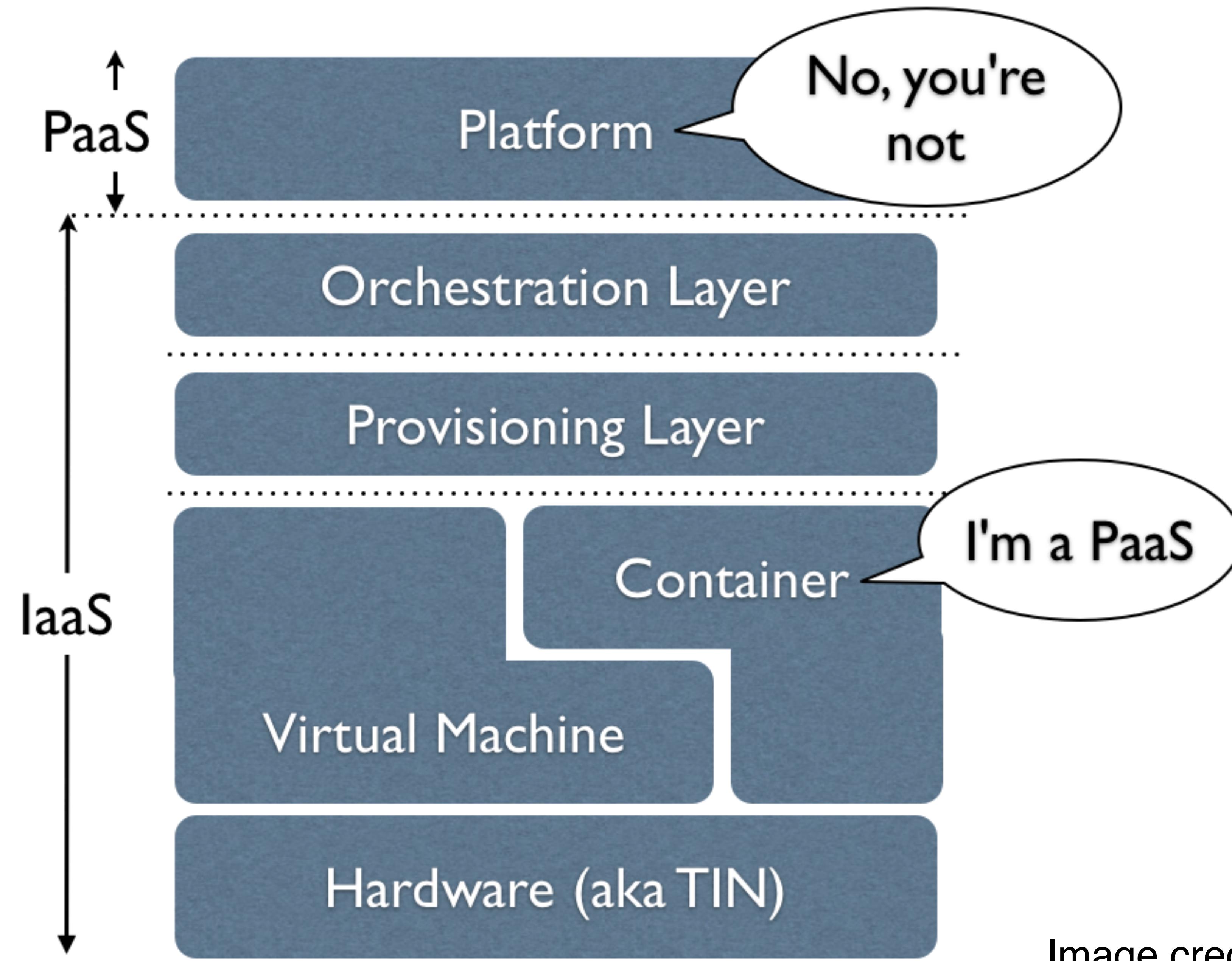


Image credit: Simon Wardley



there has to be a better way

let's talk platforms....



Joe Wright
@joe_jag

+ Follow

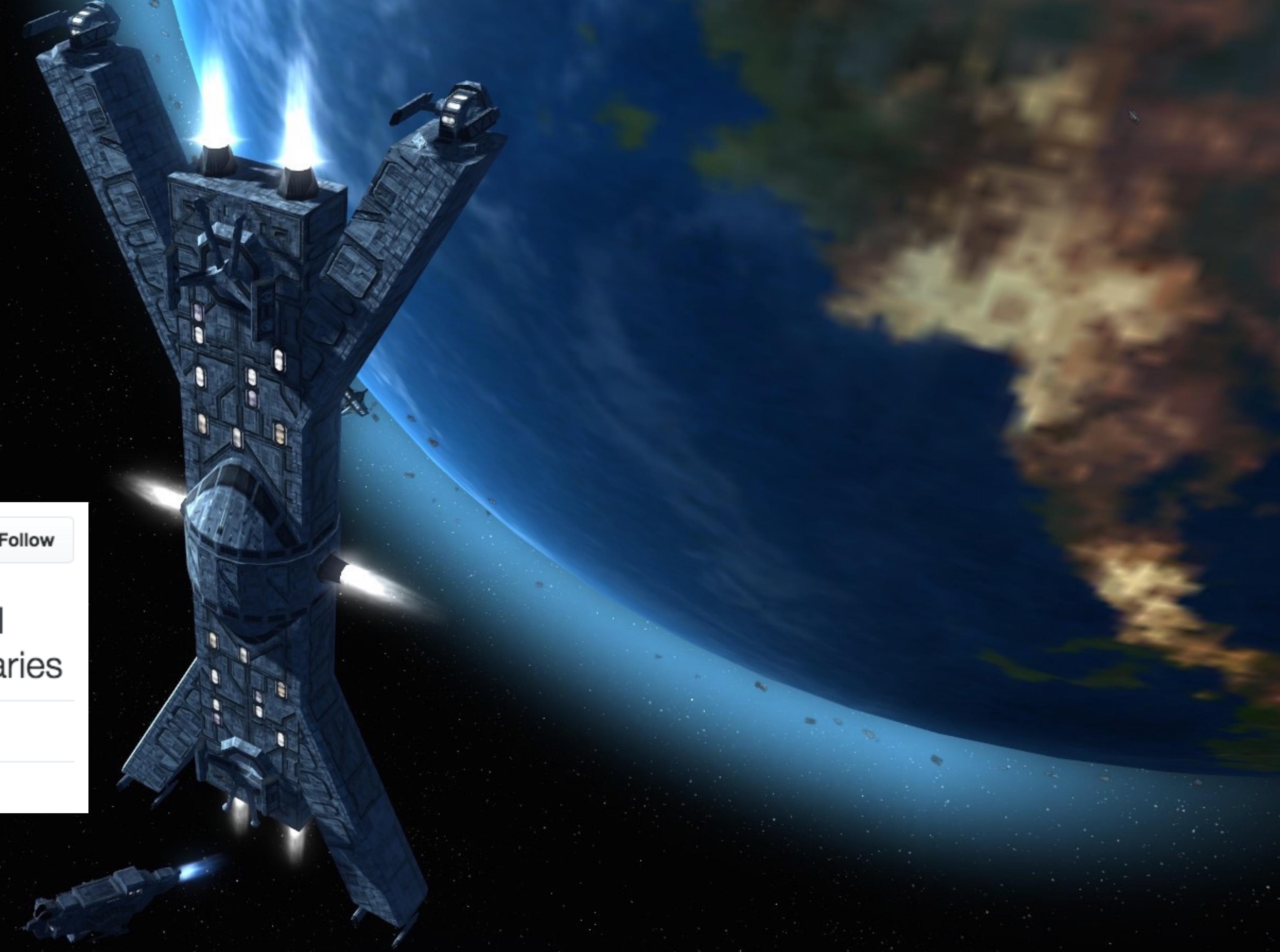
I was in favour of space exploration until I
realised what it'd mean for date time libraries

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



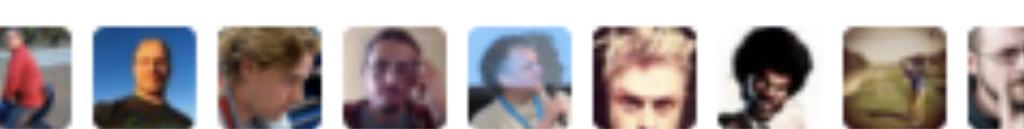
Opinionated Treehouses



Unopinionated Treehouses

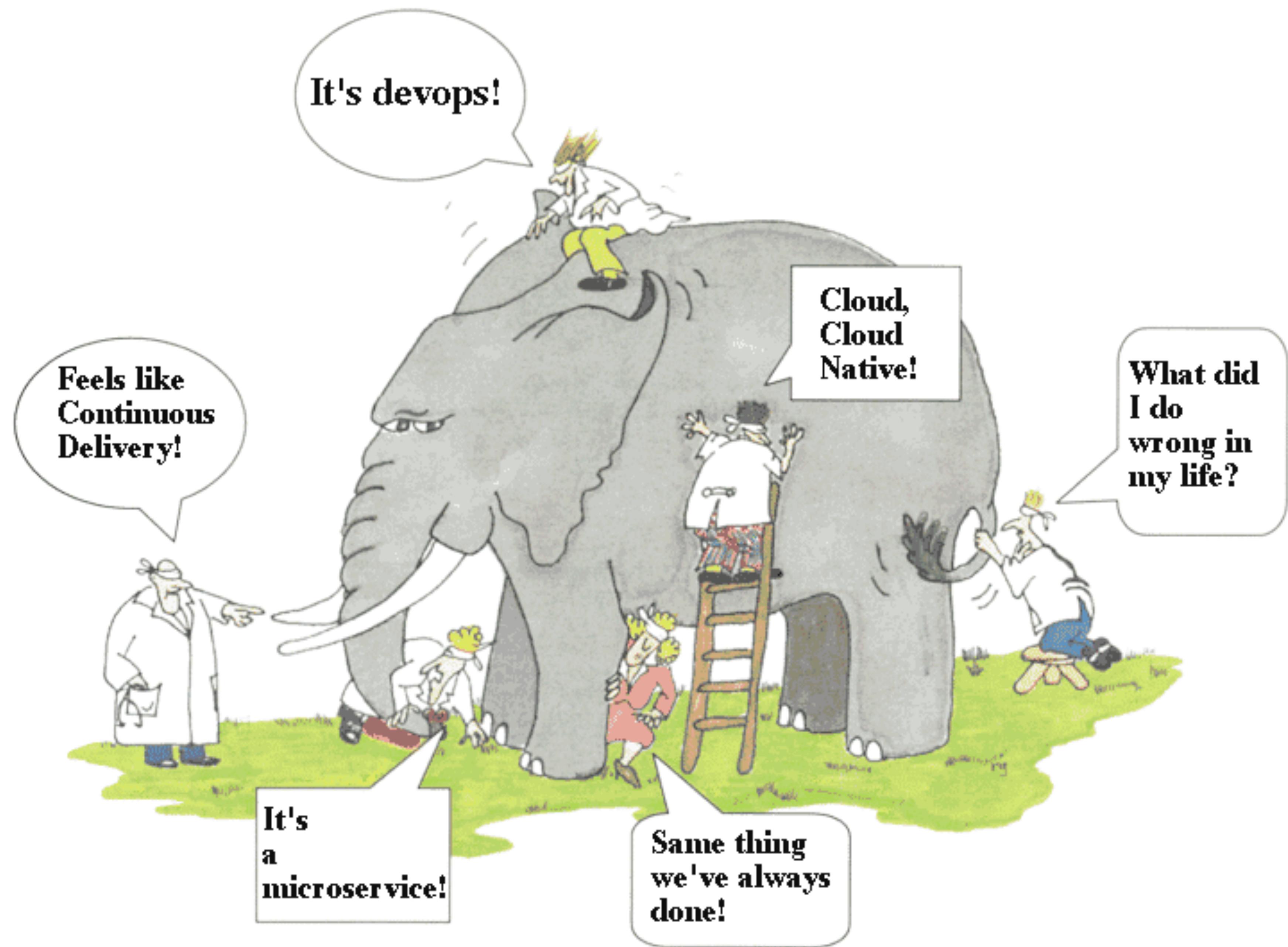
RETWEETS
62

FAVORITES
62



@bridgetkromhout

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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

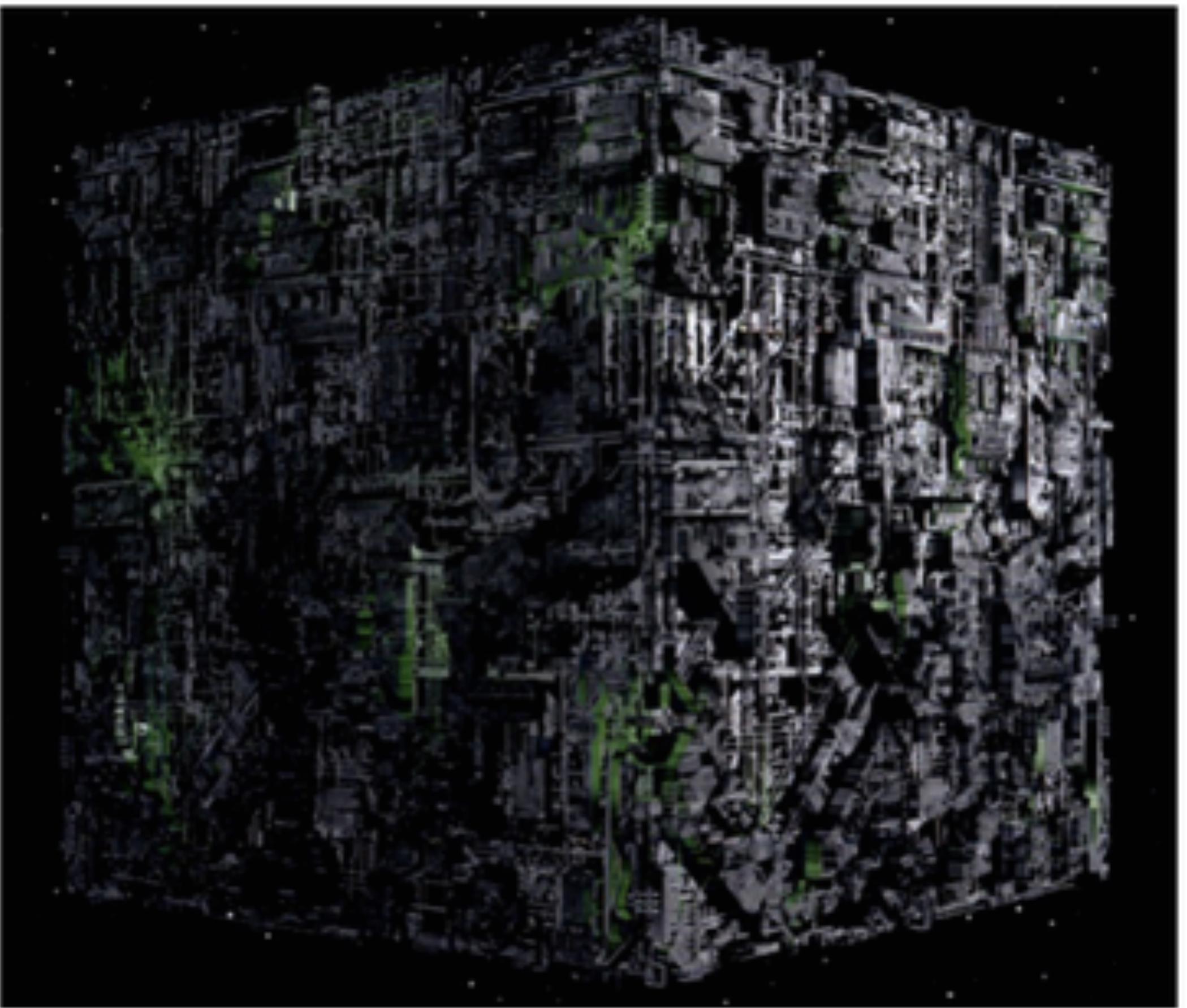
LIKES

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



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



@bridgetkromhout

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reasonable
constraints

@bridgetkromhout

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

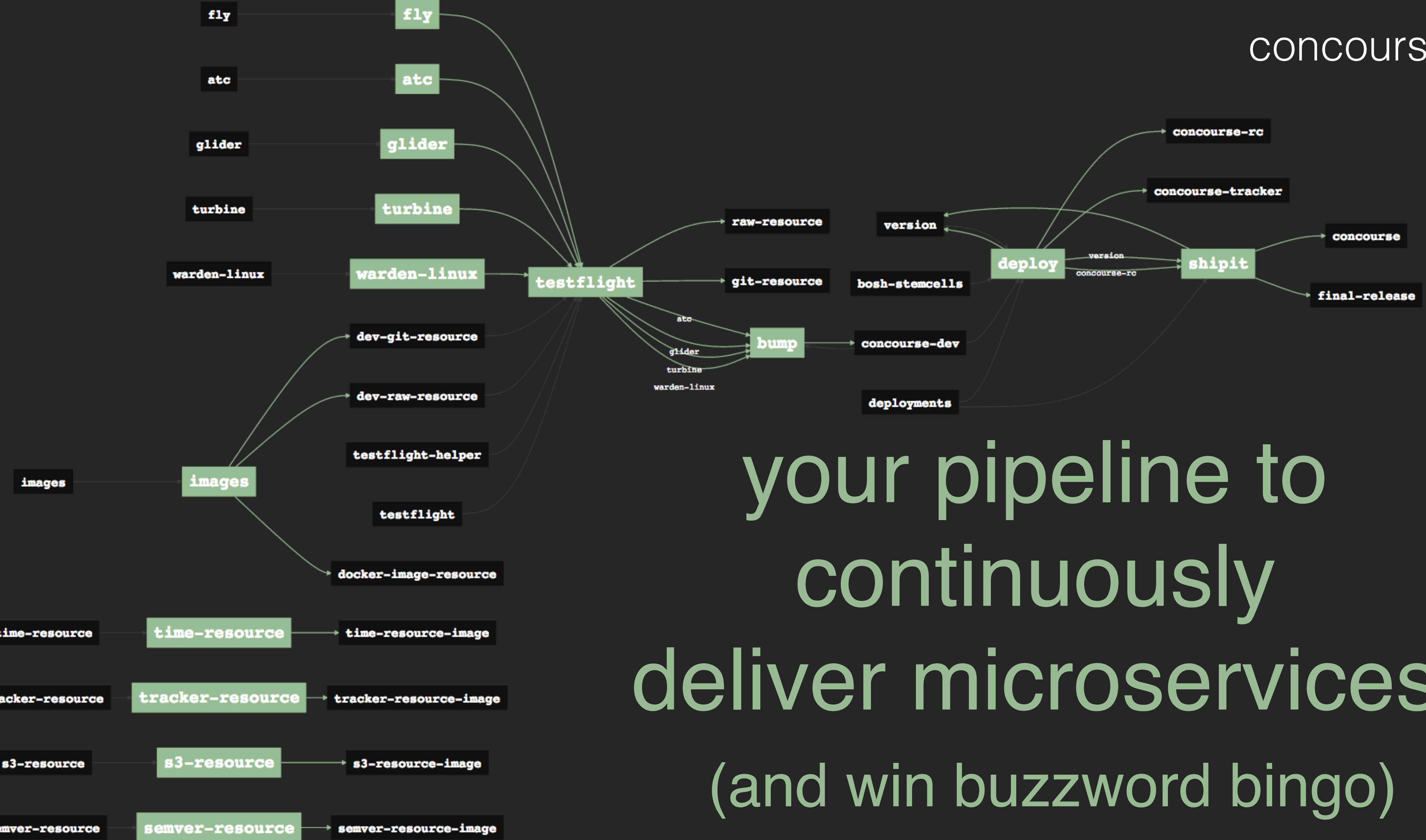


Everyone has a platform.
What promises can
your platform keep?



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



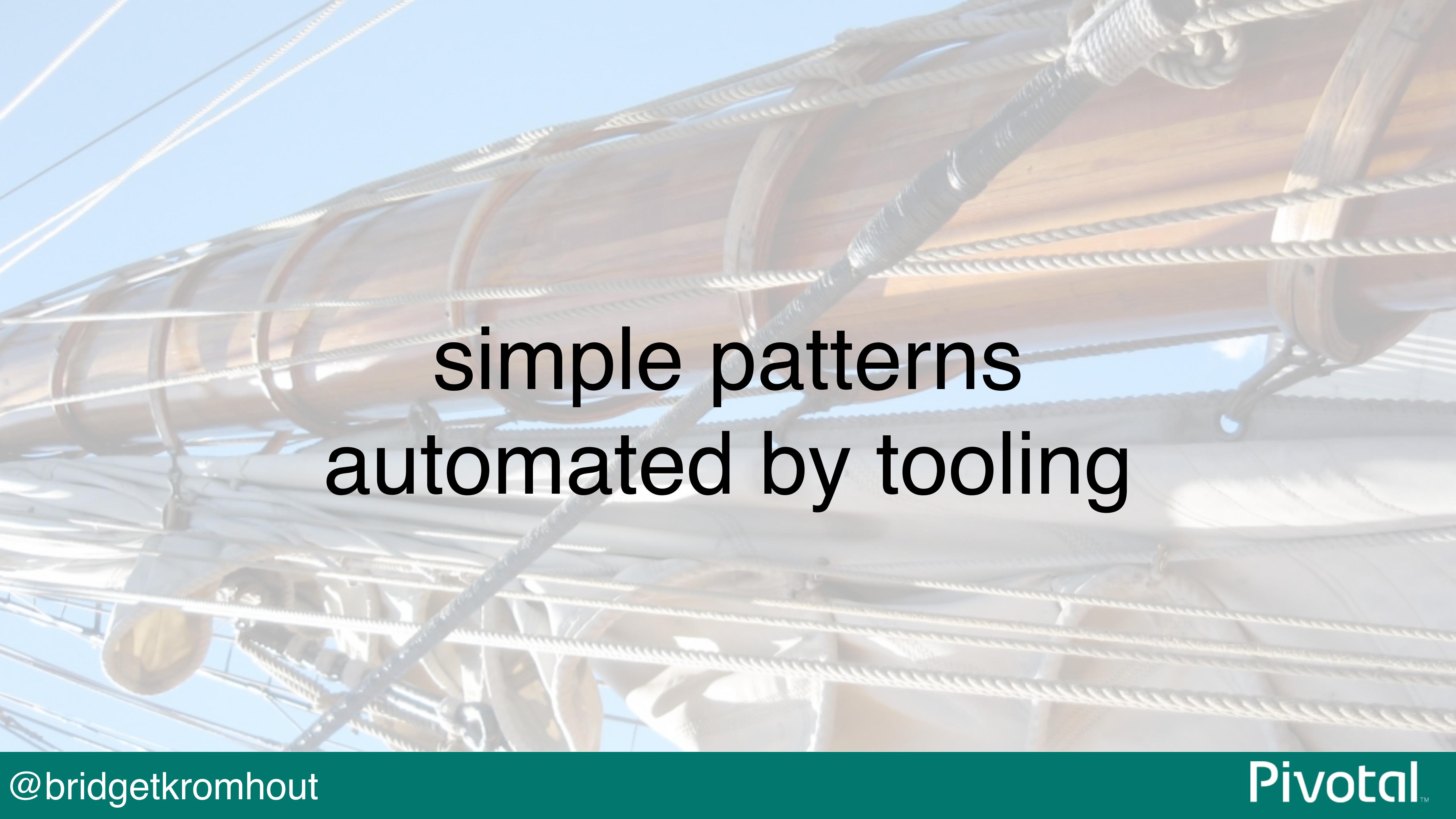
your pipeline to
continuously
deliver microservices
(and win buzzword bingo)

A close-up photograph of the wooden deck and metal rigging of a sailboat against a clear blue sky. The image shows the intricate details of the wooden planks, the thick metal cables, and the white sail material.

promises

A close-up, low-angle shot of a ship's wooden deck and ropes under a bright sky. The wood is light-colored and shows some grain. Numerous thick, light-colored ropes are coiled across the frame, some in the foreground and others in the background. The lighting is bright, creating strong highlights and shadows on the wood and ropes.

structured contracts determine the
promises a platform can keep



simple patterns
automated by tooling

An aerial photograph of a city, likely Denver, Colorado, showing a mix of urban development and natural landscape. In the foreground, there's a large body of water, possibly a reservoir or part of the Colorado River. The city extends into the background, with mountains visible under a blue sky with scattered white clouds.

“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

The background of the slide is a wide-angle aerial photograph of a large metropolitan area. In the foreground, there's a mix of green spaces, residential areas with houses, and larger industrial or commercial buildings. A body of water, possibly a lake or a river, stretches across the middle ground. In the far distance, mountains are visible under a bright blue sky with scattered white clouds.

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

A photograph of a tall ship's complex wooden rigging and metal cables against a clear blue sky. The perspective is from below, looking up at the masts.

Thank you!

@bridgetkromhout

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