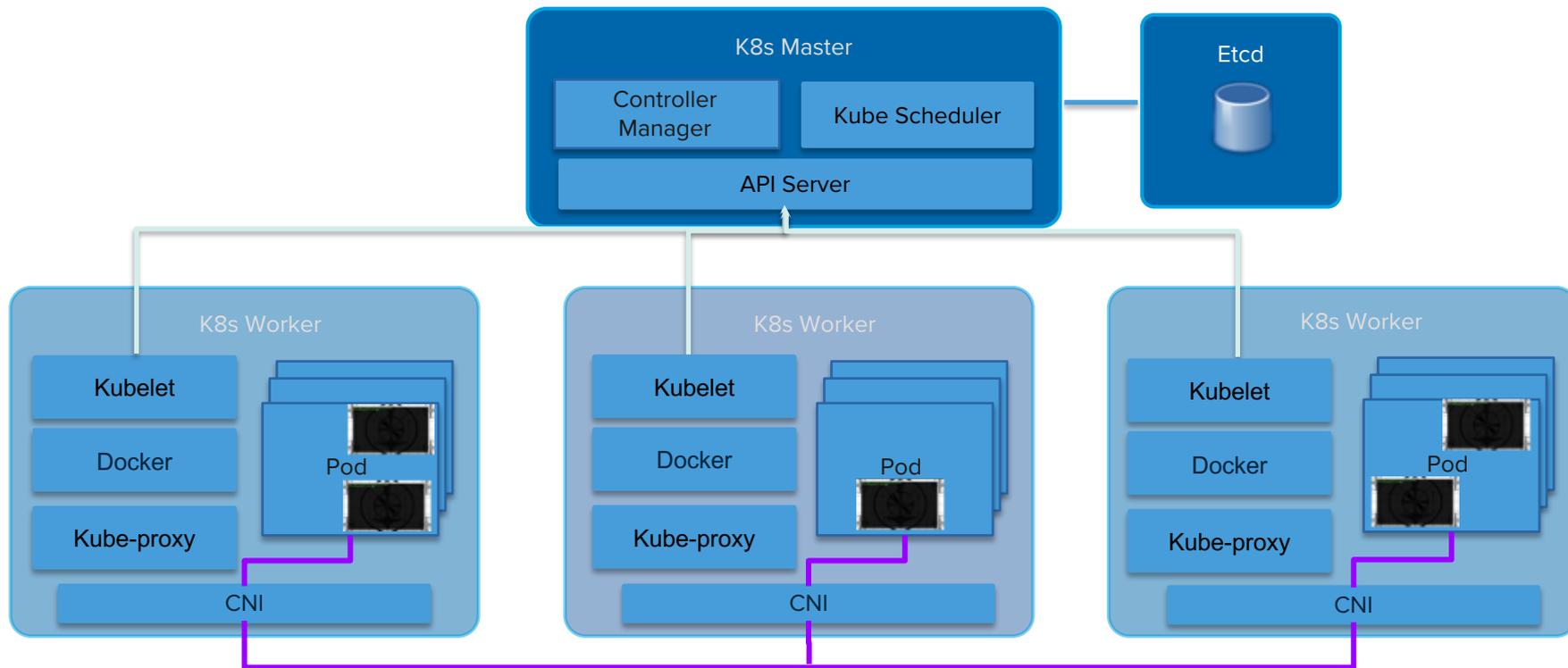


Last login: Thu May 24 16:34:03 on ttys001

PicklesFromTheJar:~ cote\$ █



Better get a blinking cursor transformation strategy



An aerial photograph of a port and industrial area, overlaid with a teal color. The image shows a large body of water with several ships, a highway with traffic, and various industrial structures and cranes. The text is overlaid on the left side of the image.

Pivotal

Kubernetes for the konfused

May, 2018

@cote

<https://cote.io/konfused/>

Conclusions

1. Kubernetes manages clusters of containers for maximum availability, scale, and reliability.
2. Your goal using it is to improve your organization's business with better software (e.g., deploying frequently to drive better design).
3. Managing kubernetes requires all the usual DevOps transformational suffering.
4. 12 factor apps with microservices work best. Legacy requires more effort.
5. Start small, with new apps, pick a distro or public cloud, run alongside a PaaS.

<http://cote.wtf>



Pivotal

 RedMonk

 451 Research[®]

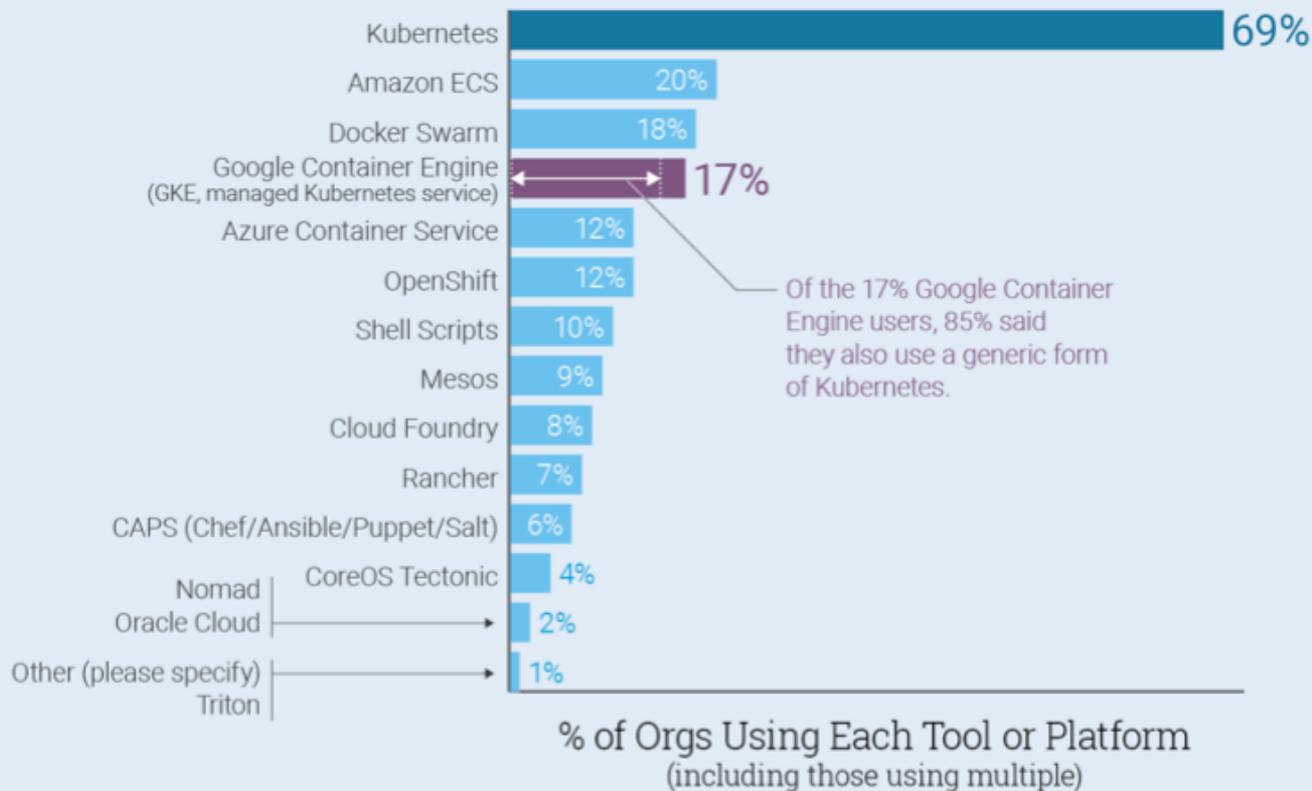
 SOFTWARE
DEFINED
TALK

 The Register[®]

 DELL

 bmc software  Funds Xpress

Kubernetes Manages Containers at 69% of Organizations Surveyed



Source: The New Stack Analysis of Cloud Native Computing Foundation survey conducted in Fall 2017.
Q. Your organization manages containers with... check all that apply ? n=763.

THE NEW STACK

A photograph of two women in a meeting room, viewed from behind. They are looking at a large screen displaying a blue interface. The woman on the left is wearing a red and black plaid shirt, and the woman on the right is wearing a patterned dress. A teal square frame is overlaid on the screen, containing the text "But why?".

But why?

Improve your organization by deploying more frequently



40% policy strike rate, vs. 20% industry average...in 6 months.

Over 1,000 production releases a day, 600 in prod.



Increased revenue “10’s of millions, likely to grow to the 100’s of millions”

6 to 8 person agile teams, delivering weekly on a cloud platform



Saving \$214k/day of fuel; 124 day avg. first release vs. 5 years

MVP, cloud platform, pairing, agile, weekly deploys

A photograph of two women standing in a meeting room, looking at a large screen. The woman on the left is wearing a red and black plaid shirt, and the woman on the right is wearing a patterned dress. A teal rectangular box highlights a section of the screen. The text "Creating a kubernetes strategy" is overlaid in white on the image.

Creating a kubernetes strategy



TERMINAL BURCHARDKAI

Hapag-Lloyd

HOUSTON EXPRESS
HAMBURG

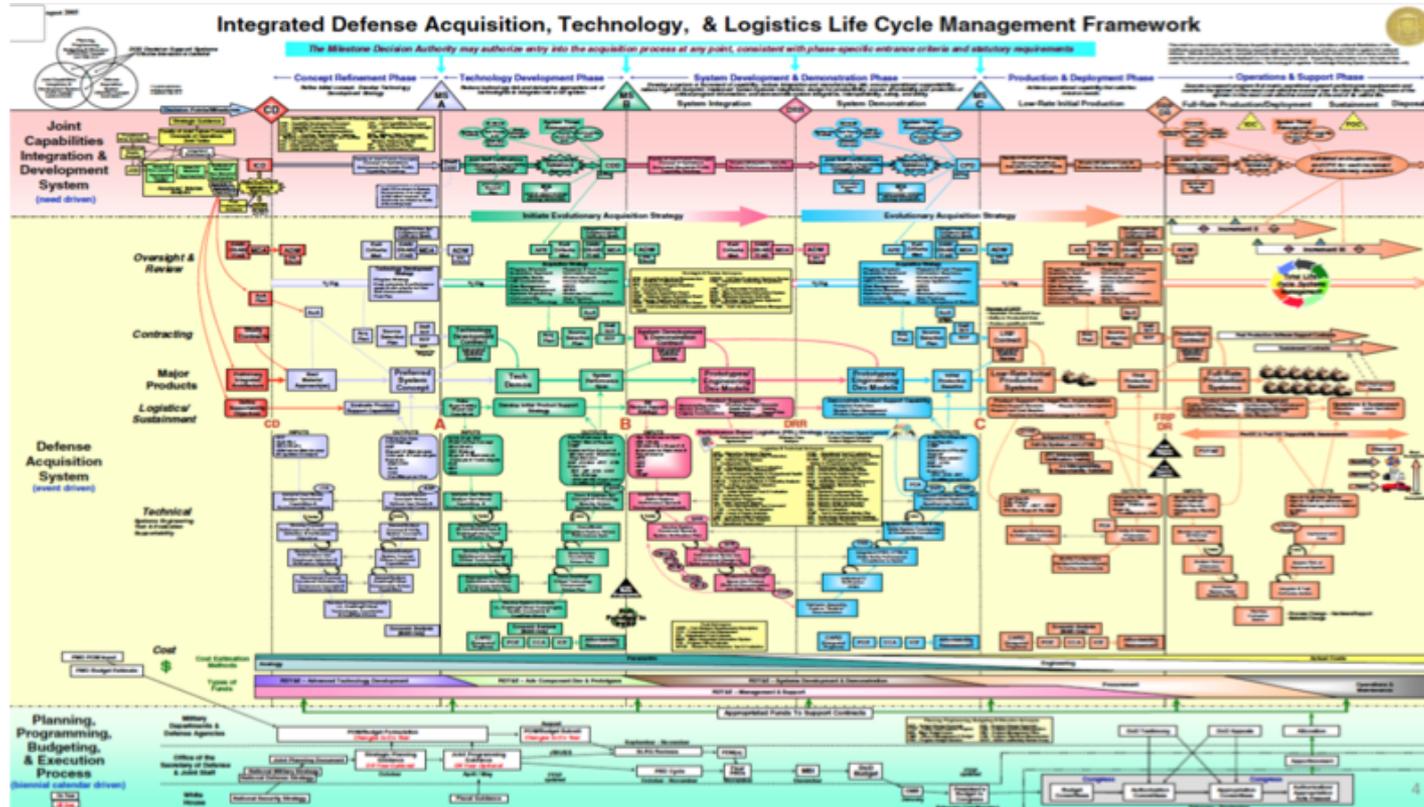
Actively manage your value to the rest of the organization

- Find a business that actually wants your help
- Identify business success metrics early
- Obsessing about cost early on will kill change



Source: *Leading Change*, John P. Kotter, 2012; "Disruption from Within," Thomas Squeo, West Corporation, May, 2018; ["Navigating the Sea of 'No's,'"](#) John Osborn, GAIC, Dec 2017; ["Cloud-Native at Home Depot, With Tony McCulley,"](#) Pivotal Conversations; conversations with Matt Curry at Allstate.

Most organization favor governing software over delivering it



Source: "[Cost of Delay - How PCF Helped Demonstrate the DoD Can't Afford Business as Usual,](#)" Capt. Bryon Kroger & Tory Galvin, United States Air Force, CF Summit NA 2018, April, 2018.

*What's in the
box?*

DevOpsSRE

Source: [Site Reliability Engineering: How Google Runs Production Systems](#), Betsy Beyer, Chris Jones, Jennifer Petoff, and Niall Richard Murphy, 2016.
["Full Cycle Developers at Netflix - Operate What You Build."](#) Philip Fisher-Ogden, Greg Burrell, and Dianne Marsh, May 17th, 2018.

Pick “cloud native” applications: 12 factor, microservices, etc.

I. Codebase

One codebase tracked in revision control, many deploys

II. Dependencies

Explicitly declare and isolate dependencies

III. Config

Store config in the environment

IV. Backing services

Treat backing services as attached resources

V. Build, release, run

Strictly separate build and run stages

VI. Processes

Execute the app as one or more stateless processes

VII. Port binding

Export services via port binding

VIII. Concurrency

Scale out via the process model

IX. Disposability

Maximize robustness with fast startup and graceful shutdown

X. Dev/prod parity

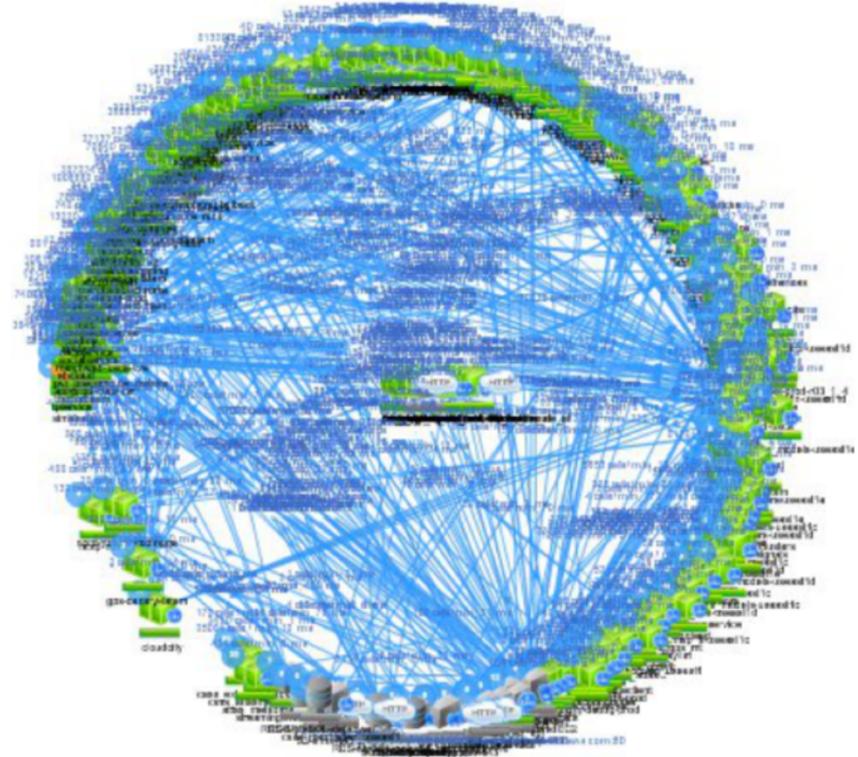
Keep development, staging, and production as similar as possible

XI. Logs

Treat logs as event streams

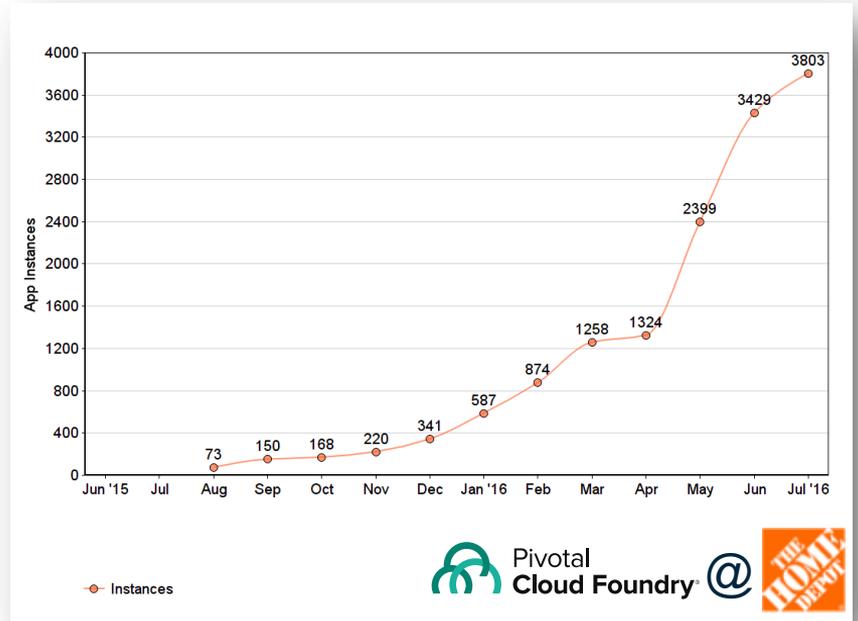
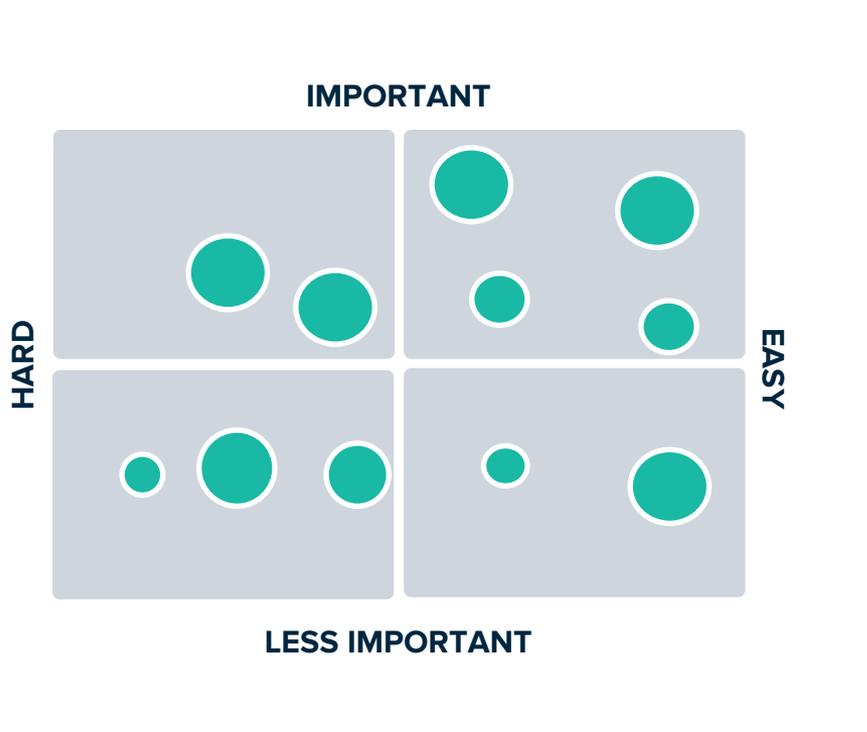
XII. Admin processes

Run admin/management tasks as one-off processes





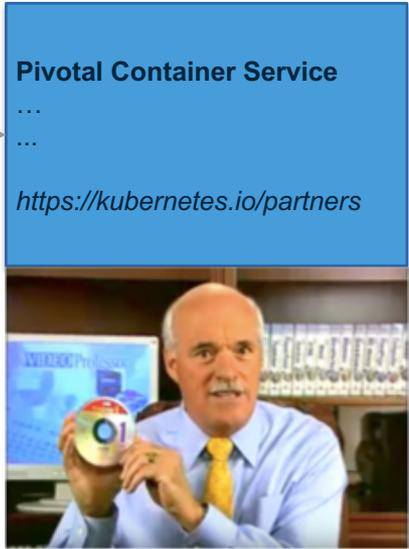
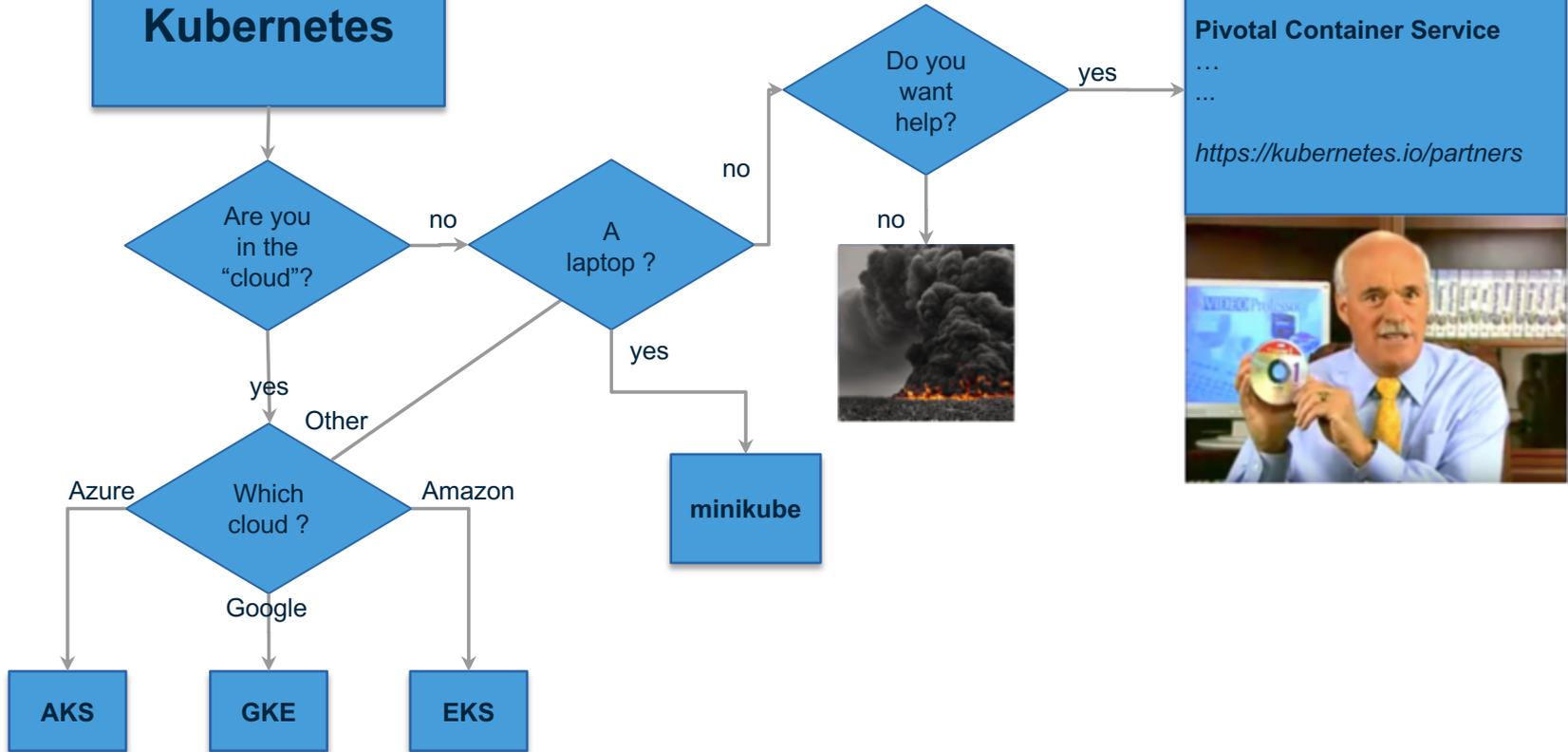
Start small and learn quickly so you don't blow up big and lost



A photograph of a server room with rows of server racks and a dense network of cables. The text is overlaid on the image.

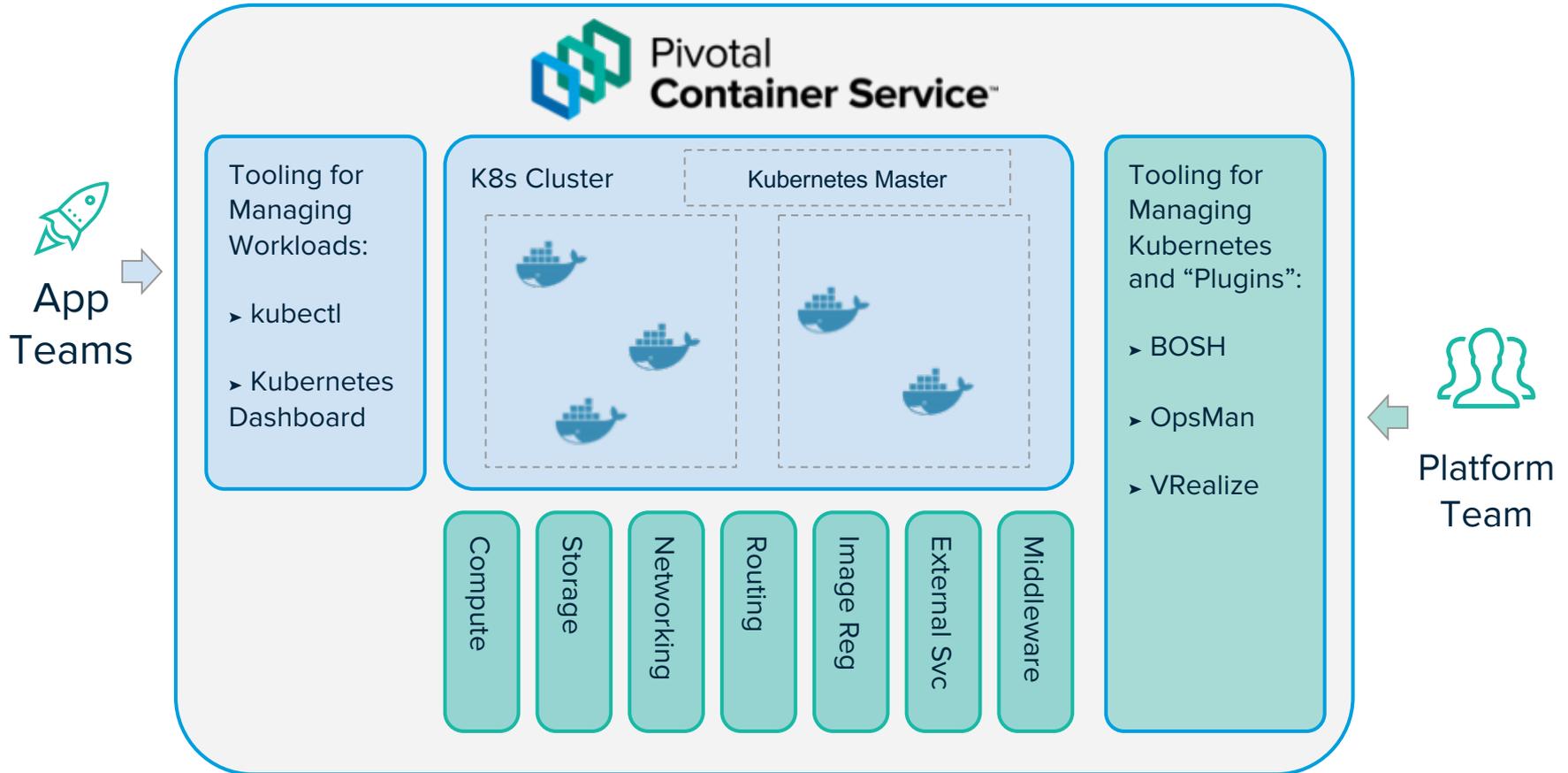
**“By 2020, less than 20%
of projects for
containerizing legacy
applications will be
successful.”**

How to Get an Kubernetes

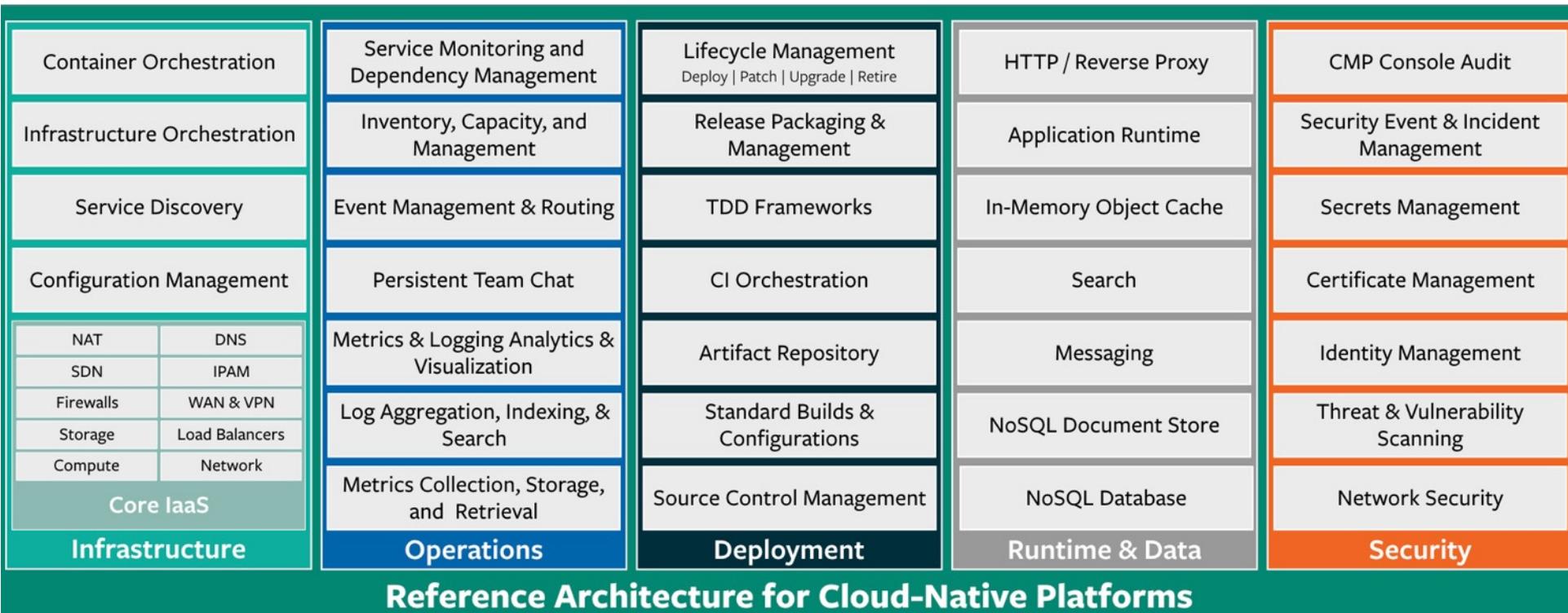


Source: "A DevOps Practitioner's Guide to Kubernetes," Paul Czarkowski, Feb 2018; tiefir.re; "Using Kubernetes to Orchestrate Container- Based Cloud and Microservices Applications," Traverse Clayton & Richard Watson, Gartner, April 2018.

There's more than just the core components



A platform is more than just cluster management



Ye olde strategy template

1. Find the business pull to improve your software capabilities.
2. Prove your worth to The Business, manage it continuously.
3. Transform to a DevOpsSRE IT organization.
4. Select new, 12 factor, microservice apps.
5. Choose small, but material apps to start.
6. Be hopeful of “legacy” apps, but cautious at first.
7. Use a distribution.
8. Plan for a platform.
9. **YOU’LL NEVER GUESS WHAT HAPPENS NEXT!!1!**

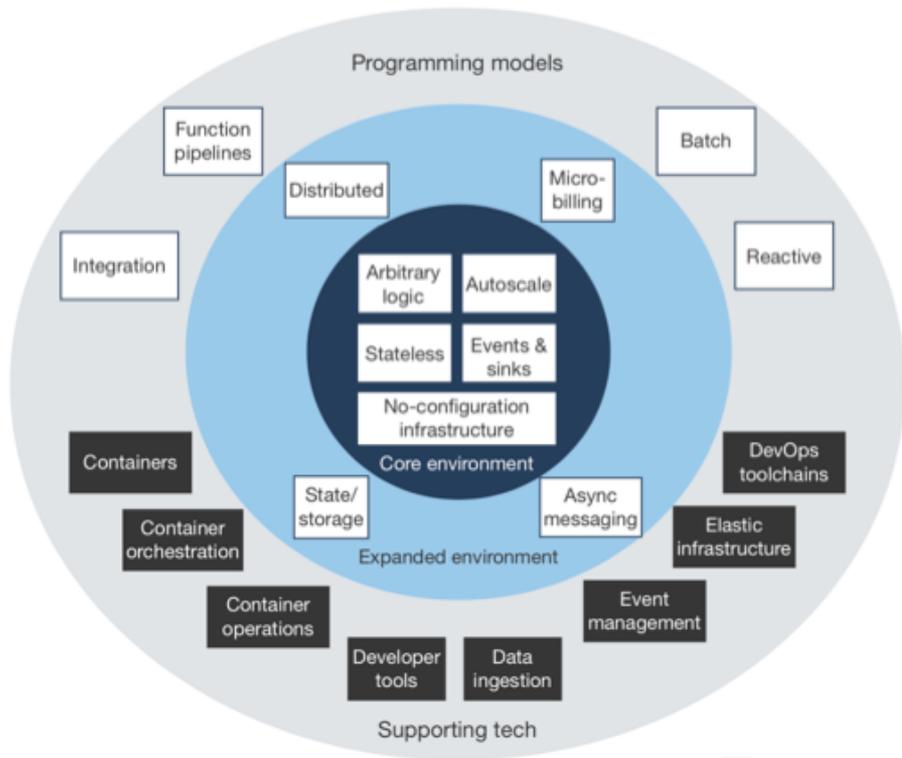
A photograph of two women standing in a meeting room, viewed from behind. They are looking at a large screen displaying a blue interface. The woman on the left is wearing a red and black plaid shirt, and the woman on the right is wearing a patterned dress. A teal square frame is overlaid on the image, centered on the women's heads and shoulders. The text "Or...wait – nevermind!" is overlaid in white, bold font across the center of the image.

Or...wait – nevermind!

So now everybody's excited about containers, but the battle's shifted up. So you've won the battle, but lost the war.



SERVERLESS!



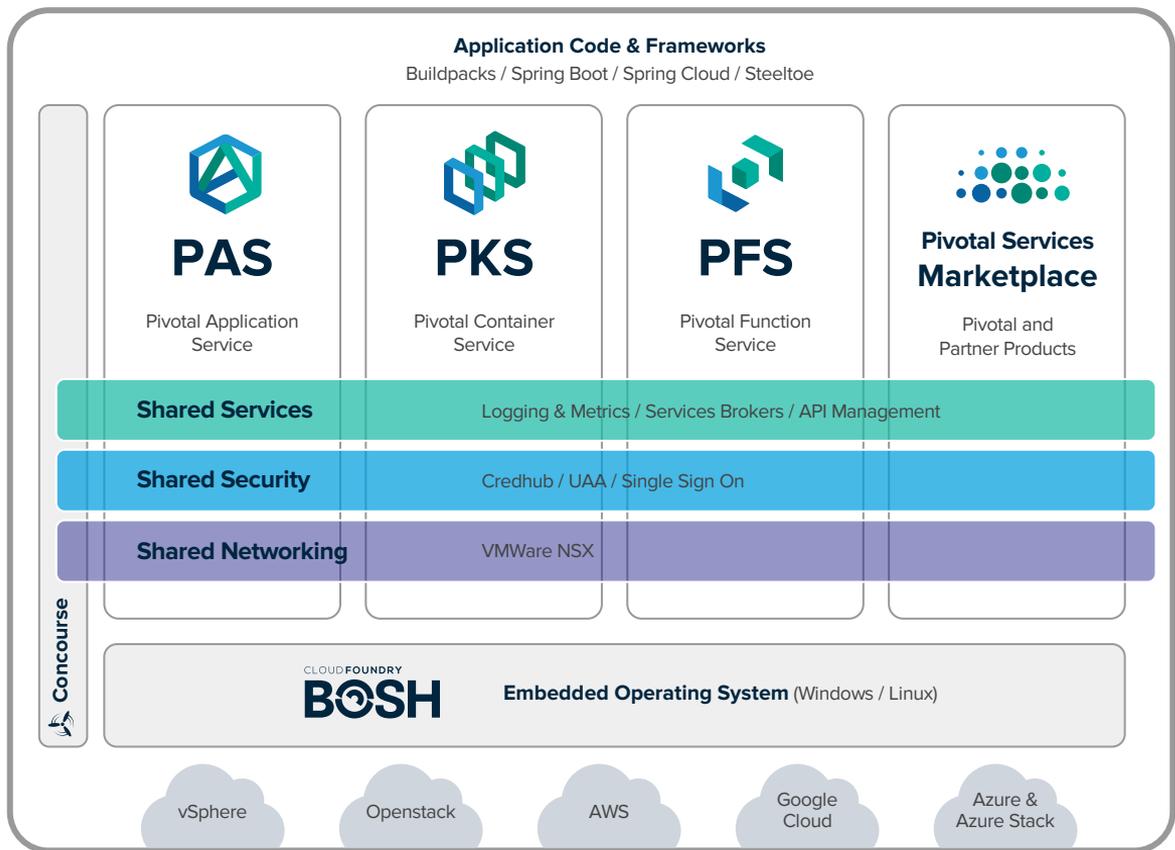
Kubernetes has, in fact, already lost the war to serverless.

FORRESTER

RedMonk



This now fullfills my "all talks on kubernetes must show shipping containers" requirement.



Build applications, not platforms



50% B2B customer engagement, shipped in 6 months vs. 18.



Builds and deploys an MVP in one month, generating revenue hours later. Went from 22 days to deploy to 1.



100x faster inf. delivery, used by nearly 1,000 developers for 100s of apps.



Supports 18,000 containers & 1,700 devs with just 10 ops staff. From 7 months to same day deployments.

“We are uncovering better ways of developing software by doing it and helping others do it.”

- [The Agile Manifesto](#), 2001

Thanks!

@cote | cote@pivotal.io