

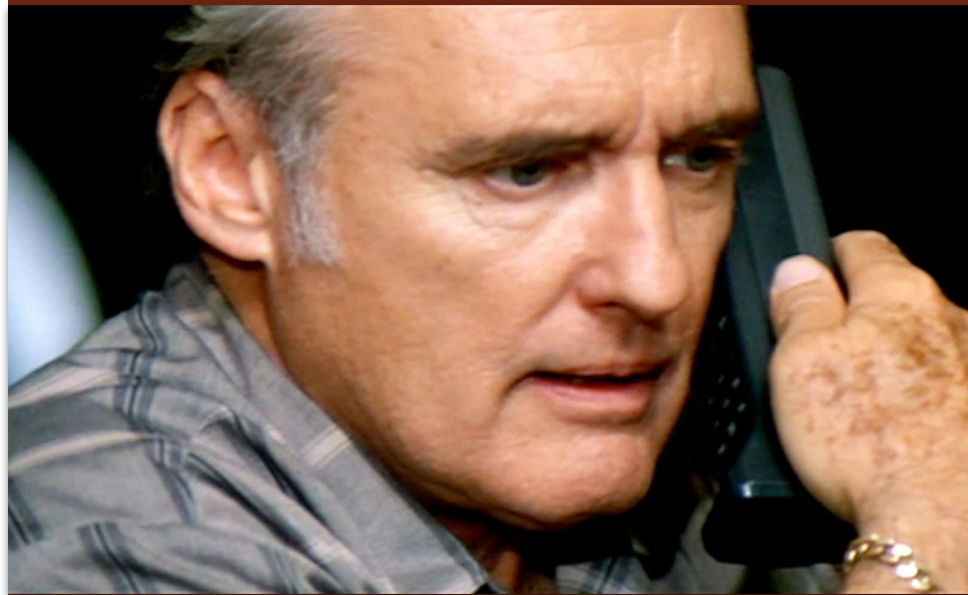


Scaling and Orchestration with Kubernetes

Chris Berg, Firemaple Industries
@thechrisberg

Scene

Pop quiz,
hotshot.





FRONTEND

BACKEND

PM

SUPPORT

OPS



Your application just left limited scope customer acceptance testing and has gone from 30 to 3000 users long before the customers' leadership mandate to adopt it.

This application is so wildly successful, it can't keep up with demand and is crashing. You can't swap the failing component because a critical feature depends on it.

What do you do?

What do you do?

Starring

Me

You

Containers

Docker

Introducing

Kubernetes

Kubernetes Work Units

PODS

**Kubernetes
Work Units**

DEPLOYMENTS

**Kubernetes
Work Units**

SERVICES

Back to Scene in Progress

A dramatic scene of a rocket launch or a massive explosion. Multiple bright, white plumes of fire and smoke erupt upwards from a base, set against a clear blue sky. The foreground shows some dark, silhouetted trees and vegetation. The overall image has a high-contrast, cinematic quality.

REST API SERVICE

“What gets measured, gets managed.”

- Peter Drucker

**Your REST API is crashing the webserver
because of so many long running
requests.**



BACKEND



OPS

Good candidate for horizontal scaling!

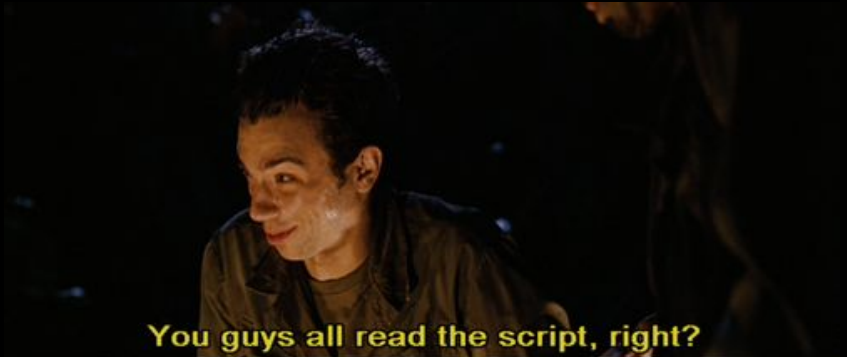
SCENARIO:

- REST API server failing
 - So many requests
- Bounce on threshold, spin up multiples
 - HAProxy? Pod spinup?

DEMO



Problem solved!

A man with dark hair, wearing a dark jacket, is shown from the chest up. He is looking slightly to his left with a neutral expression. The background is dark and out of focus.

You guys all read the script, right?

Two men are sitting and talking. The man on the left is looking towards the man on the right. The man on the right is looking down at something in his hands. They are both wearing dark jackets. The background is dark and out of focus.

I don't read the script, script reads me.

A man with dark hair, wearing a dark jacket, is shown from the chest up. He is looking upwards and to his right with a questioning expression. The background is dark and out of focus.

What the hell does that even mean?

Scene #2





MINISTRY OF INFORMATION
DEPT. OF INFORMATION RETRIEVAL

Reg. No. _____

Classification _____

Document _____

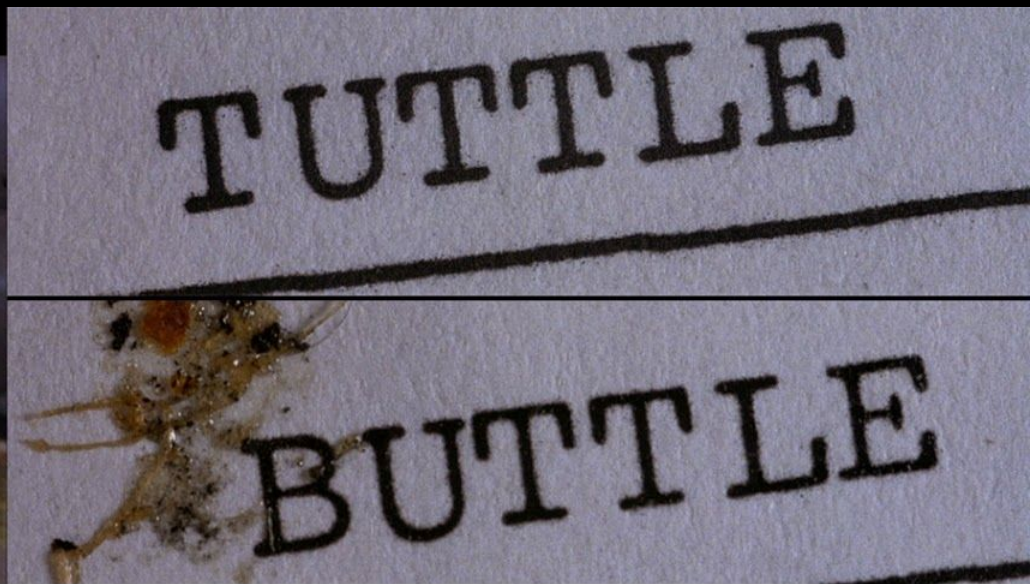
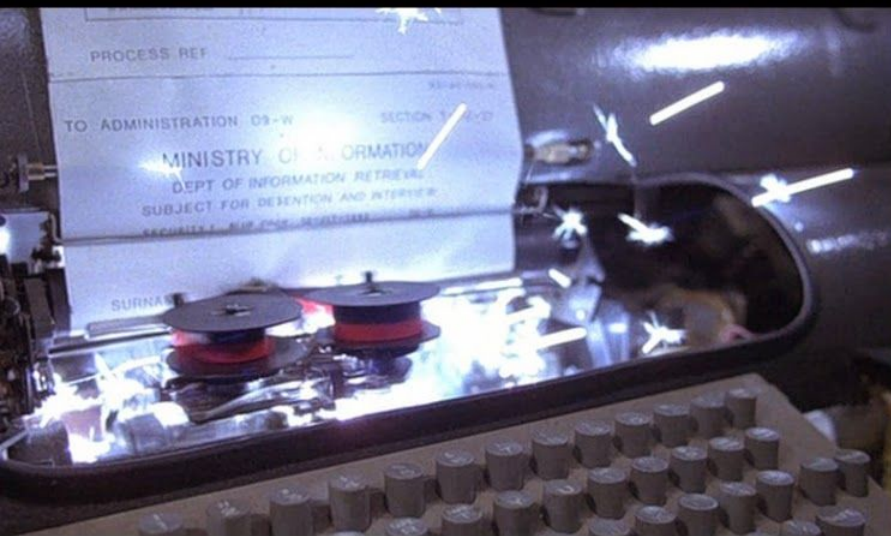
Reference _____

Character Name _____

Special _____

EXPEDITING

SPECIAL





BACKEND

A man in a dark suit, white shirt, and patterned tie stands in front of a chalkboard. He is pointing his right index finger upwards. The chalkboard has handwritten text in white chalk. On the left, it says 'A always' and 'B be'. On the right, it says 'A' followed by a vertical line and then 'ntion'. A black rectangular box with white text is overlaid on the bottom left of the image.

S SHIPPING

A always
B be

S SHIPPING

T

Test

R

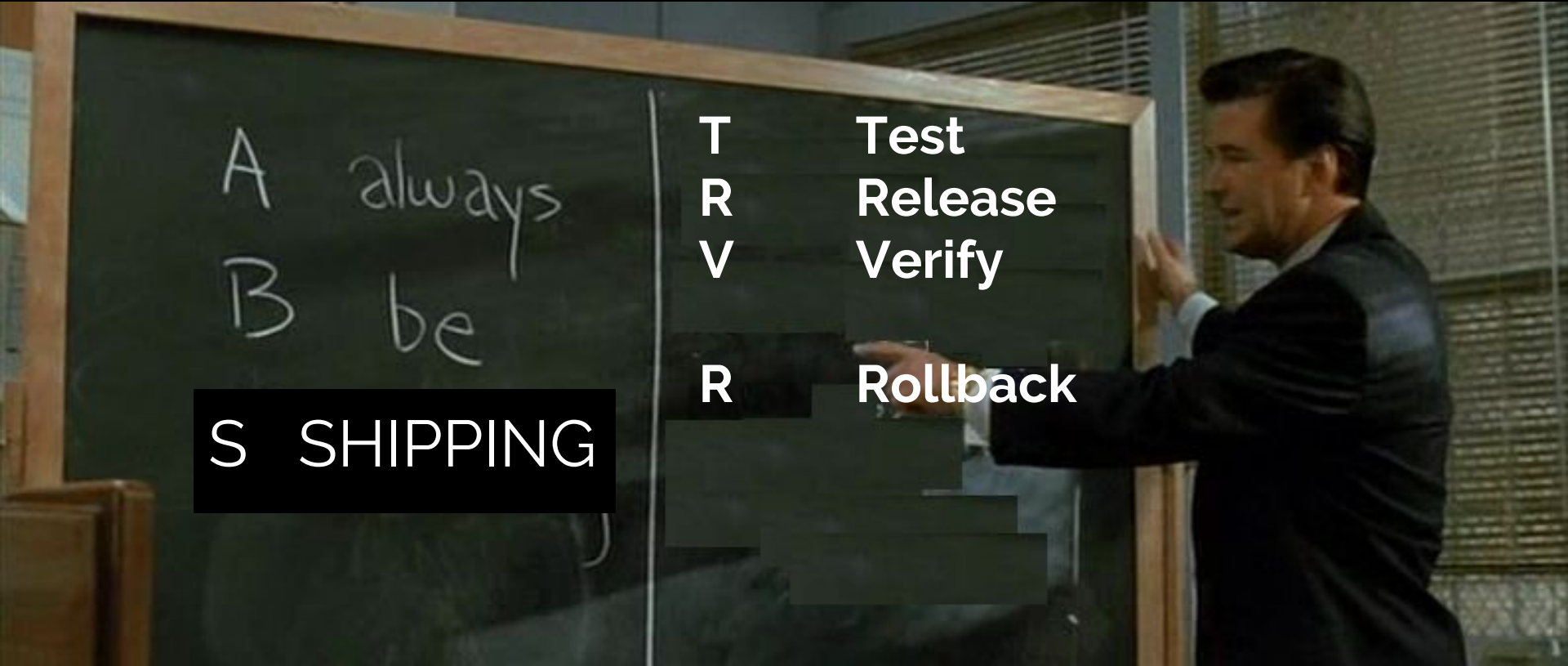
Release

V

Verify

R

Rollback



The scenario is a failed update and more intelligent resource utilization.

~~Automated CI/CD?~~

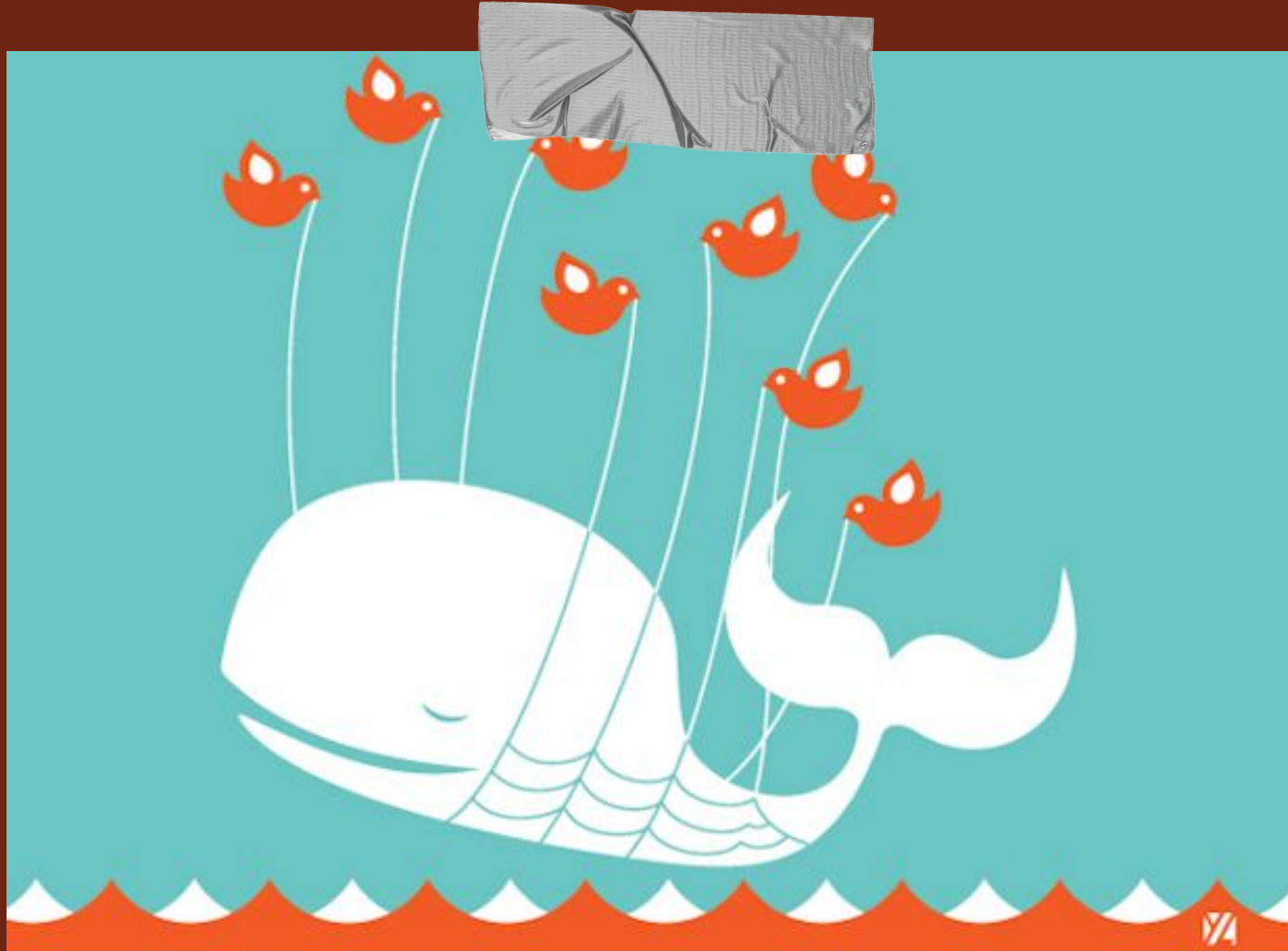
A Friday update breaks the REST API again, making it non-performant. How to fix in the future? Automated load testing with Locust.

How to best do this? Kubernetes to the rescue!

DEMO



WRAP-UP





FEDERAL

GALAXY

TOP NEWS

ENLIST

EXIT



WOULD YOU LIKE TO KNOW MORE?

Resources

- [Hello Minikube](#) - Turning a very simple Node.js app into an application running on Kubernetes.
- [MiniKube](#) - Get Kubernetes on your laptop and get going!
- [Udacity - Scalable Microservices with Kubernetes](#)
(feat. the amazing Kelsey Hightower!)
- [Kubernetes - The Hard Way](#) (Kelsey Hightower!)
- [KataCoda - Kubernetes Labs](#)
- [Kubernetes Cheatsheet](#)

A high-angle, wide shot of a massive crowd of soldiers in full combat gear, including helmets and rifles, standing in tight, repeating rows that stretch far into the background. The soldiers are positioned on a flat, light-colored surface, possibly a tarmac or a large field. The scene is brightly lit, casting sharp shadows. Overlaid on the center of the image is the text 'JOIN UP NOW!' in a large, bold, 3D gold-colored font with a metallic sheen and a slight drop shadow. The text is slanted upwards from left to right. The word 'JOIN' is on the top line, and 'UP NOW!' is on the bottom line.

**JOIN
UP NOW!**



Thank you!

Chris Berg, Firemaple Industries

@thechrisberg

chris@firemapleindustries.com
