Familiar Smells I've Detected in Your Systems Engineering Organization… and How to Fix Them

Dave Mangot

SRECon APAC 2019

Familiar Smells I've Detected in Your Systems Engineering Organization… and How to Fix Them

Dave Mangot
@davemangot

About Me

20+ years in systems engineering, have led DevOps and Systems Engineering transformations at multiple companies

Big companies: Cable & Wireless, Salesforce, SolarWinds

Small Companies: Terracotta, Tagged, Librato

International DevOps contributor



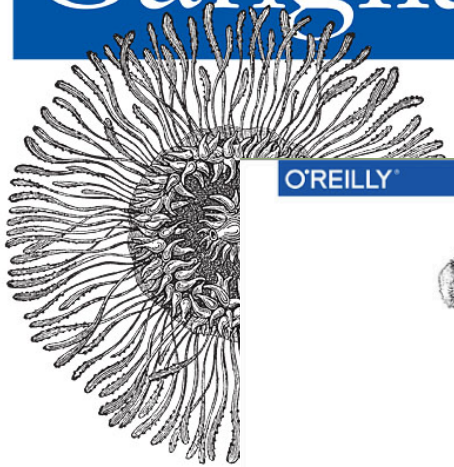
Mastering DevOps

Dave Mangot

[PACKT] VIDEO

Monitoring with

Ganglia



O'REILLY

DevOps Handbook

HOW TO CREATE WORLD-CLASS AGILITY, RELIABILITY, & SECURITY IN TECHNOLOGY ORGANIZATIONS



GENE KIM,
JEZ HUMBLE,
PATRICK DEBOIS,
& JOHN WILLIS

FOREWORD BY JOHN ALLSPAW

O'REILLY



Seeking SRE

CONVERSATIONS ABOUT RUNNING PRODUCTION SYSTEMS AT SCALE

Curated and edited by
David N. Blank-Edelman

MANGOTEQUE

@davemangot



What do you want to spend your engineering tokens on this week?





I've got, so much trouble in my mind…

Sir Joe Quarterman & Free Soul - I've Got So Much Trouble On My Mind - https://www.youtube.com/watch?v=0sZedHraliY

Dat darn pager







Outsourced Ops

The road to hell is paved with short term projects that never died





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Don’t Fix Problems
Solve Them

Crawl - Walk - Run

Top N

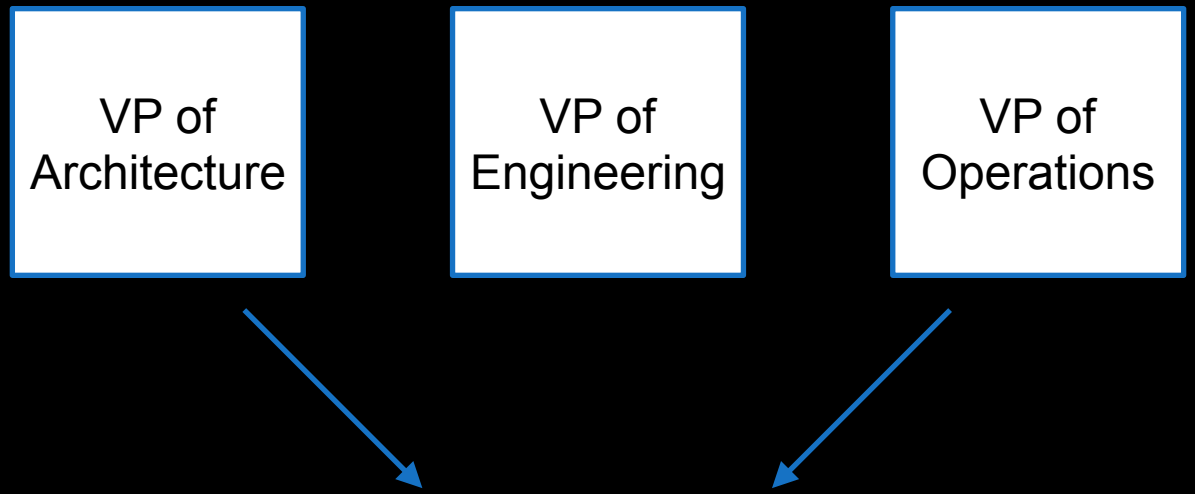

```
{
  "incidents": [
    {
      "id": "PT4KHLK",
      "type": "incident",
      "summary": "[#1234] The server is on fire.",
      "self": "https://api.pagerduty.com/incidents/PT4KHLK",
      "html_url": "https://subdomain.pagerduty.com/incidents/PT4KHLK",
      "incident_number": 1234,
      "created_at": "2015-10-06T21:30:42Z",
      "status": "resolved",
      "title": "The server is on fire.",
      "pending_actions": [
        {
          "type": "unacknowledge",
          "at": "2015-11-10T01:02:52Z"
        },
        {
          "type": "resolve",
          "at": "2015-11-10T04:31:52Z"
        }
      ],
      "incident_key": "baf7cf21b1da41b4b0221008339ff357",
      "service": {
        "id": "PIJ90N7",
        "type": "generic_email",
        "summary": "My Mail Service",
        "self": "https://api.pagerduty.com/services/PIJ90N7",
        "html_url": "https://subdomain.pagerduty.com/services/PIJ90N7"
      },
      "priority": {
        "id": "P53ZZH5",
        "type": "priority_reference",
        "summary": "P2",
        "self": "https://api.pagerduty.com/priorities/P53ZZH5",
        "html_url": null
```




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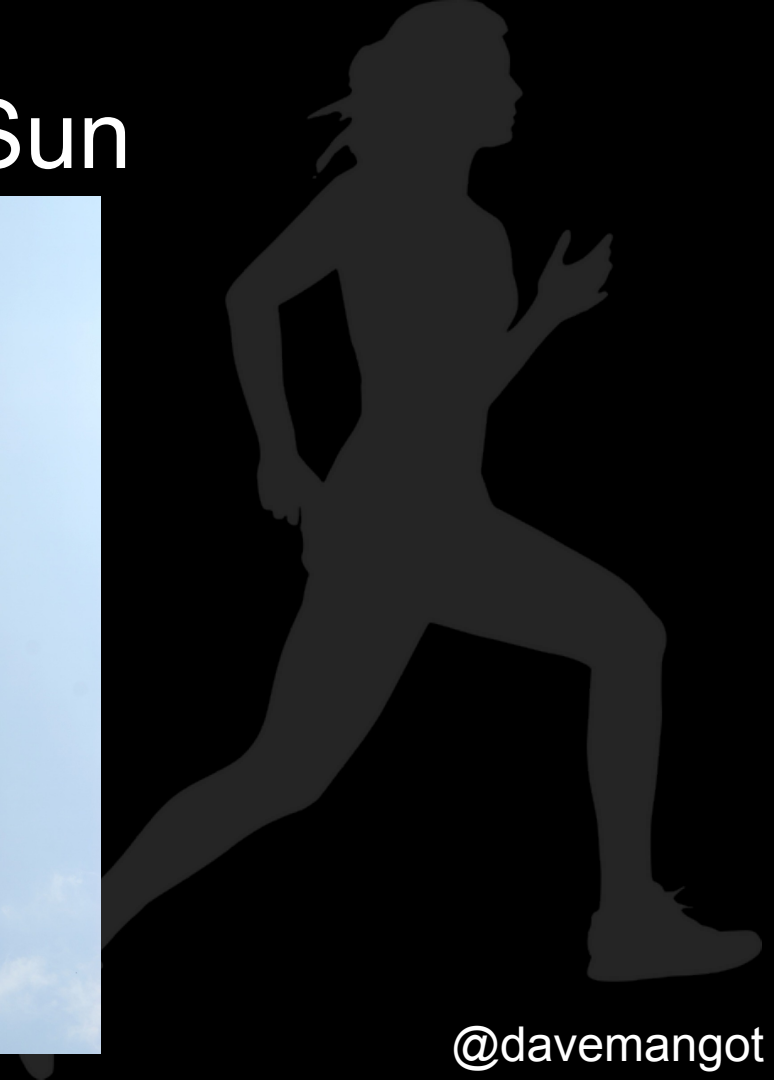
Conway's Law - Eng/Ops



Follow the Sun

You must be this tall…







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Untested Infrastructure

Run Books (procedural)

DON'T DO IT!

Change Control



Crawl - Walk - Run

Infra Unit Tests

- Rspec/Test Kitchen
- ServerSpec
- https://goss.rocks



Tests in Staging

- Stage is like prod
- Stage is like prod
- Stage is like prod



Automated Deployment

- Dark Launches / Feature Flags
- Canaries
- Blue Green Deploys
- Cfg Management (stateful tiers)

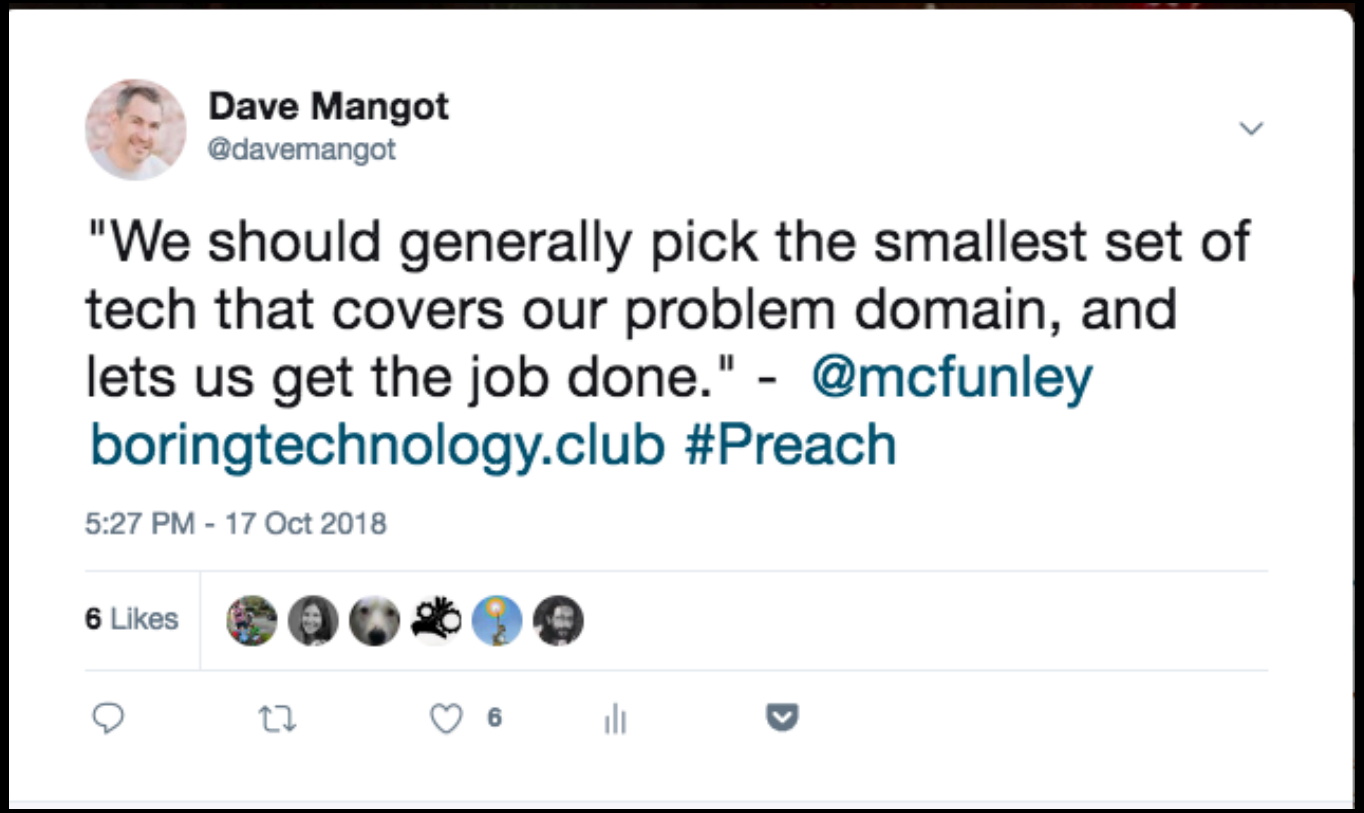




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Boring Technology


Dave Mangot
@davemangot
"We should generally pick the smallest set of tech that covers our problem domain, and lets us get the job done." - @mcfunley boringtechnology.club #Preach
5:27 PM - 17 Oct 2018
6 Likes
6

Avoiding Failure

- bonded network interfaces
- RAID cards
- SAN storage

Taleb Black Swan

“the problem with artificially suppressed volatility is not just that the system tends to become extremely fragile; it is that, at the same time, it exhibits no *visible* risks... These artificially constrained systems become prone to Black Swans. Such environments eventually experience massive blowups... catching everyone off guard and undoing years of stability or, in almost all cases, ending up far worse than they were in their initial volatile state” (p105)[1]. - Nassim Taleb

https://continuousdelivery.com/2013/01/on-antifragility-in-systems-and-organizational-architecture/

MTTR > MTBF

(cattle) (pets)

'So instead of trying to prevent errors, optimize for a relatively frequent occurrence of low-impact errors. “Failure free operations require experience with failure.” For infrequently occurring errors, this means we need to induce them.' - Aaron Blohowiak

https://www.linkedin.com/pulse/reliability-works-aaron-blohowiak/?published=t

But, mah Load Balancer

```
{
    "Comment": "Creating Alias resource record sets in Route 53",
    "Changes": [{
                "Action": "CREATE",
                "ResourceRecordSet": {
                            "Name": "elb.example.com",
                            "Type": "A",
                            "AliasTarget":{
                                    "HostedZoneId": "Z1H1FL5HABSF5",
                                    "DNSName": "ALB-xxxxxxxx.us-west-2.elb.amazonaws.com",
                                    "EvaluateTargetHealth": false
                                }}
                        }]
}
```

Remote Hands is not automation

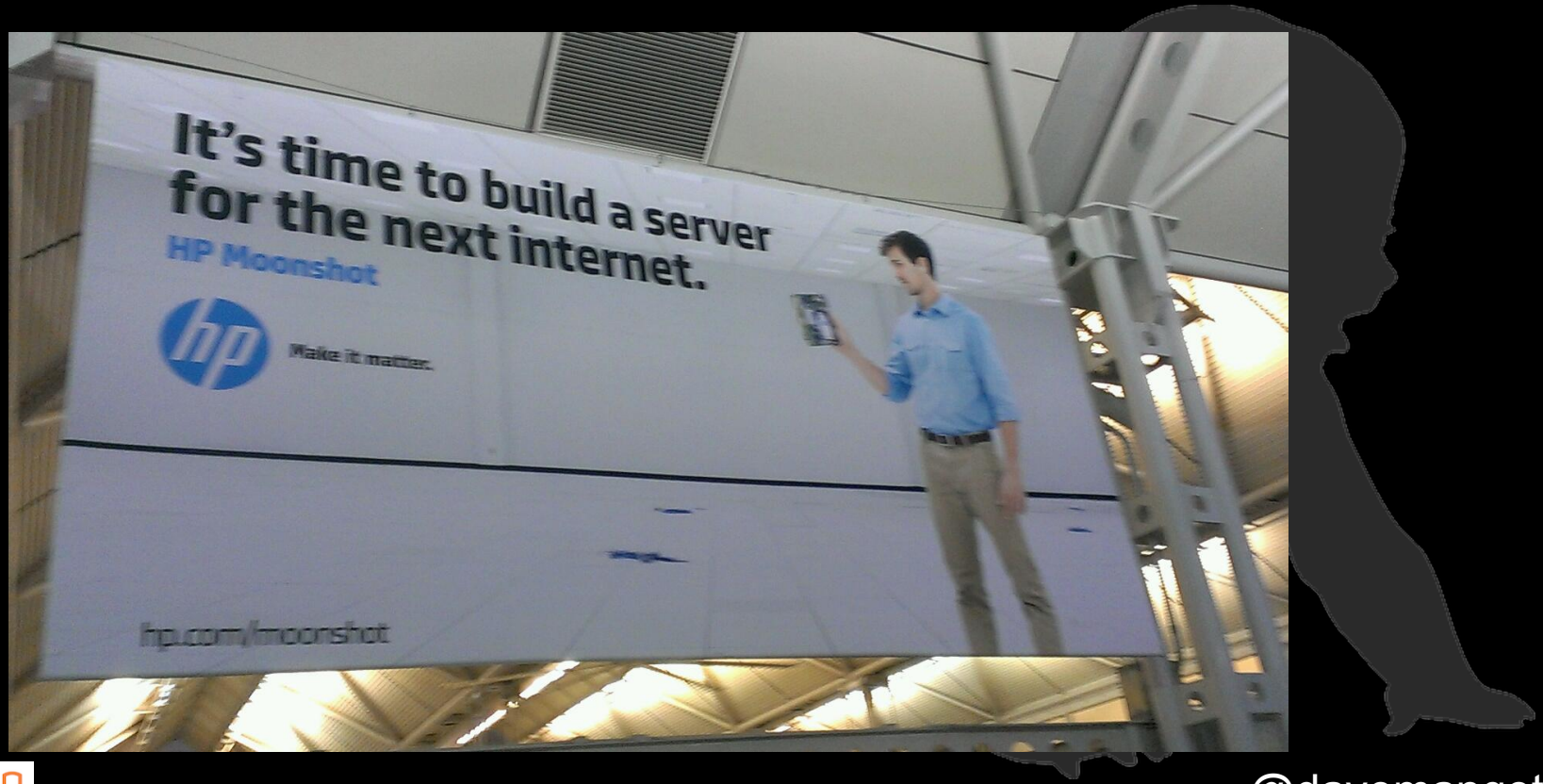


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Crawl - Walk - Run

Configure With Code



Production Readiness Gameday



Chaos Engineering



Crawl - Walk - Run
Stage is like prod (x 3)
Choose Your Incentives!

Questions?

@davemangot