Se7en Deployment Sins

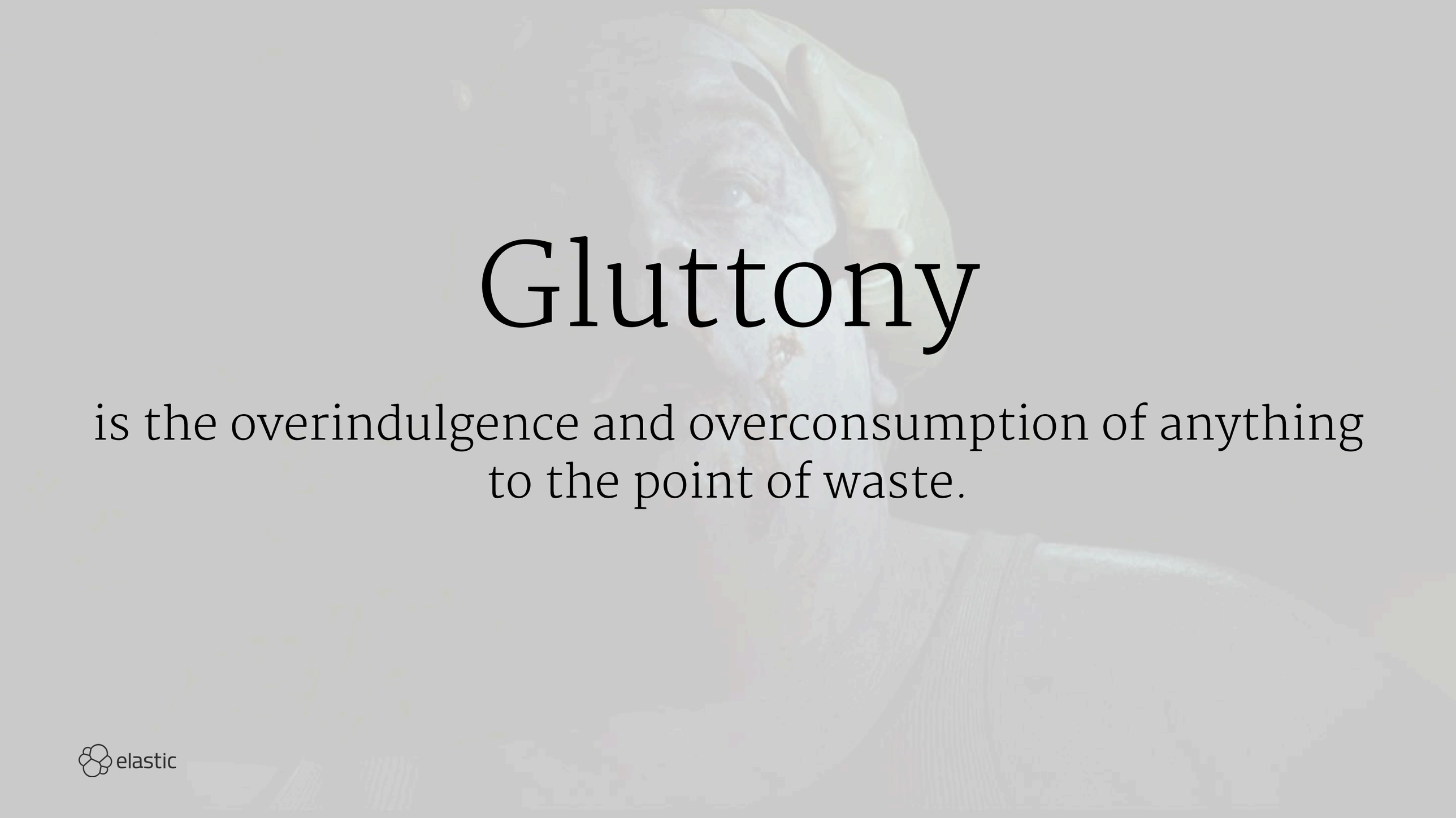
Philipp Krenn @xeraa

elastic

elastic

Infrastructure | Developer 🥑

elastic



Gluttony

is the overindulgence and overconsumption of anything to the point of waste.

ADD ALL THE
DEPENDENCIES
memegenerator.net

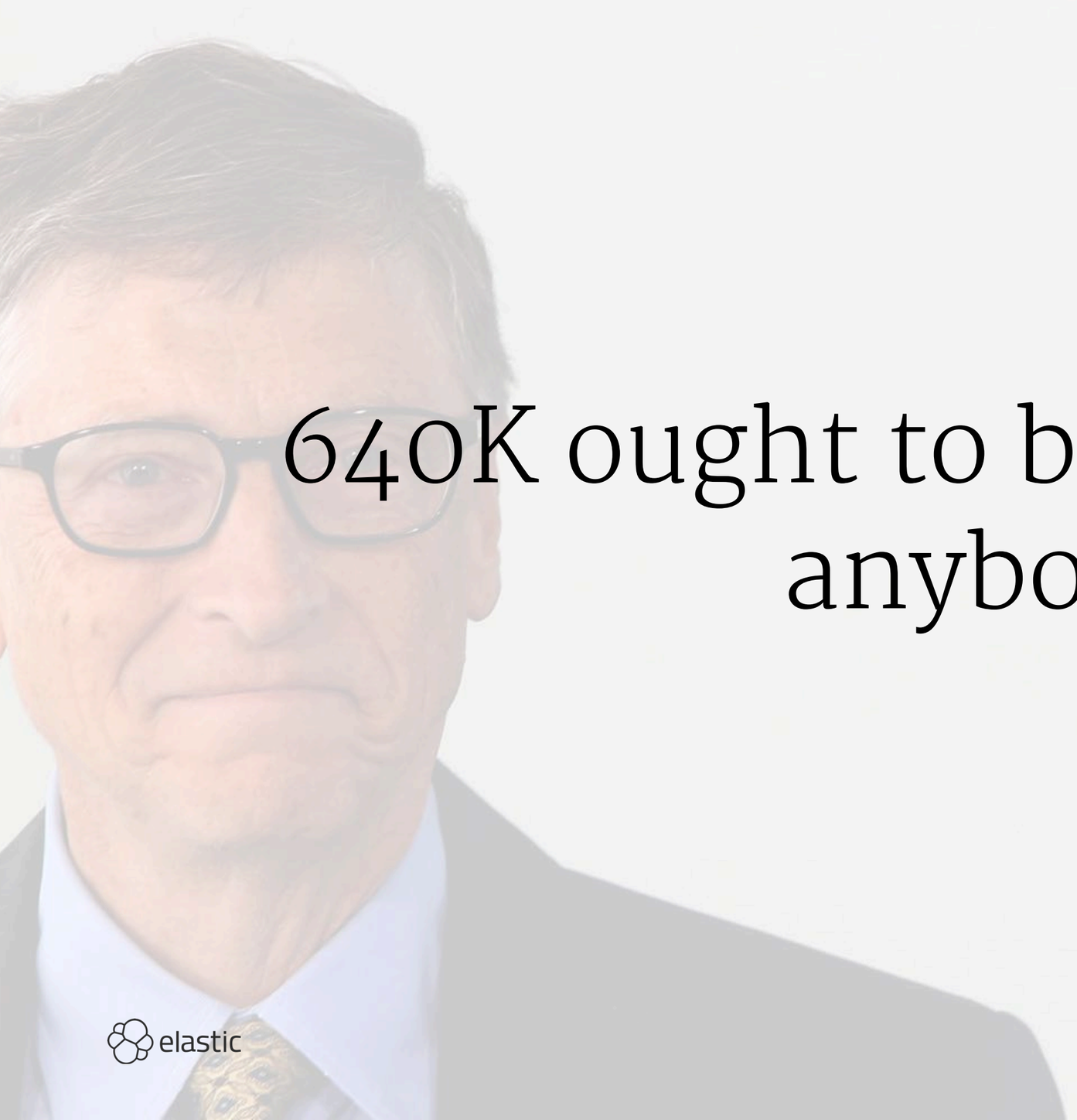
Memory, Disk, Network

Diet

aws-java-sdk-1.8.12.jar 12.9 M
aws-java-sdk-1.11.335.jar 3.4 K

people arguing against fat JARs (only ship the business logic), but perfectly fine with containers – shipping even the JVM 🤔 #RigaDevDays

— **https://twitter.com/xeraa/status/864122131768119296**



640K ought to be enough for anybody

elastic

emoji--1 - **v1.2.1** - returns the -1 emoji

emoji-100 - **v1.2.1** - returns the 100 emoji

emoji-1234 - **v1.2.1** - returns the 1234 emoji

emoji-8ball - **v1.2.1** - returns the 8ball emoji

emoji-a - **v1.2.1** - returns the a emoji

emoji-ab - **v1.2.1** - returns the ab emoji

emoji-abc - **v1.2.1** - returns the abc emoji

emoji-abcd - **v1.2.1** - returns the abcd emoji

emoji-accept - **v1.2.1** - returns the accept emoji

emoji-admission-tickets - **v1.2.1** - returns the admission-tickets emoji

emoji-aerial-tramway - **v1.2.1** - returns the aerial-tramway emoji

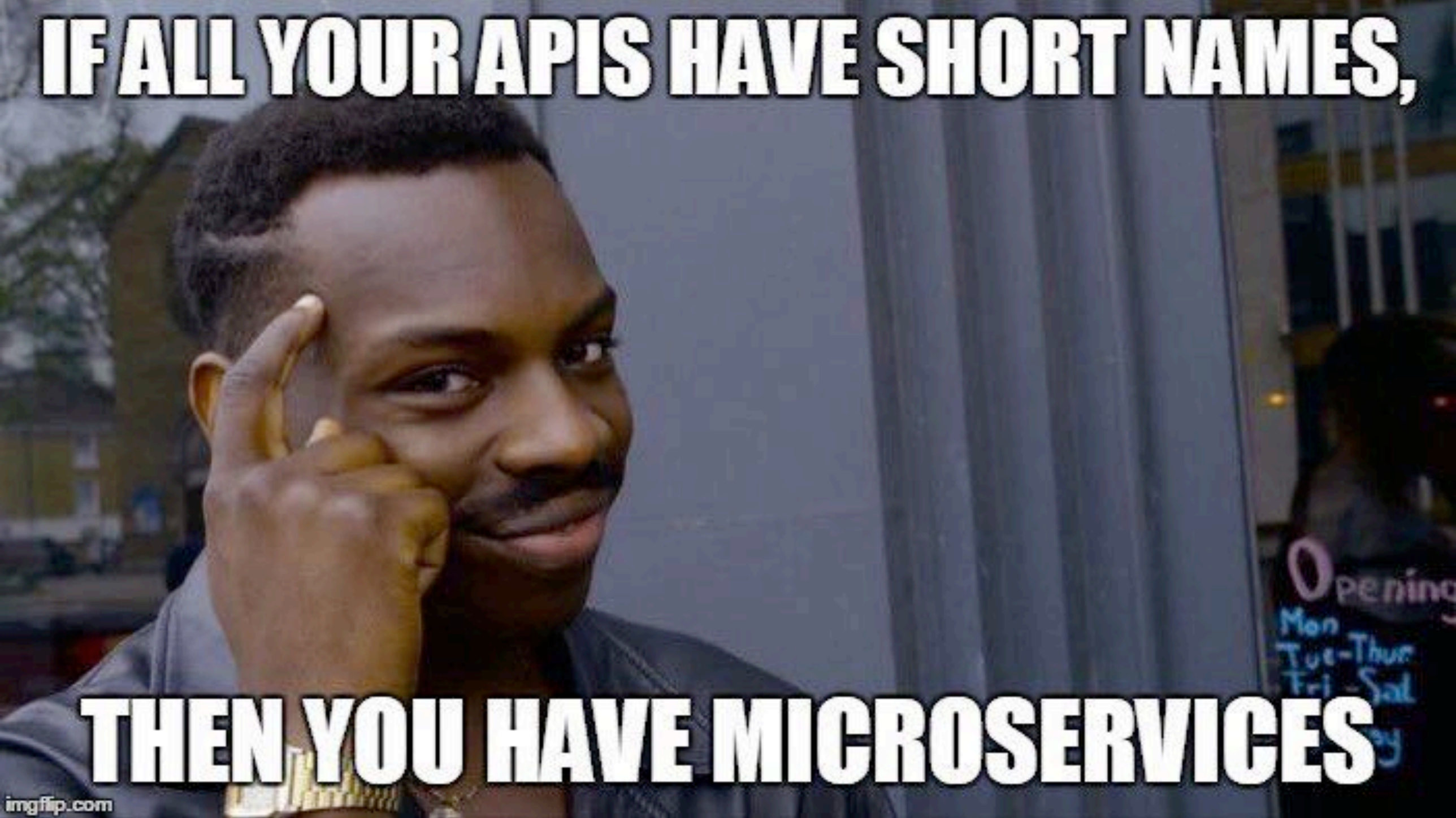
emoji-airplane - **v1.2.1** - returns the airplane emoji

emoji-airplane-arriving - **v1.2.1** - returns the airplane-arriving emoji

emoji-airplane-departure - **v1.2.1** - returns the airplane-departure emoji

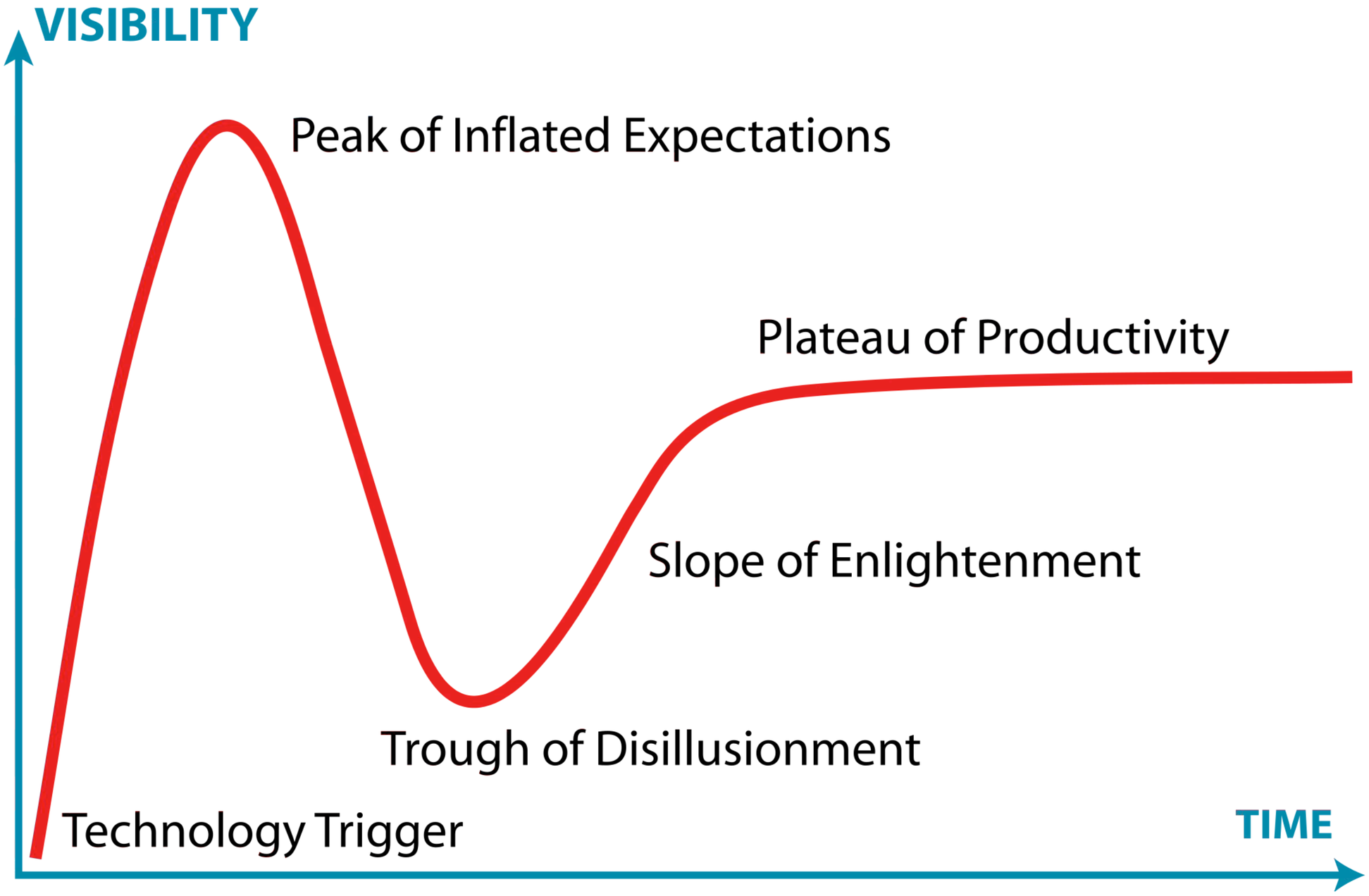
elastic

WHEN YOUR BOSS TELLS YOU
tex
WE'RE CONVERTING TO MICROSERVICES
made on imgur


IF ALL YOUR APIS HAVE SHORT NAMES,
THEN YOU HAVE MICROSERVICES
imgflip.com

Microservices

Nano, Pico, Femto, Atto, **Yocto**


VISIBILITY
Peak of Inflated Expectations
Plateau of Productivity
Slope of Enlightenment
Trough of Disillusionment
Technology Trigger
TIME

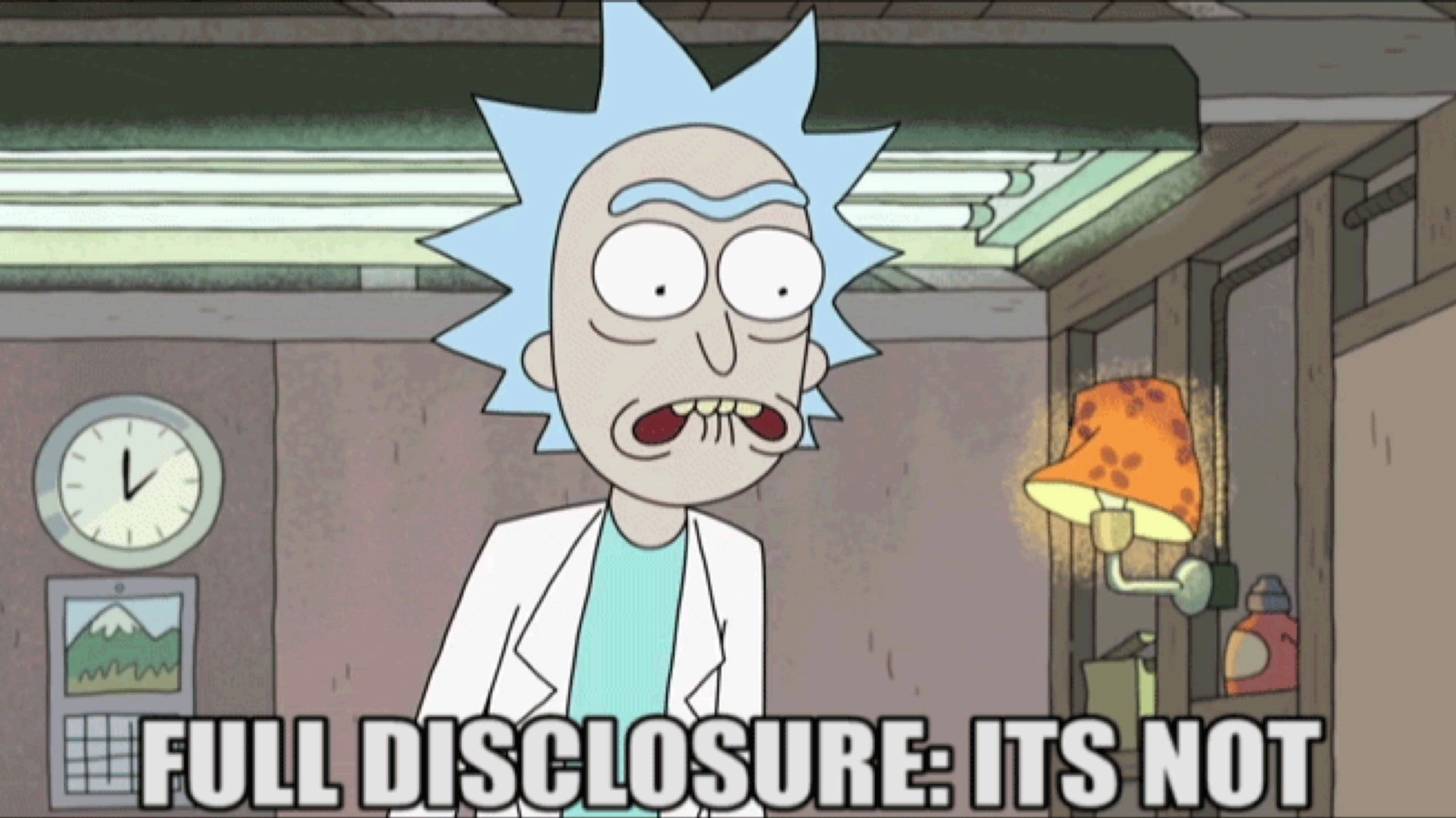
Don’t forget – having legacy software is often a sign of success. Your business was successful to last long enough for your software to become legacy.

— **https://twitter.com/samnewman/status/929622273065136130**

Yes, it helps if

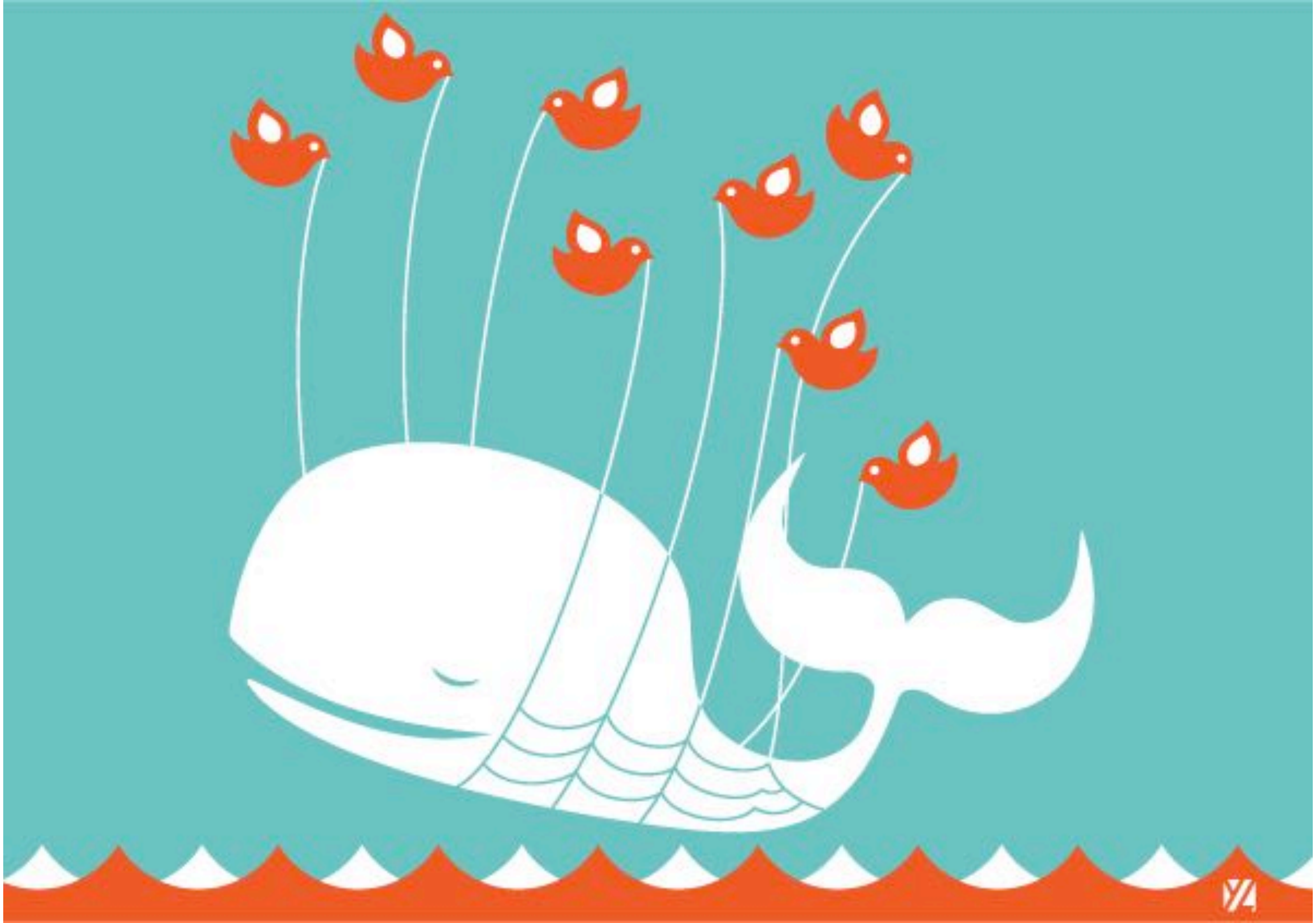
too many people
too many dependencies
not scalable

Will this solve all your problems?


FULL DISCLOSURE: ITS NOT

Sun Microsystems

8 fallacies of distributed computing



edwheeler.deviantart.com @noticiasda

Jeff Hodges

Notes on Distributed Systems for Young Bloods

https://www.somethingsimilar.com/2013/01/14/notes-on-distributed-systems-for-young-bloods/

The Five Nines

Is it resilient? Nein.

Is it available? Nein.

Is it scalable? Nein.

Is it reliable? Nein.

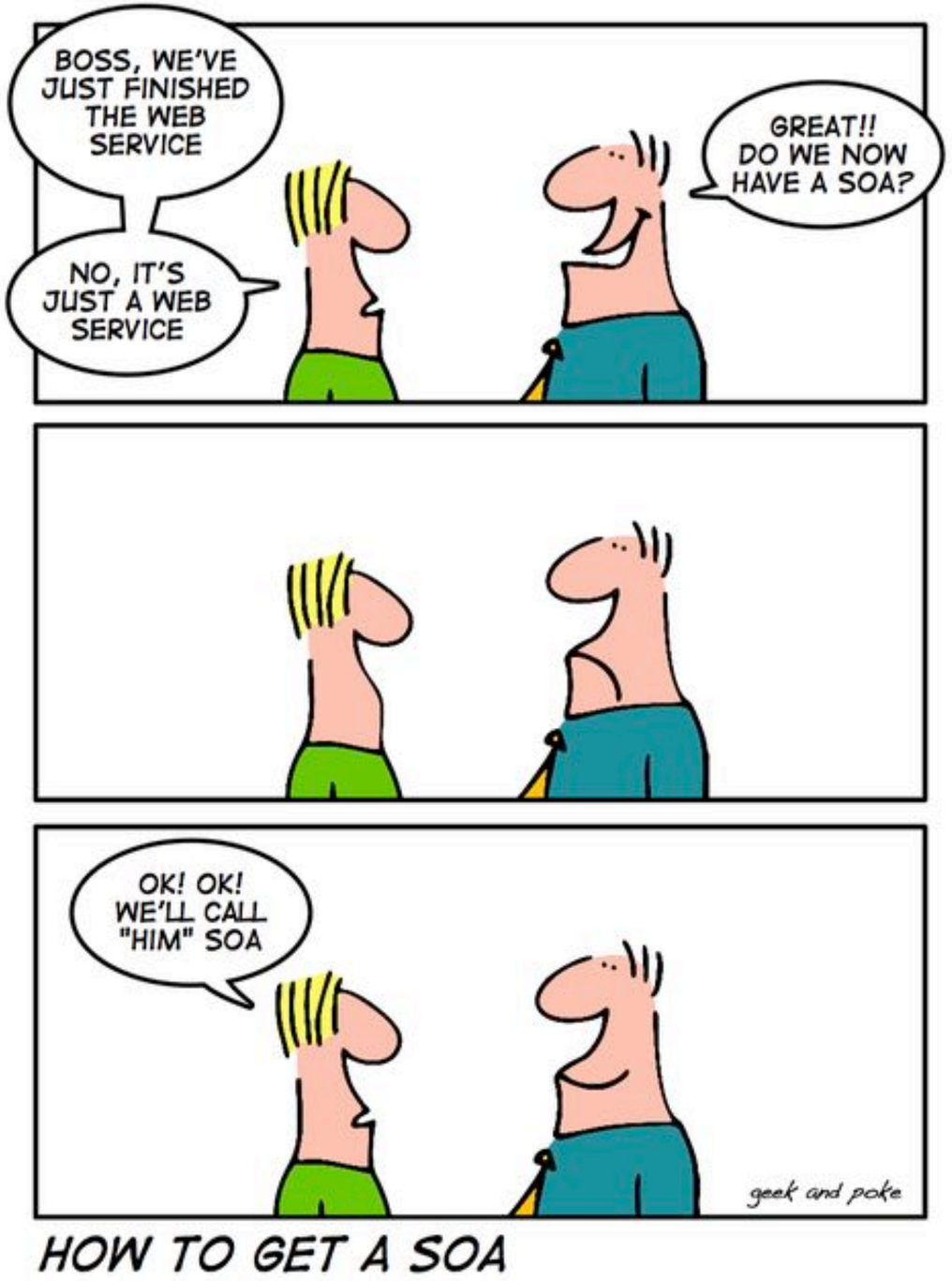
Does it work? Nein.

— **https://twitter.com/marcvolovic/status/898022815668088832**

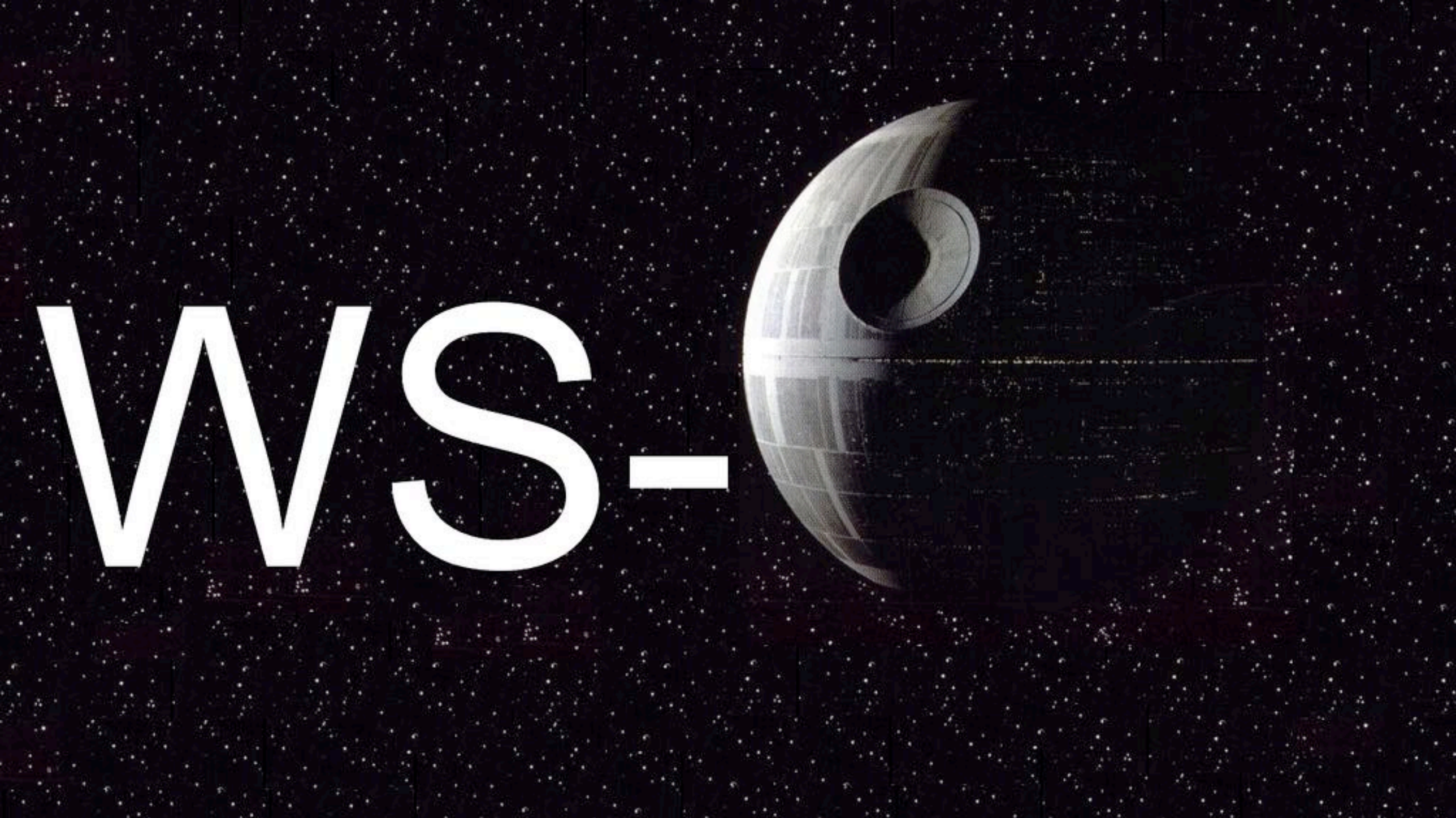
At this point it would be easier if you told us when it DID work.

— **https://twitter.com/honest_update/status/930128629677416450**

SOA done right?

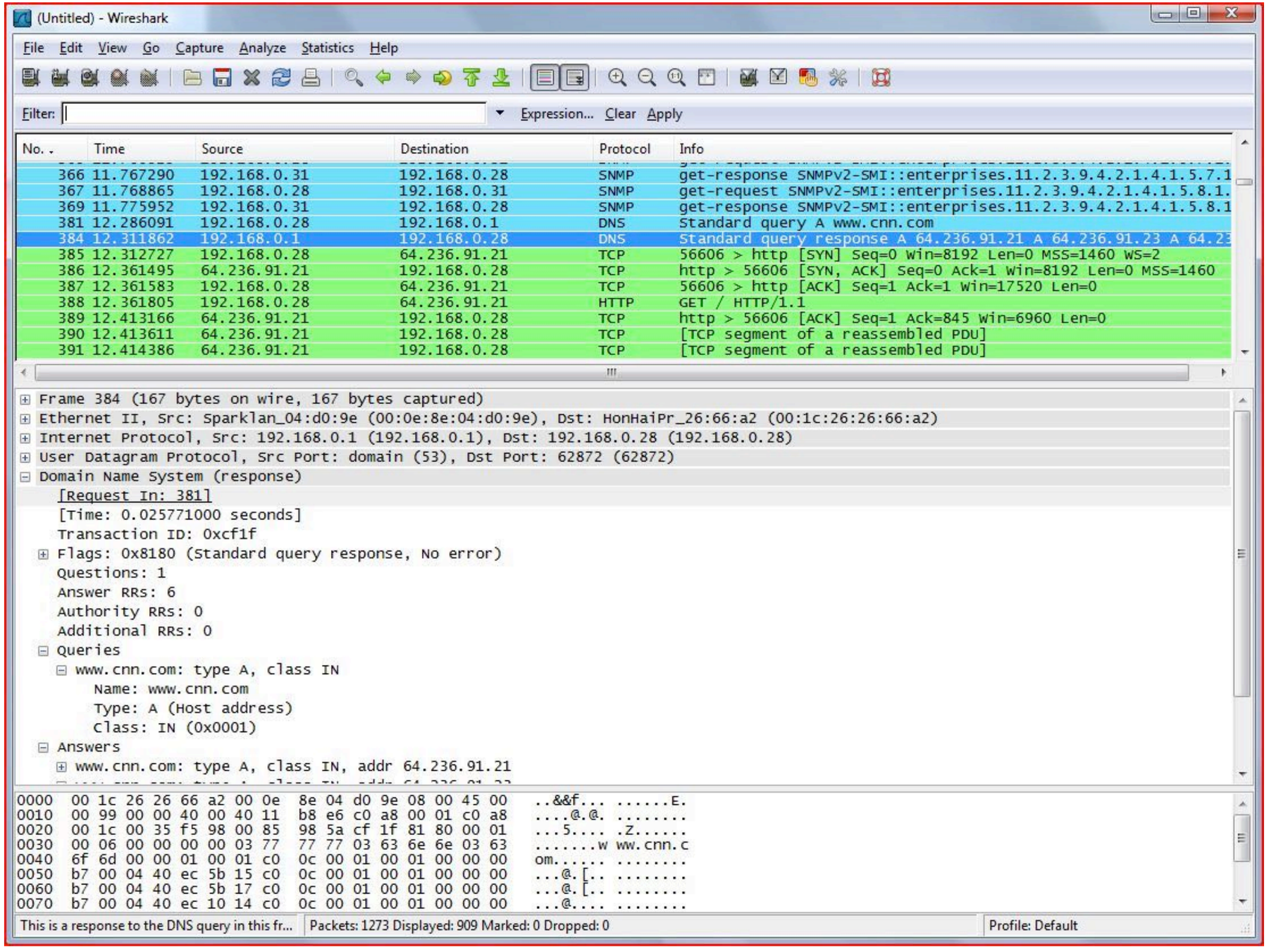


HOW TO GET A SOA


WS-

SOAP: Simple Object Access Protocol.
Except it's not Simple, it's
Complicated. And it's not about
Objects, it's about RPC.
So really: CRAP

— **https://twitter.com/joewalnes/status/563691487586549761**


(Untitled) - Wireshark
File Edit View Go Capture Analyze Statistics Help
Filter: Expression... Clear Apply
No. Time Source Destination Protocol Info
366 11.767290 192.168.0.31 192.168.0.28 SNMP get-response SNMPv2-SMI::enterprises.11.2.3.9.4.2.1.4.1.5.7.1
367 11.768865 192.168.0.28 192.168.0.31 SNMP get-request SNMPv2-SMI::enterprises.11.2.3.9.4.2.1.4.1.5.8.1.
369 11.775952 192.168.0.31 192.168.0.28 SNMP get-response SNMPv2-SMI::enterprises.11.2.3.9.4.2.1.4.1.5.8.1
381 12.286091 192.168.0.28 192.168.0.1 DNS Standard query A www.cnn.com
384 12.311862 192.168.0.1 192.168.0.28 DNS Standard query response A 64.236.91.21 A 64.236.91.23 A 64.23
385 12.312727 192.168.0.28 64.236.91.21 TCP 56606 > http [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=2
386 12.361495 64.236.91.21 192.168.0.28 TCP http > 56606 [SYN, ACK] Seq=0 Ack=1 Win=8192 Len=0 MSS=1460
387 12.361583 192.168.0.28 64.236.91.21 TCP 56606 > http [ACK] Seq=1 Ack=1 Win=17520 Len=0
388 12.361805 192.168.0.28 64.236.91.21 HTTP GET / HTTP/1.1
389 12.413166 64.236.91.21 192.168.0.28 TCP http > 56606 [ACK] Seq=1 Ack=845 Win=6960 Len=0
390 12.413611 64.236.91.21 192.168.0.28 TCP [TCP segment of a reassembled PDU]
391 12.414386 64.236.91.21 192.168.0.28 TCP [TCP segment of a reassembled PDU]
Frame 384 (167 bytes on wire, 167 bytes captured)
Ethernet II, Src: Sparklan_04:d0:9e (00:0e:8e:04:d0:9e), Dst: HonHaiPr_26:66:a2 (00:1c:26:26:66:a2)
Internet Protocol, Src: 192.168.0.1 (192.168.0.1), Dst: 192.168.0.28 (192.168.0.28)
User Datagram Protocol, Src Port: domain (53), Dst Port: 62872 (62872)
Domain Name System (response)
[Request In: 381]
[Time: 0.025771000 seconds]
Transaction ID: 0xcf1f
Flags: 0x8180 (Standard query response, No error)
Questions: 1
Answer RRs: 6
Authority RRs: 0
Additional RRs: 0
Queries
www.cnn.com: type A, class IN
Name: www.cnn.com
Type: A (Host address)
Class: IN (0x0001)
Answers
www.cnn.com: type A, class IN, addr 64.236.91.21
0000 00 1c 26 26 66 a2 00 0e 8e 04 d0 9e 08 00 45 00 ..&&f... ......E.
0010 00 99 00 00 40 00 40 11 b8 e6 c0 a8 00 01 c0 a8 ....@.@. ....
0020 00 1c 00 35 f5 98 00 85 98 5a cf 1f 81 80 00 01 ...5.... .Z......
0030 00 06 00 00 00 00 03 77 77 77 03 63 6e 6e 03 63 ....w ww.cnn.c
0040 6f 6d 00 00 01 00 01 c0 0c 00 01 00 01 00 00 00 om...... ....
0050 b7 00 04 40 ec 5b 15 c0 0c 00 01 00 01 00 00 00 ...@.[.. ....
0060 b7 00 04 40 ec 5b 17 c0 0c 00 01 00 01 00 00 00 ...@.[.. ....
0070 b7 00 04 40 ec 10 14 c0 0c 00 01 00 01 00 00 00 ...@.... ....
This is a response to the DNS query in this fr...
Packets: 1273 Displayed: 909 Marked: 0 Dropped: 0
Profile: Default

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

— **https://twitter.com/honest_update/status/651897353889259520**

elastic

Here's a diagram of two microservices and their shared database.

— **https://twitter.com/mathiasverraes/status/711168935798902785**

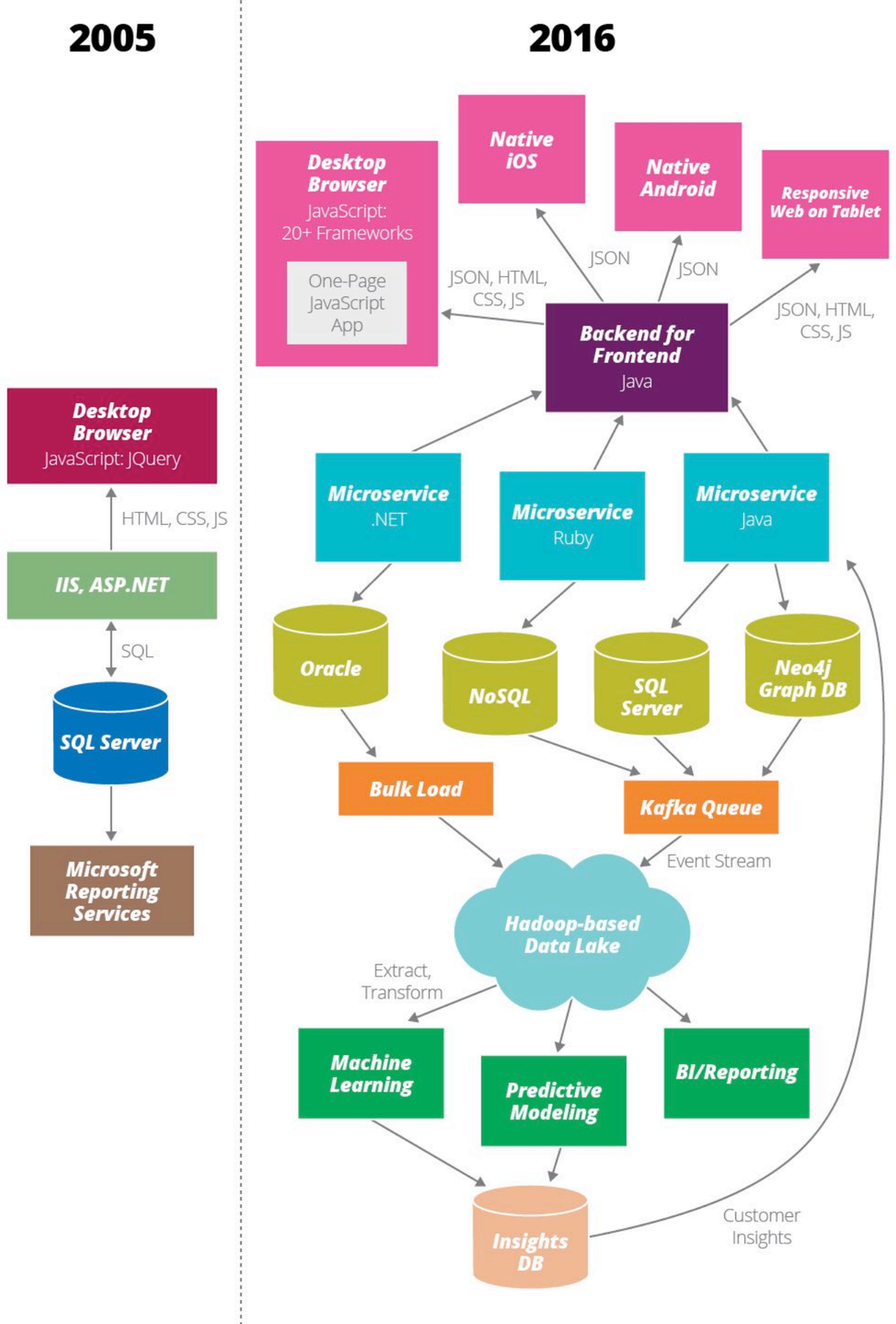
OH: "replace your shared monolithic DB with a shared monolithic stream store"

— **https://twitter.com/ntcoding/status/928902644764200960**

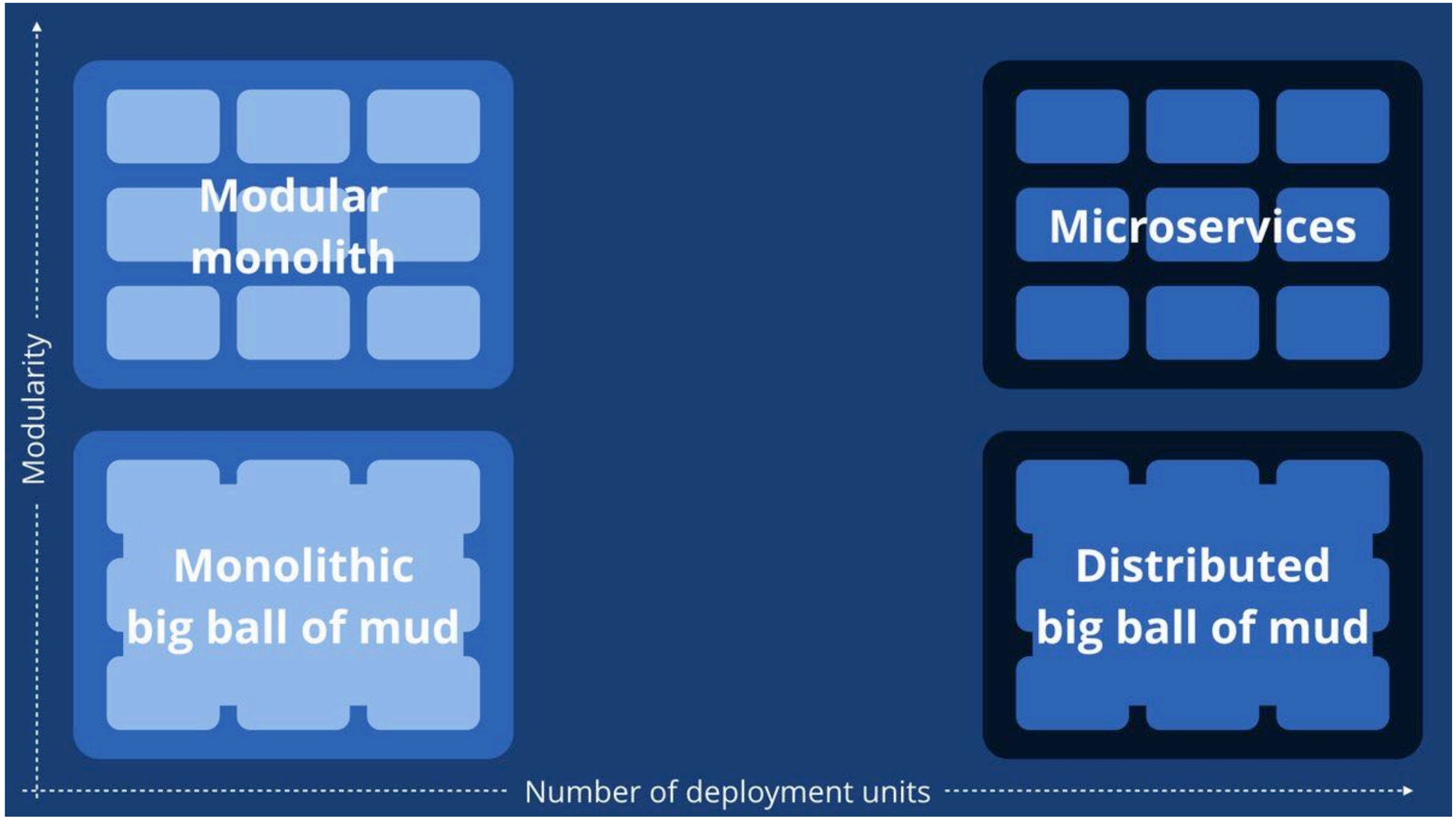
...don't even consider microservices unless you have a system that's too complex to manage as a monolith. The majority of software systems should be built as a single monolithic application.

Do pay attention to good modularity within that monolith, but don't try to separate it into separate services.

— **http://martinfowler.com/bliki/MicroservicePremium.html**


2005
Desktop Browser
JavaScript: JQuery
HTML, CSS, JS
IIS, ASP.NET
SQL
SQL Server
Microsoft Reporting Services
2016
Desktop Browser
JavaScript: 20+ Frameworks
One-Page JavaScript App
Native iOS
Native Android
Responsive Web on Tablet
JSON, HTML, CSS, JS
JSON
JSON
JSON, HTML, CSS, JS
Backend for Frontend
Java
Microservice .NET
Microservice Ruby
Microservice Java
Oracle
NoSQL
SQL Server
Neo4j Graph DB
Bulk Load
Kafka Queue
Event Stream
Hadoop-based Data Lake
Extract, Transform
Machine Learning
Predictive Modeling
BI/Reporting
Insights DB
Customer Insights

elastic



https://twitter.com/simonbrown/status/847339104874381312

The #microservices bandwagon exists because the name is cool. Monoliths just need marketing help... #MegaPlatform #UberContainer #StereoLith

— **https://twitter.com/sjmaple/status/724541627407147008**

#Serverfull

A word of the week: Microlith – a huge enterprise app ported to one, fat Docker container. #MicroserviceJokes

— **https://twitter.com/rmehmandarov/status/865542627004788737**

If you want to implement microservices, the 1st thing you need to do is implement aggregated logging. The 2nd is implement correlation IDs

— **https://twitter.com/samnewman/status/862255875125366786**

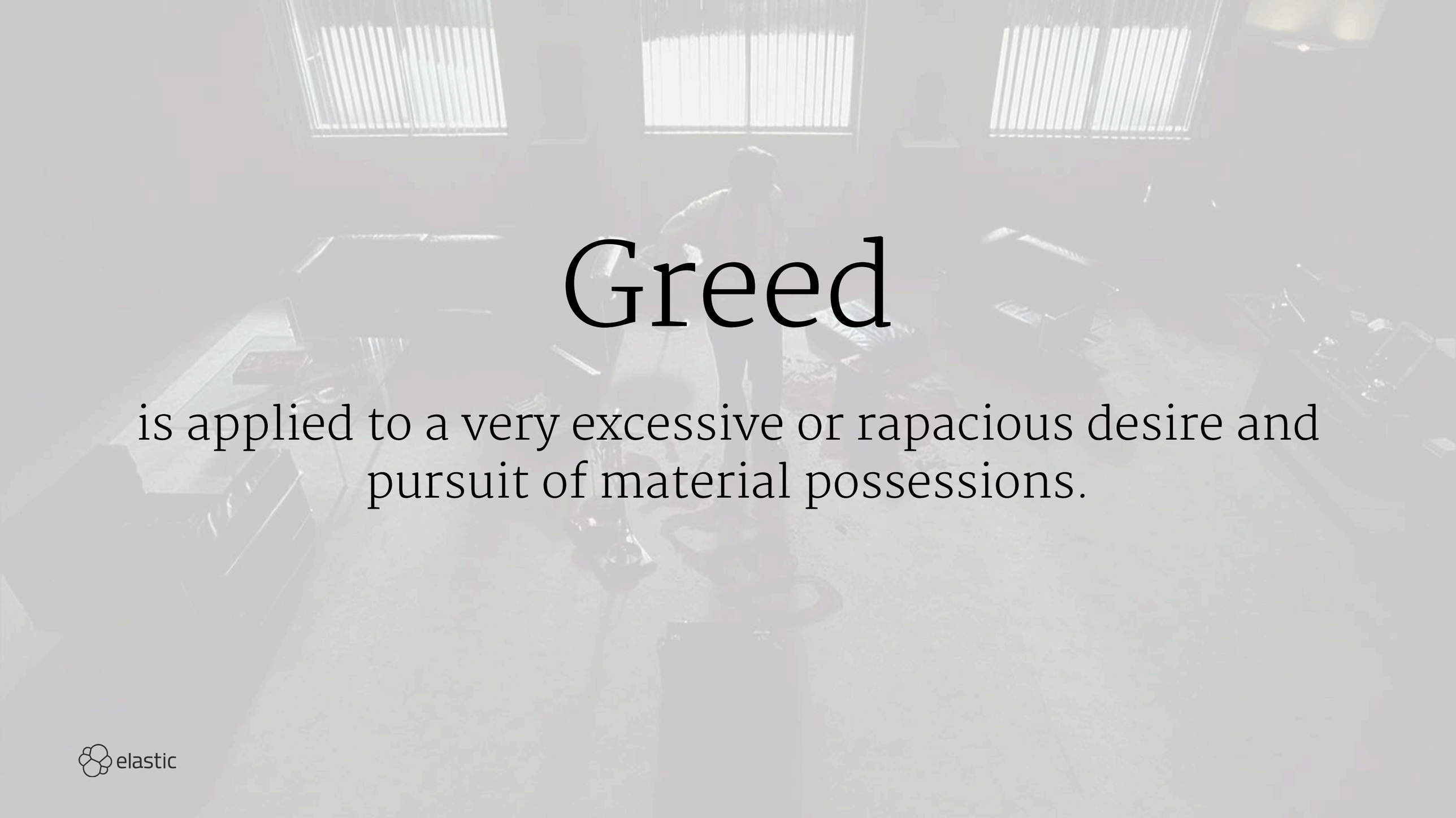
Microservices can help large number of people go faster by allowing more autonomy. I remain to be convinced it does the same for small teams

— **https://twitter.com/samnewman/status/778118760226062336**

Repeat after me

I'm not Facebook, Google, or Amazon

elastic



Greed

is applied to a very excessive or rapacious desire and pursuit of material possessions.

elastic

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Sloth

is sometimes defined as physical laziness, but spiritual laziness is emphasized.

WHAT DO WE WANT?

TO DELIVER BETTER SOFTWARE!

WHEN DO WE WANT IT?

CONTINUOUSLY!!!

memecenter.com MemeCenter

Continuous Integration **CI**

Build and test every push

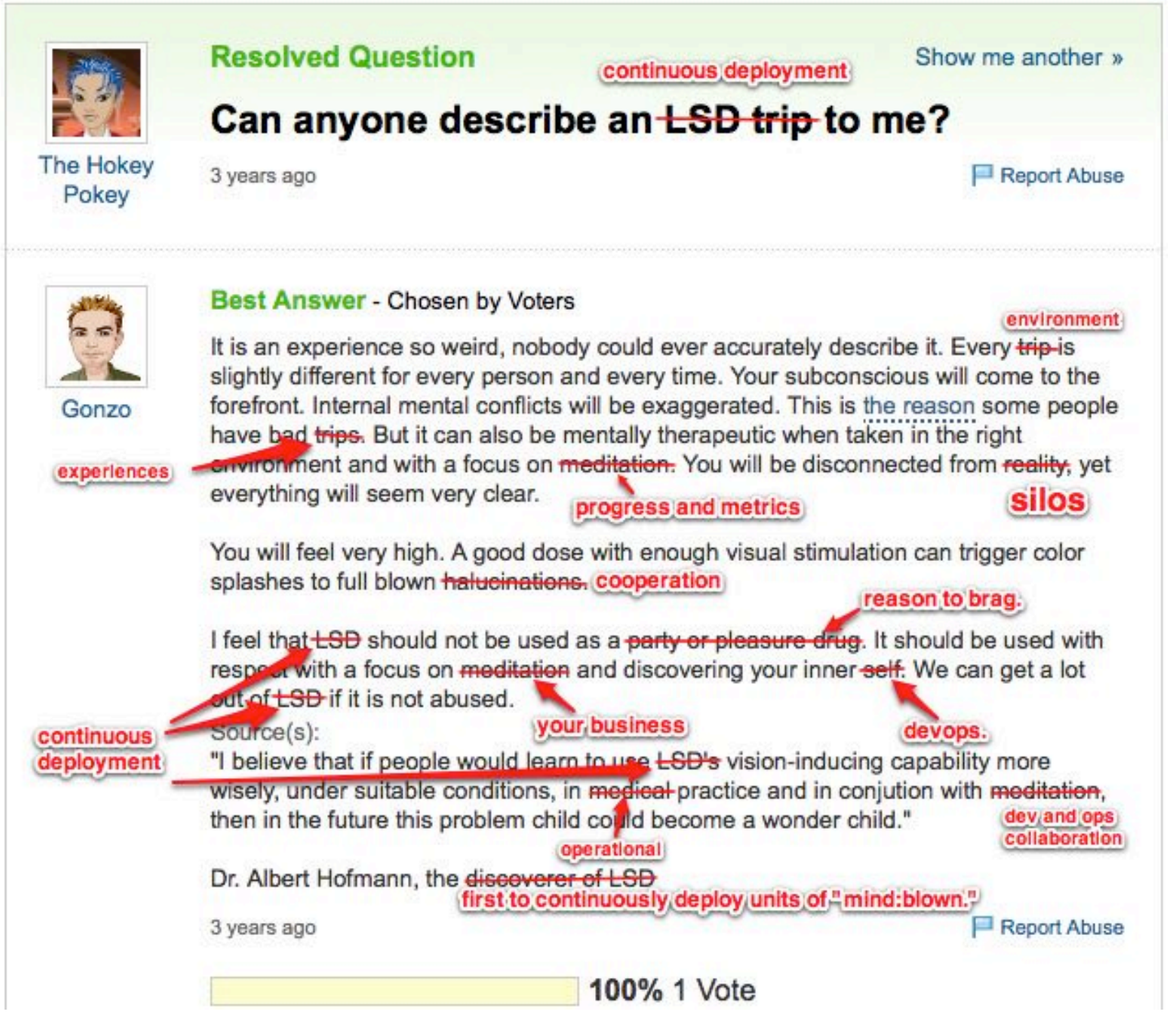
Continuous Delivery

CD

Manual production deployment

Continuous Deployment **CD**

Automated production deployment



https://twitter.com/allspaw/status/925490726468771840

Gonzo

Best Answer - Chosen by Voters

It is an experience so weird, nobody could ever accurately describe it. Every ~~trip~~ is slightly different for every person and every time. Your subconscious will come to the forefront. Internal mental conflicts will be exaggerated. This is the reason some people have bad ~~trips.~~ But it can also be mentally therapeutic when taken in the right environment and with a focus on ~~meditation.~~ You will be disconnected from ~~reality,~~ yet everything will seem very clear.

You will feel very high. A good dose with enough visual stimulation can trigger color splashes to full blown ~~hallucinations.~~

I feel that ~~LSD~~ should not be used as a ~~party or pleasure drug~~. It should be used with respect with a focus on ~~meditation~~ and discovering your inner ~~self~~. We can get a lot out of ~~LSD~~ if it is not abused.

Source(s):

"I believe that if people would learn to use ~~LSD's~~ vision-inducing capability more wisely, under suitable conditions, in ~~medical~~ practice and in conjution with ~~meditation~~, then in the future this problem child could become a wonder child."

Dr. Albert Hofmann, the ~~discoverer of LSD~~

3 years ago

Report Abuse

100% 1 Vote

environment

experiences

progress and metrics

silos

cooperation

reason to brag.

continuous deployment

your business

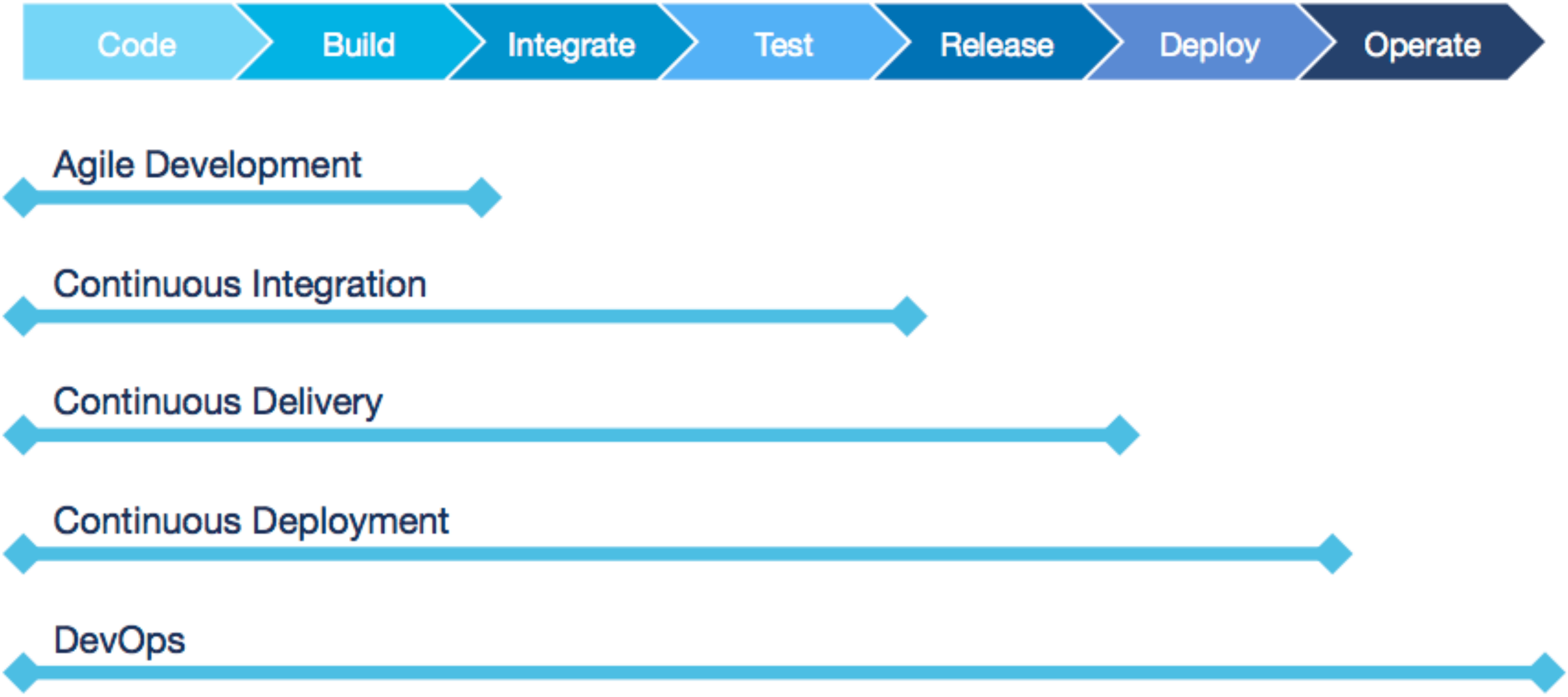
devops.

dev and ops collaboration

operational

first to continuously deploy units of "mind:blown."

elastic


Code
Build
Integrate
Test
Release
Deploy
Operate
Agile Development
Continuous Integration
Continuous Delivery
Continuous Deployment
DevOps

Facebook switched to Continuous Delivery / Deployment in 04/2017

https://code.facebook.com/posts/270314900139291/rapid-release-at-massive-scale/

60% OF THE TIME
DEPLOYMENTS WORK
EVERYTIME!

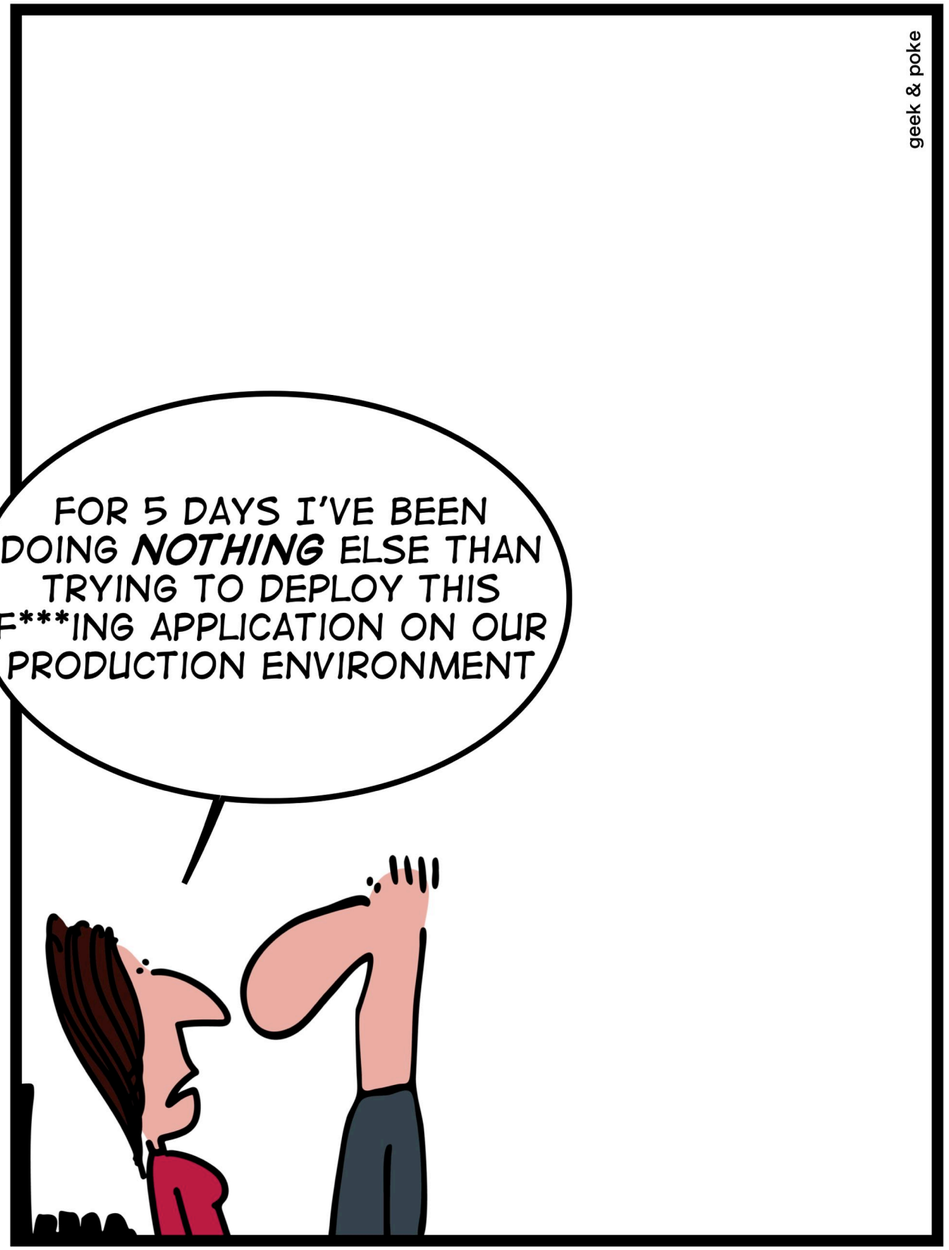
*DDD (Russian: Davai Davai Deploy) – Just deploy this sh*t already. Come on!*

— **https://twitter.com/Steve_Jules/status/862247438551265280**

Also

Deadline Driven Deployment

SIMPLY EXPLAINED



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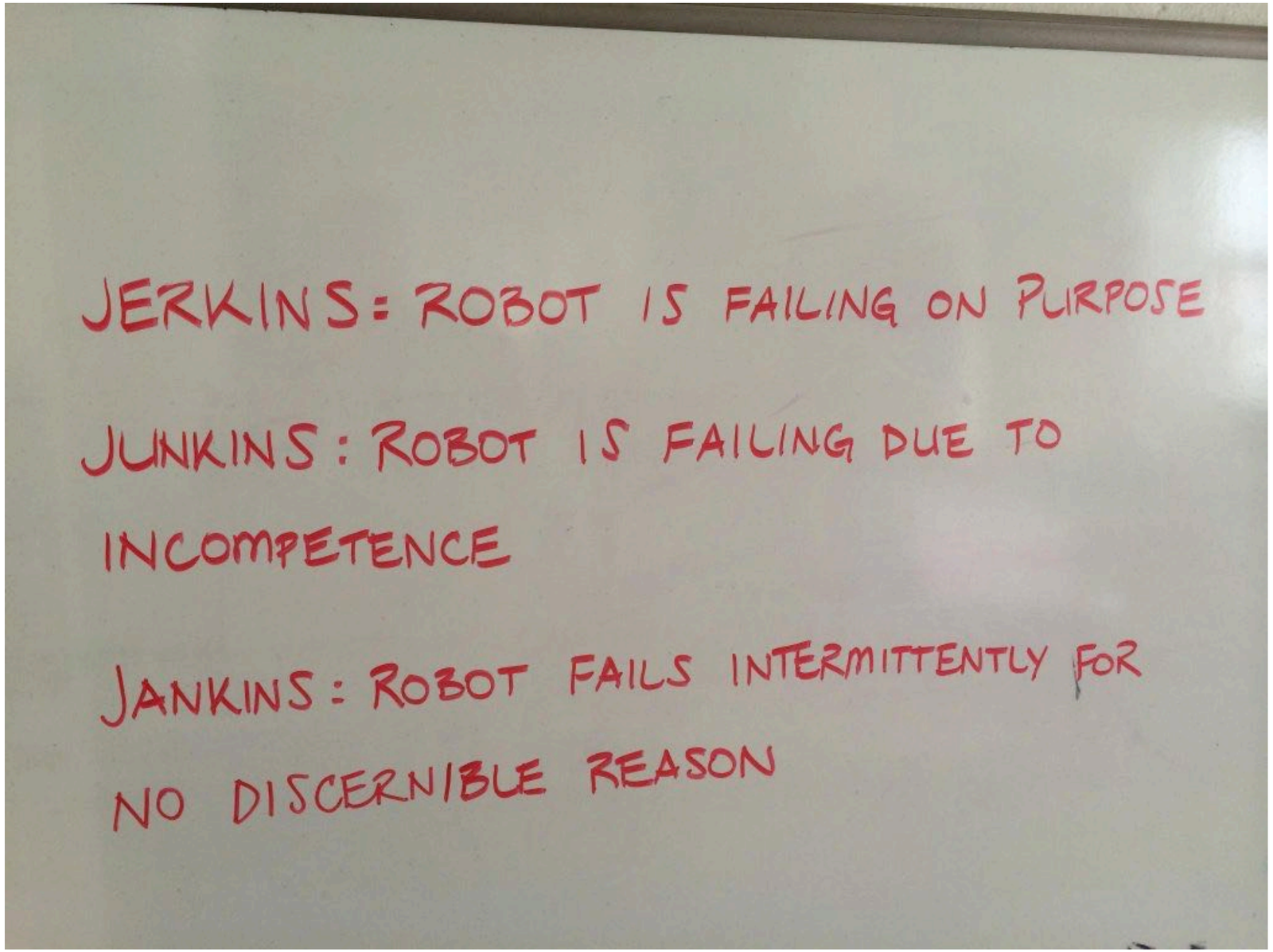
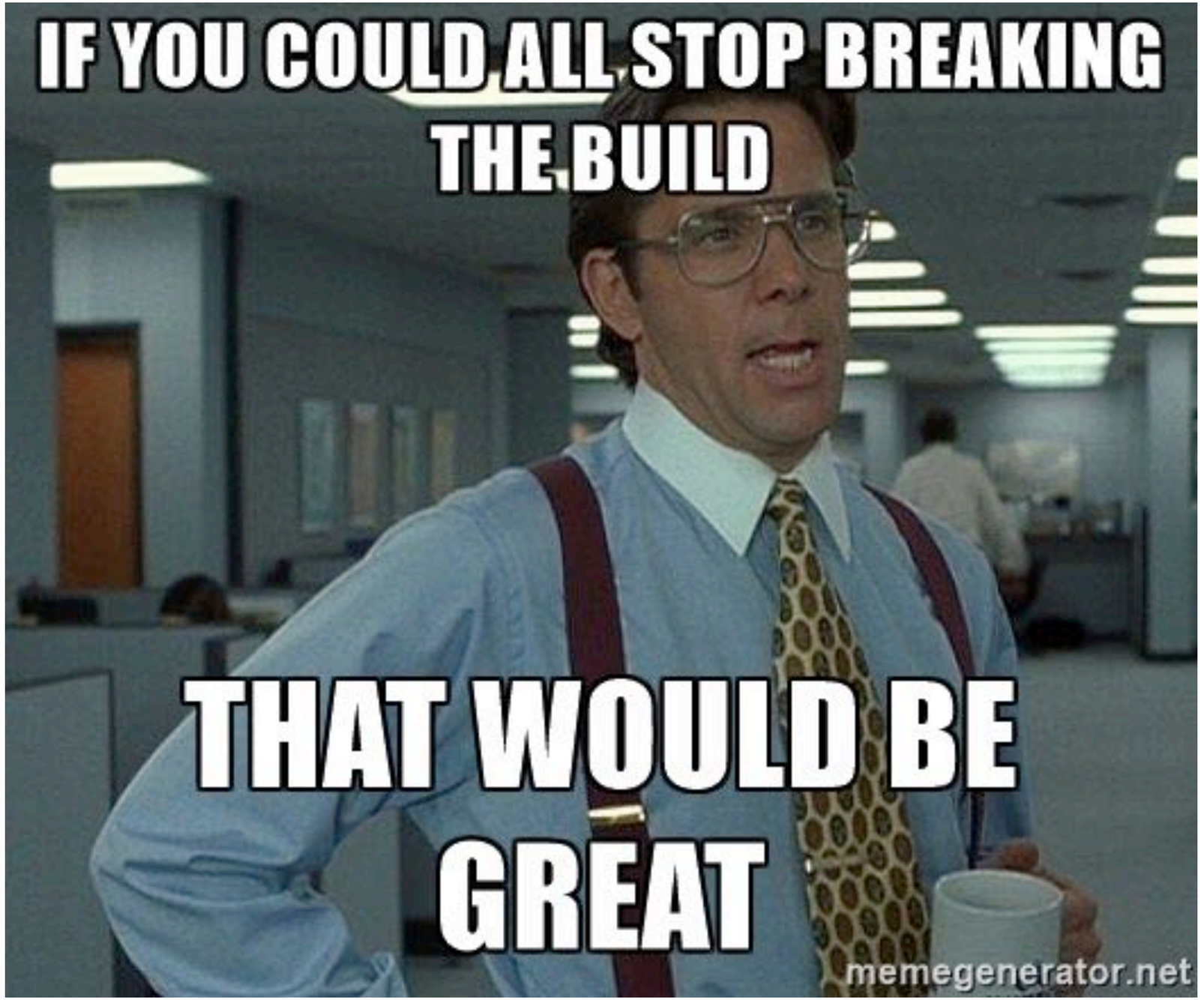
Continuous

life or death cycle?

Jenkins



https://twitter.com/ericqweinstein/status/529319496029589504


IF YOU COULD ALL STOP BREAKING THE BUILD
THAT WOULD BE GREAT
memegenerator.net

Separate code and config

Do not commit secrets

HashiCorp Vault
Ansible Vault
...

elastic

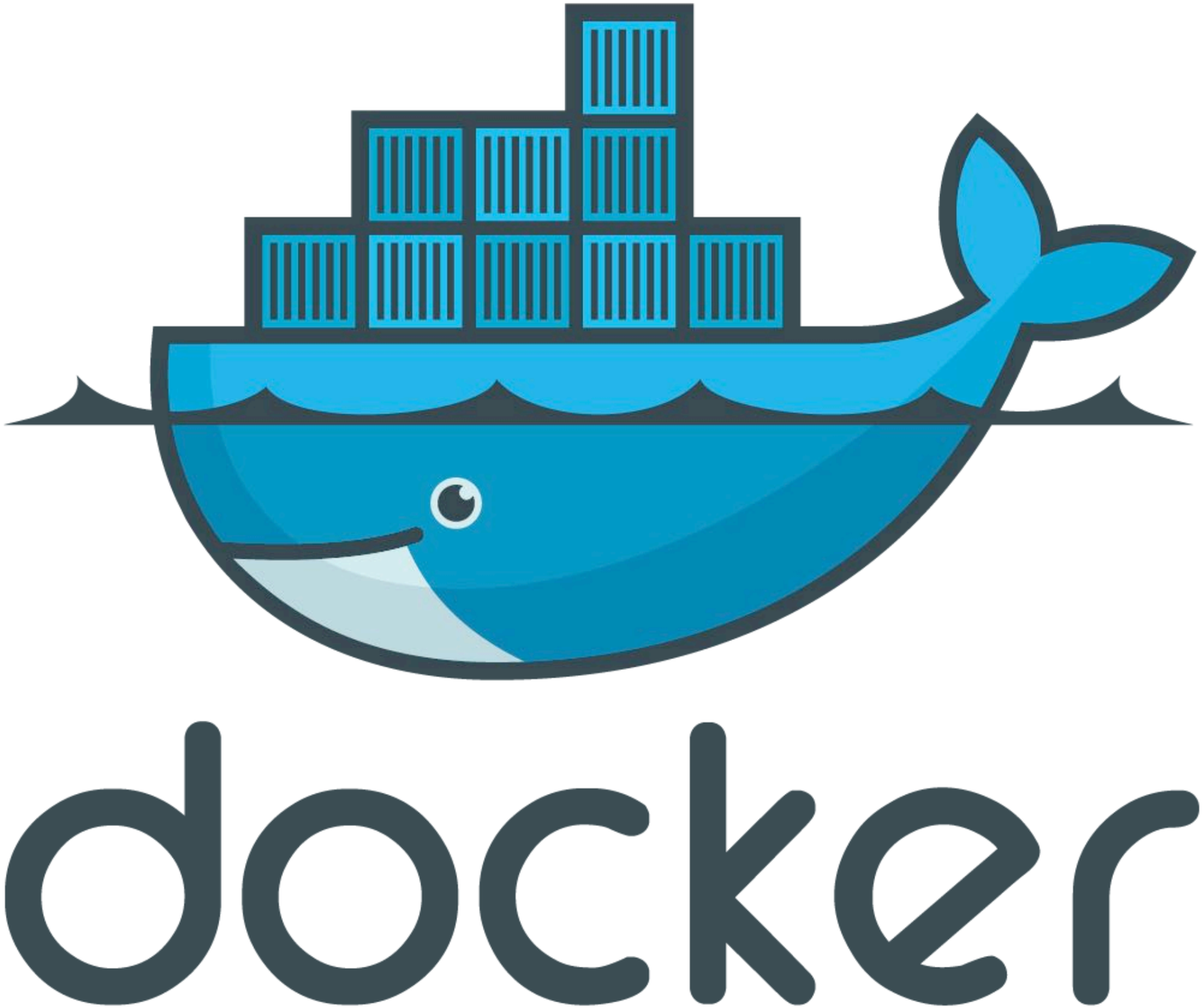
Lust

is an intense and uncontrolled desire.

Always use the hottest

High-latency low-throughput append-only database with very expensive transaction commit protocols just doesn't have the same ring to it as "Blockchain" does it?

— **https://twitter.com/jstogdill/status/1004448569615626240**



elastic

0operator
@sadoperator

Follow

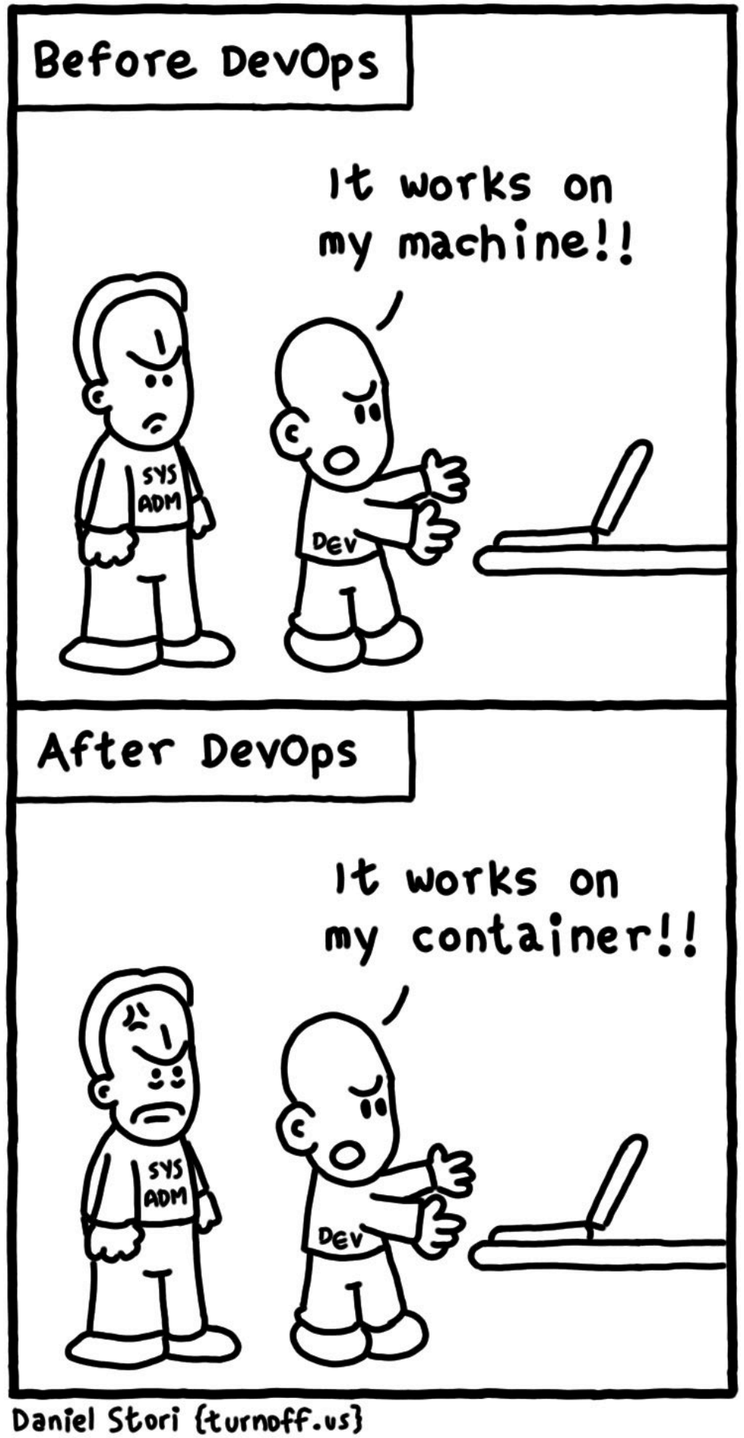
the team that releases no more than once a quarter has asked about deploying with docker

8:14 PM - 10 Jul 2017

Docker: each docker container should just run one process
Me: but your containers are 700+MB each
Docker: you see why our mascot is a whale

— **https://twitter.com/classam/status/743333692462895104**

HD



https://turnoff.us/geek/before-devops-after-devops/

Now what?

Chris Martin
@chris__martin

Follow

It's elegant in its simplicity because it's all tires. If you understand tires, you can understand the whole system.

CONTAINERS, CONTAINERS
EVERYWHERE
elastic
memegenerator.ne

"A container is just a process"

containers will not fix your broken architecture

you are welcome

— **https://twitter.com/littleidea/status/659445920954642432**

AP Photo/New Zealand Defence Force via Maritime New Zealand, Nicole Munro

so.. using GlibC?
How's re-imaging all of your @Docker images going?

— **https://twitter.com/starbuxman/status/700591322177019904**

You gotta love the docker-compose command line:
docker-compose down -v Removes all volumes
docker-compose -v down Prints the version of docker-compose

— **https://twitter.com/fhopf/status/971910920522760192**

New dependencies of your artifacts

JVM and base image

elastic

Containerizing legacy applications

elastic

Microservices + containers

Cargo cult

I HIRED A MANAGE-
MENT CONSULTANT TO
TEACH US SOMETHING
HE CALLS BACKWARDS
CAUSATION.
Dilbert.com DilbertCartoonist@gmail.com
I STUDIED THE MOST
SUCCESSFUL COMPANIES.
IF YOU IMITATE THEM,
YOU'LL FEEL AS IF YOU
HAVE A STRATEGY.
4-11-12 ©2012 Scott Adams, Inc./Dist. by Universal Uclick
NUMBER ONE: SPONSOR A
GOLF TOURNAMENT SO
YOUR CEO CAN MEET
CELEBRITIES.
PROFITS,
HERE WE
COME.

cargo culting comes from received but not integrated knowledge.because one doesn't grasp how a thing works, one simply goes through the motion of how one was told to do it.

— **https://twitter.com/GeePawHill/status/931941663886454784**

If you are only picking Kubernetes because that's the way Google does it, then you should also consider writing your own filesystems.

— **https://twitter.com/kelseyhightower/status/741310392756887552**

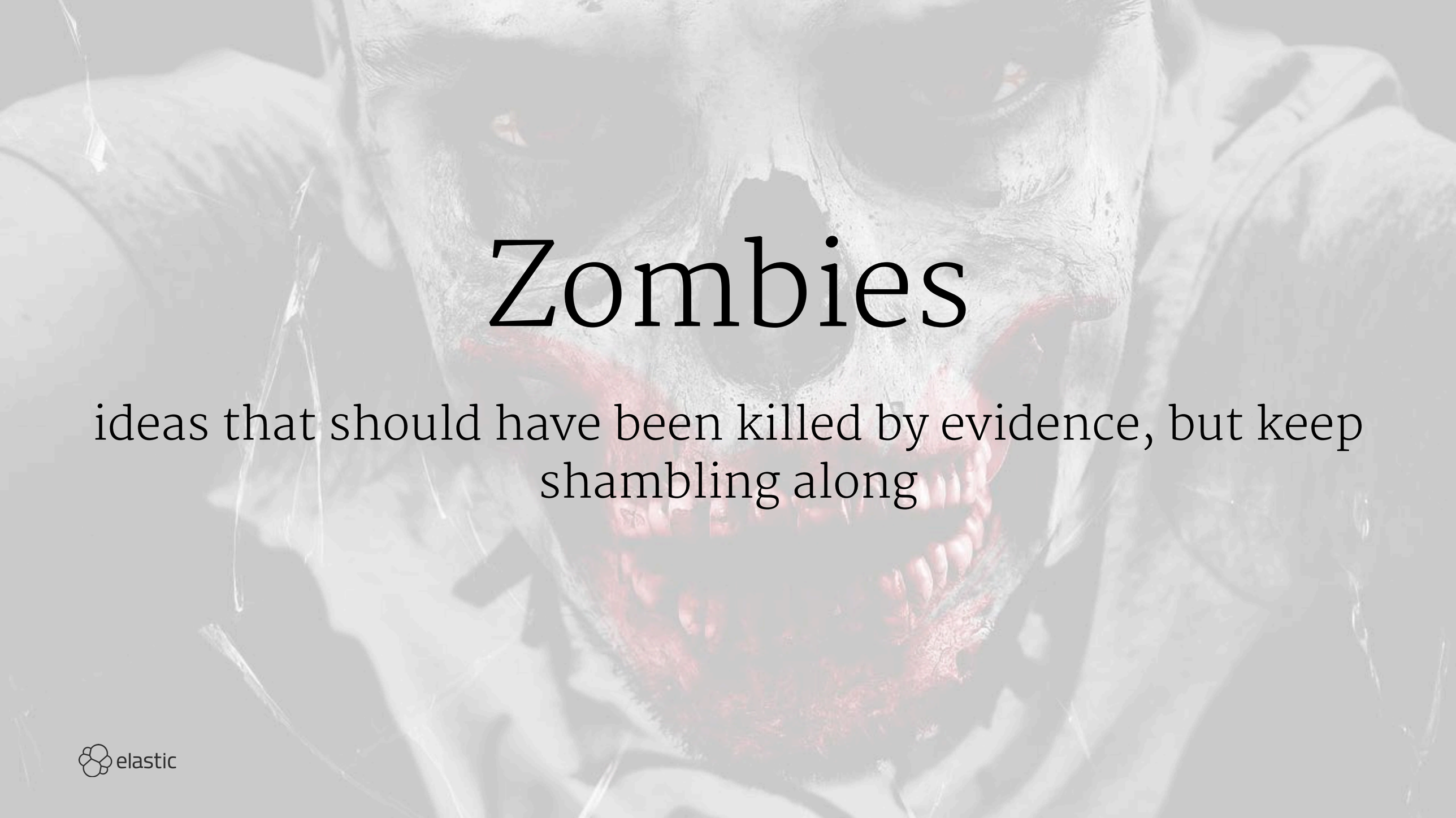
We've been so beaten into thinking we need to care about the speed-of-delivery with containers, we lost focus somewhere on prod reliability

— **https://twitter.com/danveloper/status/858372256174669824**

What's wrong here?

For a stateful production service

```
$ docker run -p 9200:9200
             -p 9300:9300
             -e "http.host=0.0.0.0"
             -e "transport.host=0.0.0.0"
             -e "discovery.zen.ping.unicast.hosts=..."
             docker.elastic.co/elasticsearch/elasticsearch
```



Zombies

ideas that should have been killed by evidence, but keep shambling along

elastic

Run Elasticsearch as `root`

Cockroaches

claims that disappear for a while when proved wrong,
but just keep on coming back

elastic

Make JAR not WAR

One more thing

Serverless

Serverless

Vijay Bandari
@vijaybandari

Follow

Replying to @kelseyhightower

Serverless car... you don't need to worry about engine and fuel... just sit inside and ride :)

elastic

Yesterday I have bird and bee discussion with junior devops for make realize cloud instance is born of real hardware.

— **https://twitter.com/DEVOPS_BORAT/status/289777231683788801**

I felt a great disturbance in the cloud, as if millions of microservices suddenly cried out in terror, and were suddenly serverless.

— **https://twitter.com/kennybastani/status/858021145890762755**

2016: Serverless Architecture
2017: Codeless Architecture
2018: Architectureless Architecture

— **https://twitter.com/benbjohnson/status/746049032699600897**

by 2025, 30% of net new technical debt will be serverless

— **https://twitter.com/mstine/status/972207185005633536**

PaaS reborn?

If your PaaS can efficiently start instances in 20ms that run for half a second, then call it serverless.

— **https://twitter.com/adrianco/status/736553530689998848**

PRIDE

Pride

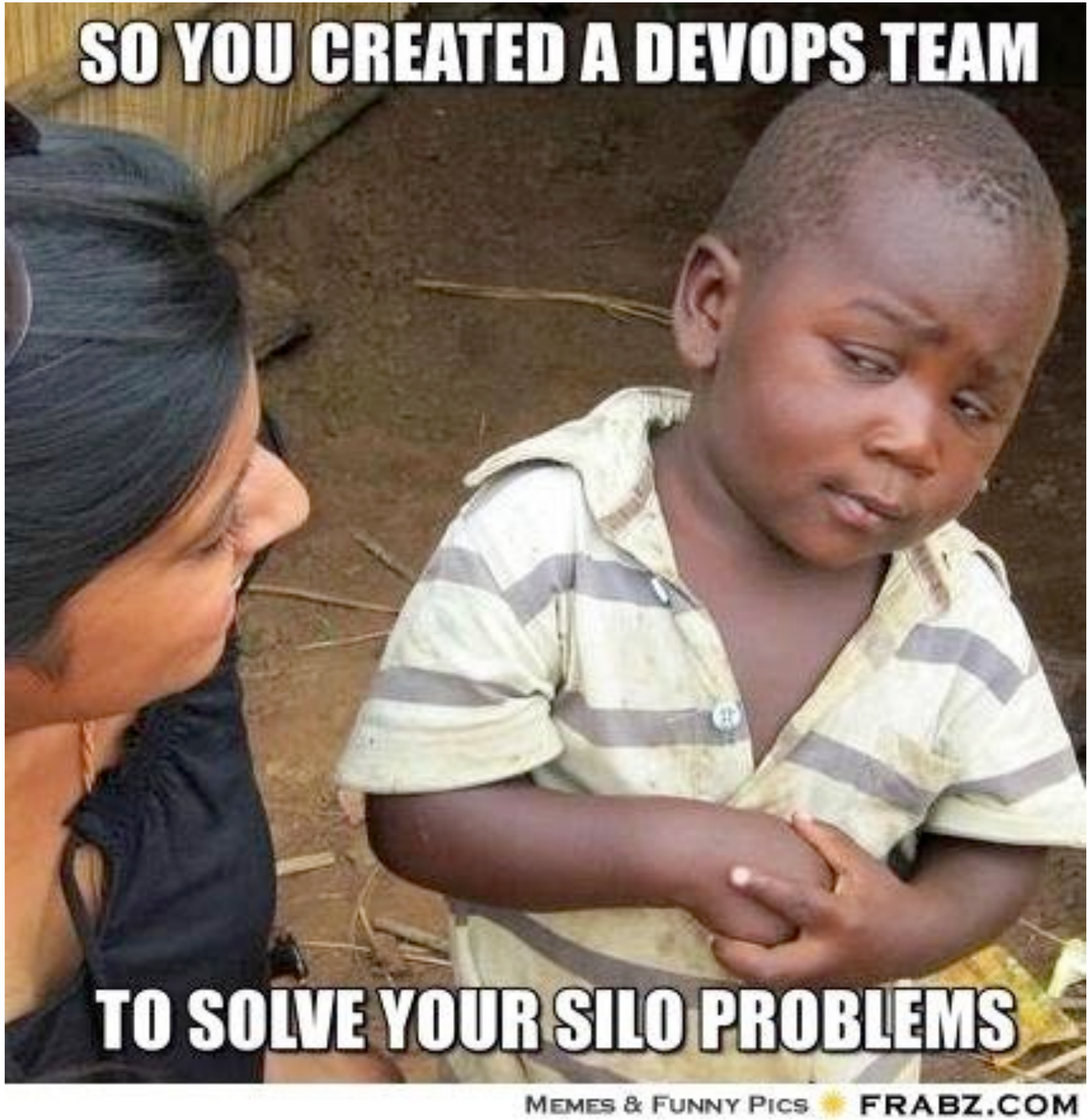
is identified as believing that one is essentially better than others.

elastic

WORKED FINE IN DEV
OPS PROBLEM NOW
quickmeme.com

DevOps is not a technology

WE DO DEVOPS ALREADY
JUST WITHOUT AGILE, STANDUPS, CI, CODE OR ANY OF THAT OTHER HIPSTER STUFF
memes.com


SO YOU CREATED A DEVOPS TEAM
TO SOLVE YOUR SILO PROBLEMS
MEMES & FUNNY PICS
FRABZ.COM

elastic

To make error is human. To propagate error to all server in automatic way is #devops.

— **https://twitter.com/DEVOPS_BORAT/status/415871688707973 12**

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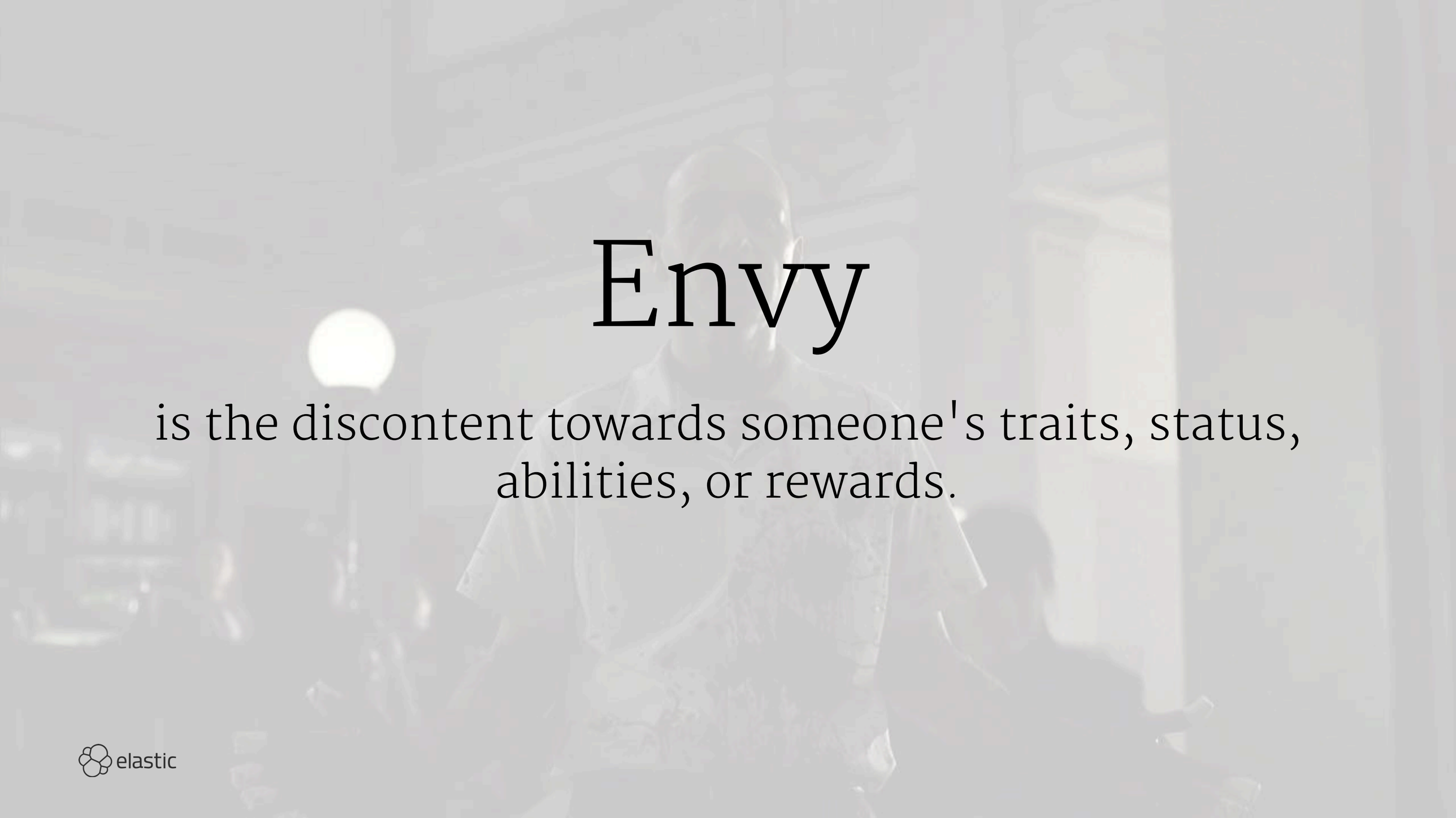

Envy

is the discontent towards someone's traits, status, abilities, or rewards.

Craft everything yourself!

"Nobody uses Maven. Maven uses you" @venkat_s at #Devoxx

— **https://twitter.com/mariofusco/status/927899858056425472**

Infrastructure
Pets vs Cattle

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All my servers are cattle … except for the redis instance. That one gets health care and Christmas gifts.

— **https://twitter.com/ajordens/status/801847570259509248**

Ansible
Puppet
Chef

Terraform

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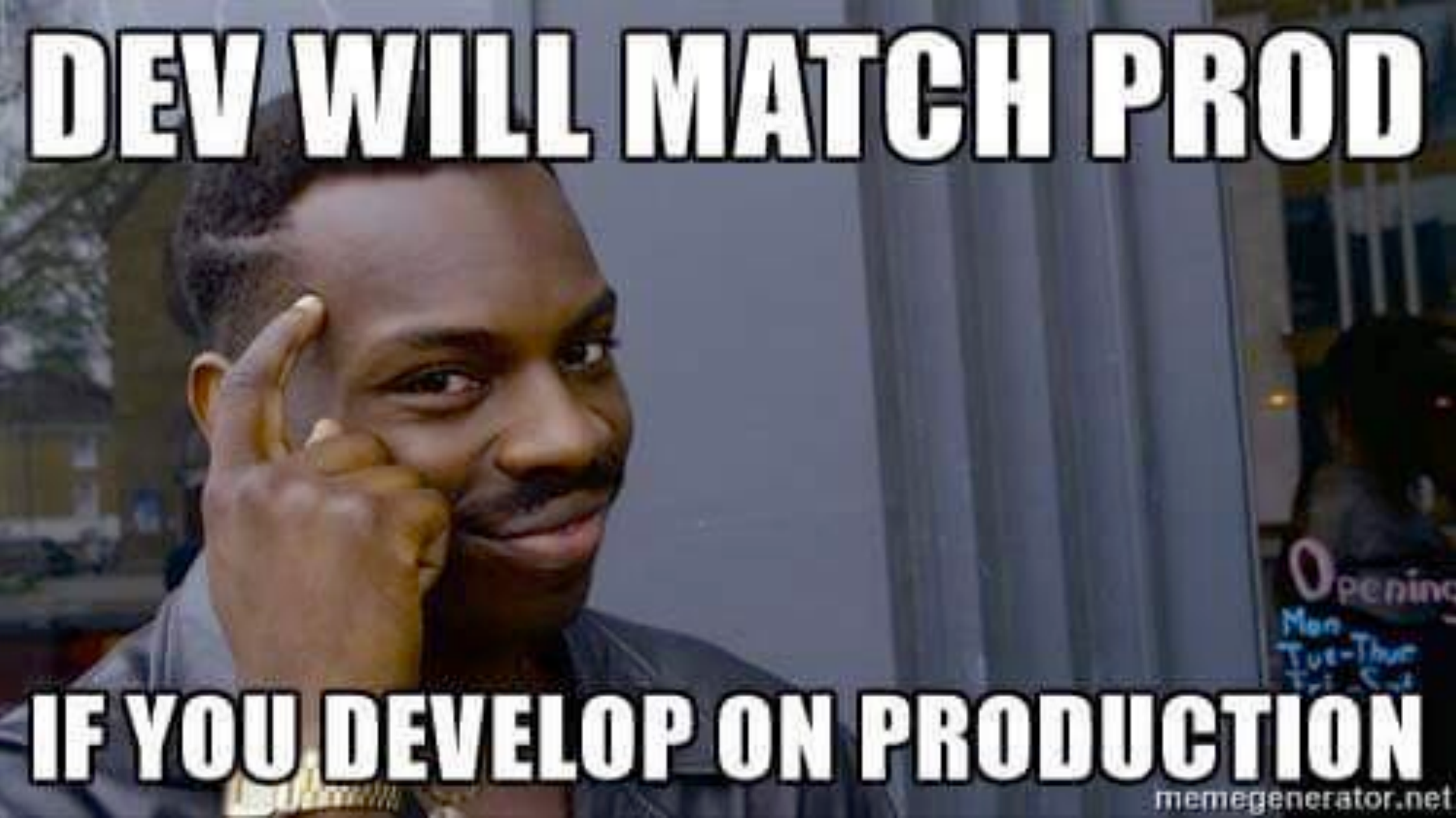
Avoid Drift


DEV WILL MATCH PROD
IF YOU DEVELOP ON PRODUCTION
memegenerator.net

I like the "ssh tags the instance for garbage collection" model as a step; it lets you migrate a team to new habits.

— **https://twitter.com/ferlatte/status/905984786082050048**

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Wrath

also known as "rage", may be described as inordinate and uncontrolled feelings of hatred and anger.

Log & Monitor

I DON'T ALWAYS MONITOR MY NETWORK
BUT I SHOULD
memegenerator.net

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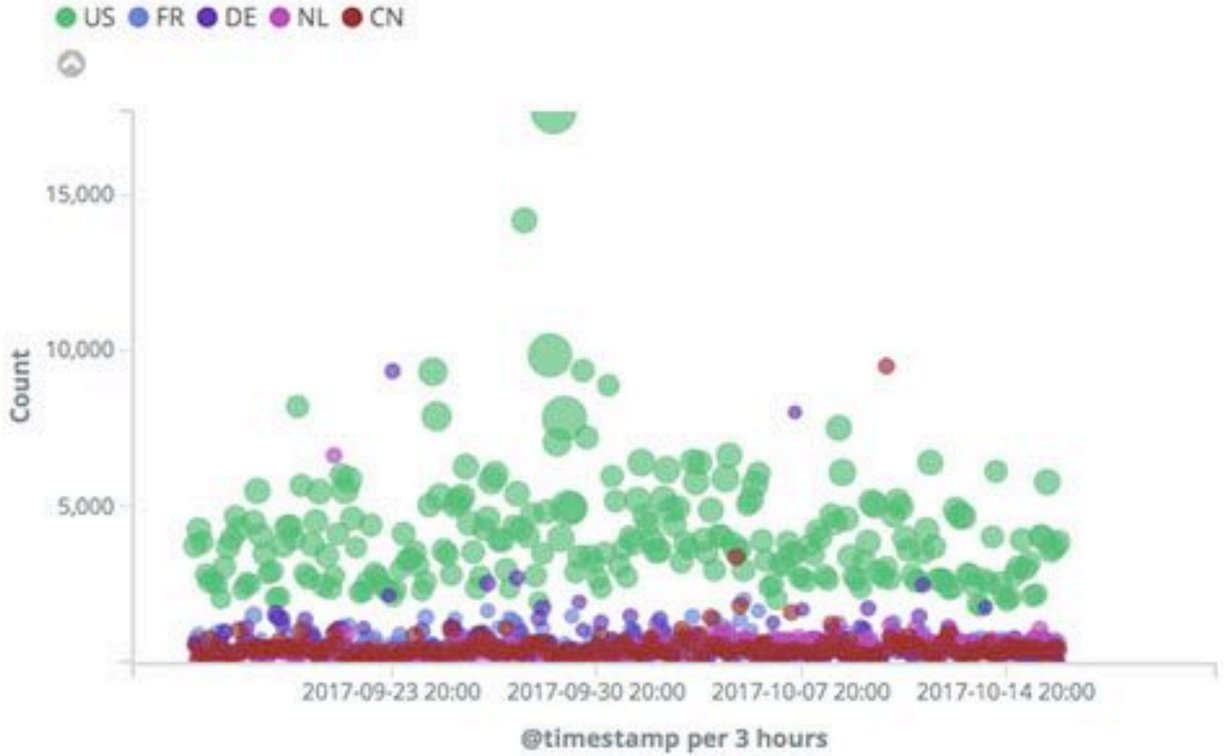
Apache - Total Visitors

2,317,838

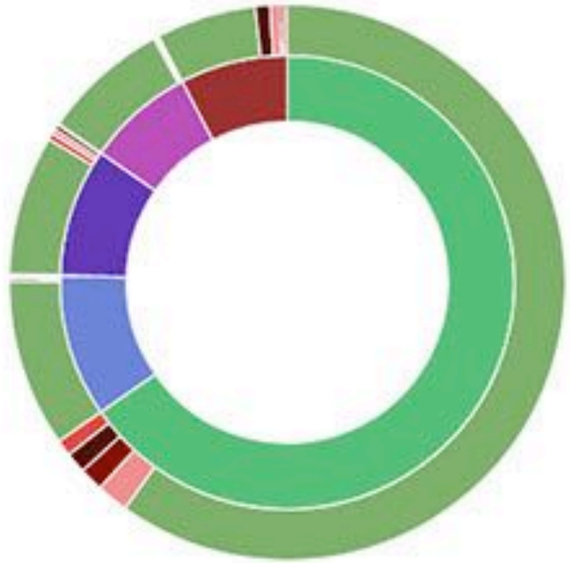
Apache - Unique Visitors

29,740

Apache - Bytes and Count



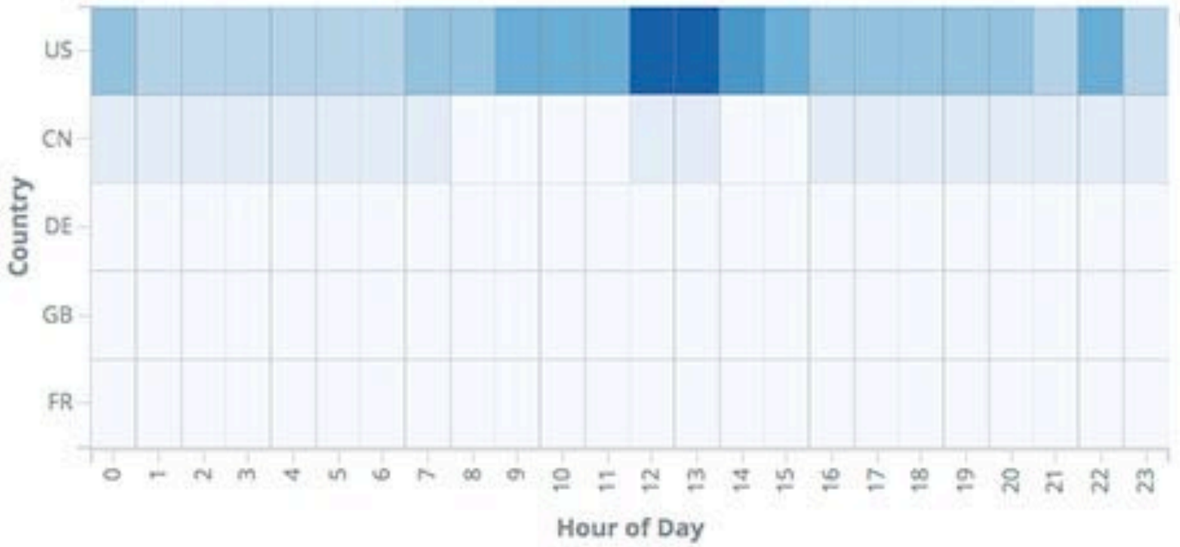
Apache - Country and Status



Apache - Unique Visitor...

City	Count of Unique Clients
Beijing	569
Ashburn	397
Redmond	383
Chicago	379
London	248
Los Angeles	232

Apache - Country traffic by hour



Apache - Top OS small

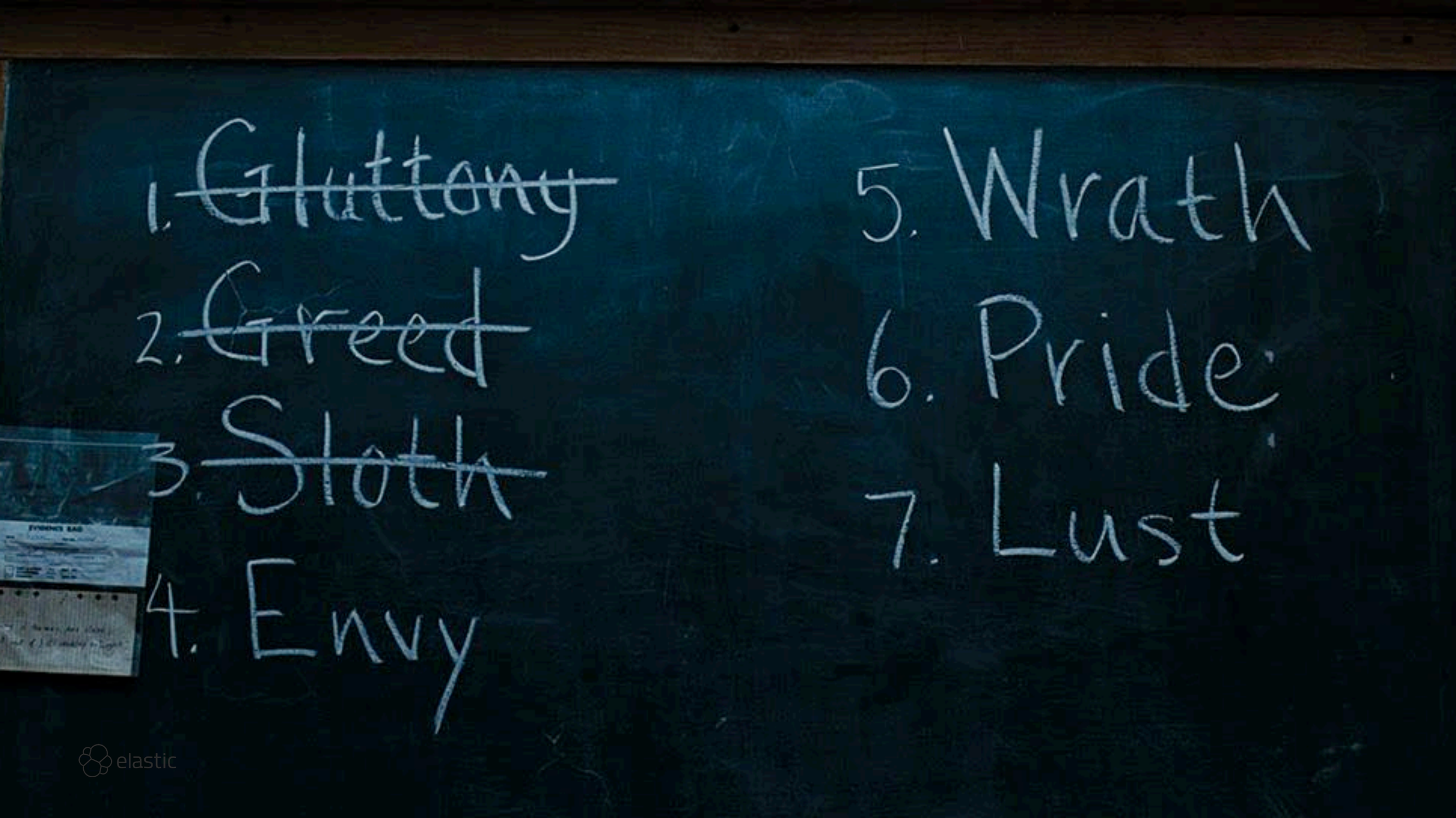
Conclusion

A good developer is like a werewolf: Afraid of silver bullets.

— **https://twitter.com/codepitbull/status/784691906005635072**

OH: “their infra is 50 shades of broken and they’re now setting up their own frankenetes cluster hoping it’ll fix everything” 😮😕

— **https://twitter.com/copyconstruct/status/935317466573504512**



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https://youtu.be/zoGyuiyCUAQ

Questions?

Confessions?

@xeraa