Functions and Platforms and Containers, Oh My!

Nathaniel Schutta
@ntschutta
ntschutta.io

Ah the Cloud!

So. Many. Options.

Microservices. Modular monoliths.

Container all the things?

What about serverless?

I hear that is *the* in thing now.

And that's before we even talk about public vs. private…

Or cloud providers!

How do we make sense of it all?

What is *the* answer?

IaaS.

Infrastructure is a different game today isn’t it?

We’ve seen this massive shift.

Servers used to be home grown.

Bespoke. Artisanal.

Spent days hand crafting them.

It would take weeks…or months…to get a new server instance.

What was the longest “request to ready” experience of your career?

Required us to make decisions when we knew the least.

How much capacity will you need?

¯_(ツ)_/¯

Take worst case…double it…add some buffer. Then a bit more.

Just in case.

We have a six week (aka month) lead time on all requests.

Lots of tickets.

And meetings.

And email.

And followup.

Often gave our servers pithy names.

Treated them like pets…

Did whatever it took to keep them healthy and happy.

Servers were a heavily constrained resource.

They were really expensive!

Had to get our money's worth…

Thus was born app servers.

Put as many apps as possible on a server.

Maximize the return on investment.

But that has some unintended side effects.

Shared resources.

One application's bug could take down multiple apps.

Coordinating changes hurts.

“Your app can’t get this feature until all other apps are ready.”

Currency === 18 months of freezes, testing, frustration.

Organizations ignored currency issues…pain wasn't "worth it".

“Fear is the path to the dark side. Fear leads to anger. Anger leads to hate. Hate leads to suffering.”

— Yoda

#YodaOps

Move code from one server to another…

Worked in dev…but not test.

Why?!?

The environments are the same…right?

“Patches were applied in a different order…”

Can I change careers?

Things started to change.

Servers became commodities.

Linux and Intel chips replaced custom OS on specialized silicon.

Prices dropped.

Servers were no longer the constraining factor.

People costs eclipsed hardware costs.

Heroku, AWS, Google App Egine, Cloud Foundry, Azure.

Shared servers became a liability.

Treat them like cattle…when they get sick, get a new one.

15

Introduce greater automation to operations.

Chef, Puppet, bosh.

Infrastructure as code.

People can’t do the same thing twice.

See golf.

We need consistency.

A script will do the exact same thing.

Every. Single. Time.

Lead times dropped.

Often as a reaction to public cloud providers.

And shadow ops.

Aka team goes rogue.

Spins up an instance on AWS or GCP.

Takes seconds.

IaaS - provision server resources quickly (in many cases on premises).

Sometimes on demand self service.

In other instances, just the same process as before but faster.

How?

Virtualization.

Abstraction over the physical compute resources.

Hypervisor manages the VMs.

Provides course grained components.

Useful if you need the flexibility.

But more for you to manage.

“With great power comes great responsibility.”

— Uncle Ben

There *are* instances where we need that level of flexibility.

But it shouldn’t be your first thought.

Fundamentally, the underlying layer of “the cloud”.

Containers.

Docker.

https://www.docker.com

Docker is, well a box.

Put whatever you want in it.

Includes everything needed to run.

Your code, system libraries, executables, settings, etc.

Your code is isolated
from the environment.

How often does your staging app server actually match production?

Instead of copying the code from one environment to another…

Just define the entire environment.

Similar to virtual machines.

Containers virtualize at the OS level, not the hardware level.

You have to tell Docker what you need.

Create a Docker image which is often stored in a registry like Docker Hub.

hub.docker.com

Docker Store is the new place to discover public Docker content. Check it out →

Search

Dashboard Explore Organizations Create ntschutta

Explore Official Repositories

alpine official	3.4K STARS	10M+ PULLS	DETAILS
nginx official	8.2K STARS	10M+ PULLS	DETAILS
httpd official	1.6K STARS	10M+ PULLS	DETAILS
redis official	4.9K STARS	10M+ PULLS	DETAILS
busybox official	1.2K STARS	10M+ PULLS	DETAILS
ubuntu official	7.4K STARS	10M+ PULLS	DETAILS
mongo official	4.3K STARS	10M+ PULLS	DETAILS
memcached official	968 STARS	10M+ PULLS	DETAILS

Docker Hub is community driven.

It isn’t vetted. Or curated.

Anyone can push anything,
anyone can pull anything.

There is also the Docker Store.

Which is exactly what it sounds like.

Allows people to publish and **sell** Docker images.

store.docker.com

docker store

java

Store (13)

Oracle Java 8 SE (Server JRE)

AppDynamics

java

node

Show all 13 hits in Store

Community (24918)

anapsix/alpine-java

frekele/java

appuio/s2i-maven-java

zabbix/zabbix-java-gateway

Show all 24918 hits in Community

Explore Publish Feedback ntschutta

cker Store

Containers, Plugins, and Docker Editions

Docker EE Doc

Filters

TYPE

Store

Community (Docker Hub)

DOCKER CERTIFIED

Docker Certified

CATEGORIES

Analytics

Application Frameworks

Application Infrastructure

Application Services

Base Images

Databases

DevOps Tools

Featured Images

Messaging Services

Most Popular

IBM Db2 Warehouse client container

By IBM

Multiple tools to migrate to, operate, and maintain Db2 Warehouse.

Container Linux IBM POWER x86-64 Analytics Databases

OpenMapTiles Map Server

By Klokan Technologies

OpenStreetMap Maps with API for Leaflet, OpenLayers, WMS, WMTS, GIS and Mapbox SDKs

Container Linux x86-64 Application Services

CoScale agent

By CoScale

Production monitoring of Dockerized applications, powered by anomaly detection.

Container Docker Certified Linux x86-64 DevOps Tools Analytics Monitoring

store.docker.com

docker store | java | Explore | Publish | Feedback | ntschutta

The Docker Store

Find Trusted and Enterprise Ready Containers, Plugins, and Docker Editions

Docker EE | Docker CE | Containers | Plugins

Filters

TYPE

- Store
- Community (Docker Hub)

DOCKER CERTIFIED

- Docker Certified

CATEGORIES

- Analytics
- Application Frameworks
- Application Infrastructure
- Application Services
- Base Images
- Databases
- DevOps Tools
- Featured Images
- Messaging Services

1 - 10 of 13 results for **java**. Clear search

Most Popular

Oracle Java 8 SE (Server JRE)

By Oracle

Oracle Java 8 SE (Server JRE)

Container | Docker Certified | Linux | x86-64 | Programming Languages

AppDynamics

By AppDynamics (Cisco)

AppDynamics APM provides real-time, end-to-end management for the most complex and distributed applications.

Container | Linux | x86-64 | Monitoring | Application Infrastructure | DevOps Tools | Analytics | Application Frameworks | Application Services | Base Images

java

10M+

By Docker

Java is a concurrent, class-based, and object-oriented programming language.

Container | Linux | x86-64 | Base Images | Programming Languages

Oracle Java 8 SE (Server JRE)

By Oracle

Oracle Java 8 SE (Server JRE)

Container | Docker Certified | Linux | x86-64 | Programming Languages

docker CERTIFIED

Developer Tier

Terms of Service

Proceed to Checkout

DESCRIPTION | REVIEWS | RESOURCES

Average Rating: ★★★☆☆ 9 Ratings

Java Platform, Standard Edition (Java SE) lets you develop and deploy Java applications on desktops and servers, as well as in today's demanding embedded environments. Java offers the rich user interface, performance, versatility, portability, and security that today's applications require.

This Docker images provides the Server JRE, a runtime environment specifically targeted for deploying Java in server environments. The Server JRE includes tools for JVM monitoring and tools commonly required for server applications, but does not include browser integration (the Java plug-in).

Copyright © 2018 Docker Inc. All rights reserved.

As you might have guessed, Docker Store content is vetted and curated.

Commercial entities.

Approved by Docker.

Images are supported by said entities.

And some cost money. Imagine that.

Some images are Docker Certified.

And note, some images come from Docker directly.

store.docker.com

- [ ] Base Images
- [ ] Databases
- [ ] DevOps Tools
- [ ] Featured Images
- [ ] Messaging Services
- [ ] Monitoring
- [ ] Operating Systems
- [ ] Programming Languages
- [ ] Security
- [ ] Storage

OPERATING SYSTEMS

- [ ] Linux
- [ ] Windows

ARCHITECTURES

- [ ] IBM POWER
- [ ] IBM Z
- [ ] x86-64

java

10M+

By Docker

Java is a concurrent, class-based, and object-oriented programming language.

Container | Linux | x86-64 | Base Images | Programming Languages

tomcat

10M+

By Docker

Apache Tomcat is an open source implementation of the Java Servlet and JavaServer Pages technologies

Container | Linux | x86-64 | IBM Z | IBM POWER | Application Infrastructure

tomee

5M+

By Docker

Apache TomEE is an all-Apache Java EE certified stack where Apache Tomcat is top dog.

Container | Linux | IBM POWER | x86-64 | IBM Z | Application Frameworks

node

10M+

By Docker

Node.js is a JavaScript-based platform for server-side and networking applications.

Container | Linux | x86-64 | IBM Z | IBM POWER | Application Infrastructure

groovy

10M+

By Docker

Apache Groovy is a multi-faceted language for the Java platform.

Container | Linux | x86-64 | Programming Languages

jetty

10M+

By Docker

Jetty provides a Web server and javax.servlet container.

Docker Hub and Docker Store are based on the Docker Public Registry.

What do you mean by “image”?

An image is a template or recipe for building a container.

Images often customize existing images.

Parent image acts as a starting point for further customization.

But again, *you* are responsible for what goes in the box!

“With great power comes great responsibility.”

— Uncle Ben

Don’t forget to stay current…

BUSINESS
SEP 14 2017, 3:21 PM ET

Equifax Hackers Exploited Months-Old Flaw

by BEN POPKEN

SHARE
Share
Tweet
Email
Print

Equifax announced late Wednesday that the source of the hole in its defenses that enabled hackers to plunder its databases was a massive server bug first revealed in March.

For the rest of the IT world, fixing that flaw was a "hair on fire moment," a security expert said, as companies raced to install patches and secure their servers. But at Equifax, criminals were able to pilfer data from mid-May to July, when the credit bureau says it finally stopped the intrusion.

Equifax, Software Company Blame Each Other for Security Breach 1:52

"We know that criminals exploited a U.S. website application vulnerability," Equifax said in an update on its website Wednesday night. "The vulnerability was Apache Struts CVE-2017-5638." Equifax said it was working with a leading cybersecurity firm, reported to be Mandiant, to investigate the breach. Mandiant declined an NBC News request for comment.

Related: The One Move to Make After Equifax Breach

The Apache Software Foundation, which oversees the Apache Struts project, said in a press release Thursday that a software update to patch the flaw was

advertisement

FROM THE WEB
Sponsored Links

Find Out In One Minute If You Pre-Qualify For A Citi Card
Citi

Why These 10 SUVs are the Cream of the Crop
Kelley Blue Book

by Taboola

MORE FROM NBC NEWS

Meltdown and Spectre

Vulnerabilities in modern computers leak passwords and sensitive data.

Meltdown and Spectre exploit critical vulnerabilities in modern processors. These hardware vulnerabilities allow programs to steal data which is currently processed on the computer. While programs are typically not permitted to read data from other programs, a malicious program can exploit Meltdown and Spectre to get hold of secrets stored in the memory of other running programs. This might include your passwords stored in a password manager or browser, your personal photos, emails, instant messages and even business-critical documents.

Meltdown and Spectre work on personal computers, mobile devices, and in the cloud. Depending on the cloud provider's infrastructure, it might be possible to steal data from other customers.

Meltdown

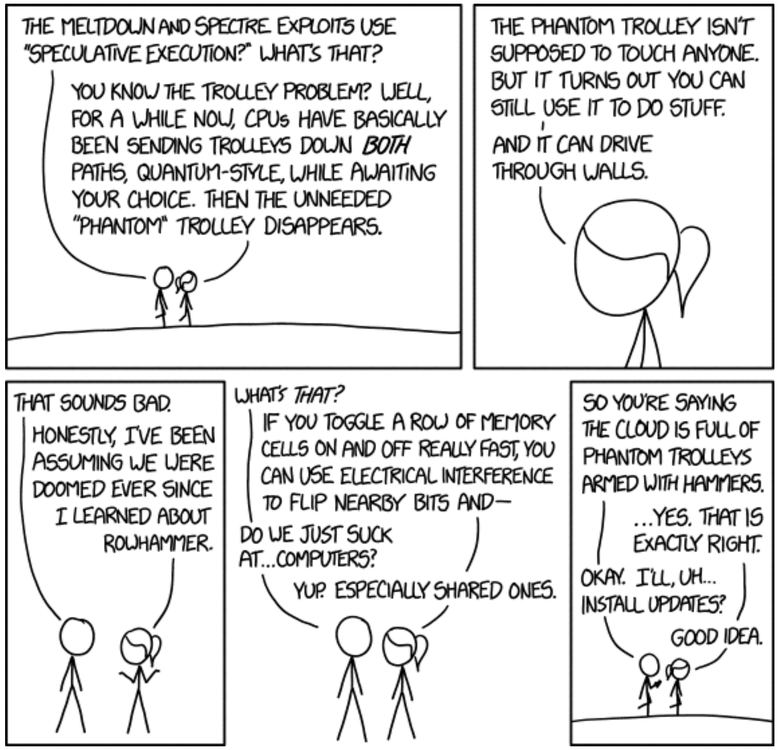
Meltdown breaks the most fundamental isolation between user applications and the operating system. This attack allows a program to access the memory, and thus also the secrets, of other programs and the operating system.

If your computer has a vulnerable processor and runs an unpatched operating system, it is not safe to work with sensitive information without the chance of leaking the

Spectre

Spectre breaks the isolation between different applications. It allows an attacker to trick error-free programs, which follow best practices, into leaking their secrets. In fact, the safety checks of said best practices actually increase the attack surface and may make applications more susceptible to Spectre

Spectre is harder to exploit than Meltdown, but it is also harder to mitigate. However, it is possible to prevent



Randall Munroe

https://xkcd.com/1938/

Of course today, you can’t talk about containers without mentioning…

Kubernetes.

https://kubernetes.io

K8s - deploy, scale & manage containers.

Built from lessons learned at Google.

They have experience.

Has many of the features
you would expect.

Self-healing. Scaling. Service discovery. Load balancing.

Automated rollouts and rollbacks.

kubectl

kube control, kube CTL,
kube cuddle, kube cuttle….

K8s command line interface.

You describe your desired state,
Kubernetes makes it so.

(insert your favorite Captain Picard reference here).

Number of abstractions: pod, service, volume, namespace…

Pod houses one (or more) containers.

Also storage, unique IPs.

Pod is fundamental unit of deployment.

An instance of an application.

Typically Docker containers but K8s supports others.

One container per pod is common, but some containers are tightly coupled.

Pods can contain multiple containers that then share resources.

“Helper” containers are often referred to as sidecars.

All the public cloud vendors have a k8s option.

Google Kubernetes Engine,
Amazon EKS, Amazon Fargate…

Kubernetes on Azure, PKS.

No shortage of options.

Do *not* underestimate the challenge of running k8s.

It is not simple!

http://searchitoperations.techtarget.com/news/450431623/Kubernetes-release-adds-maturity-in-19-but-devils-in-the-details

But it gives us another set of primitives to work with.

Application Platforms.

Layer of abstraction on top of IaaS.

Developers focus on applications and data. Not middleware and runtime.

Concepts are similar across options.

In the case of Cloud Foundry…

BOSH setups up a pool of VMs.

Cloud Controller deploys and runs the apps on said VMs.

Router directs traffic to the proper VMs.

Developers write the application.

Runtime is provided by the platform.

Before PaaS, we moved **code** from one server to another…

Worked in dev…but not test.

(╯°□°)╯ ︵ ┻━┻

Don’t move the code,
move the runtime.

Coarser grained thing.

Worked in dev? That is the **exact** same thing we will run in test.

Probably hasn’t even changed VMs, we just update the test route.

Eliminates an entire class of issues.

We have consistency!

Remember the 12 Factors?

X. Dev/Prod parity.

Environments should be consistent!

Shorten code to prod cycle.

Where does the runtime come from?

Buildpacks.

Push an app, CF figures out what kind of app it is. Java? Go? .NET? etc.

Retrieve the buildpack, “deploy” your app to said buildpack.

That droplet gets uploaded and pushed to an available cell.

Buildpack has everything you need to run that kind of app.

Moves the value line.

Less “undifferentiated heavy lifting”.

https://mobile.twitter.com/onsijoe/status/598235841635360768?lang=en

What does that look like?

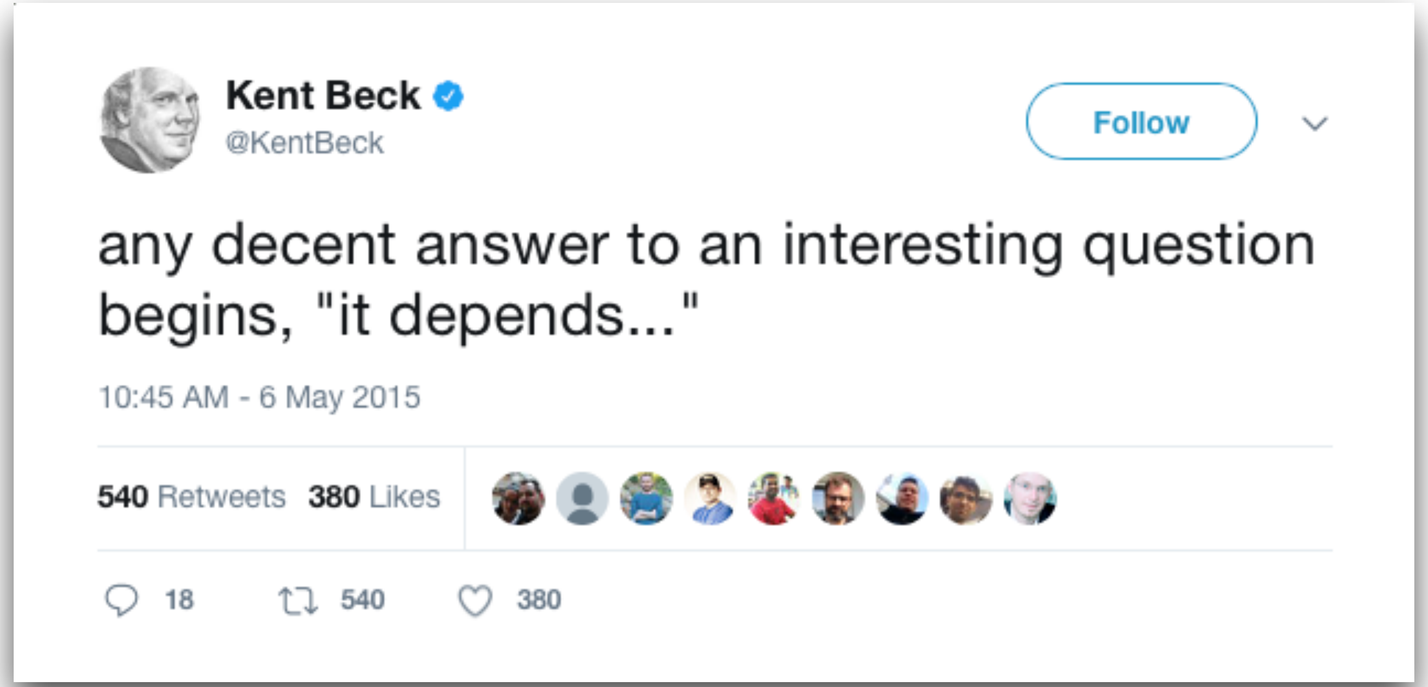
4. nschutta@Firethorn: ~/Sites/just-a-thought/public (zsh)

```
public (master) » c                                  ~/Sites/just-a-thought/public
```

But what if I need something unique?

You *can* customize a buildpack.

Should you though?



https://twitter.com/KentBeck/status/596007846887628801

In some cases, absolutely.

But your first reaction should be
"Why do I think I need to do this?"

You build it, you own it.

Do you want to maintain that for the next 3 years?

Don’t forget to stay current…

Meltdown and Spectre

Vulnerabilities in modern computers leak passwords and sensitive data.

Meltdown and Spectre exploit critical vulnerabilities in modern processors. These hardware vulnerabilities allow programs to steal data which is currently processed on the computer. While programs are typically not permitted to read data from other programs, a malicious program can exploit Meltdown and Spectre to get hold of secrets stored in the memory of other running programs. This might include your passwords stored in a password manager or browser, your personal photos, emails, instant messages and even business-critical documents.

Meltdown and Spectre work on personal computers, mobile devices, and in the cloud. Depending on the cloud provider's infrastructure, it might be possible to steal data from other customers.

Meltdown

Meltdown breaks the most fundamental isolation between user applications and the operating system. This attack allows a program to access the memory, and thus also the secrets, of other programs and the operating system.

If your computer has a vulnerable processor and runs an unpatched operating system, it is not safe to work with sensitive information without the chance of leaking the

Spectre

Spectre breaks the isolation between different applications. It allows an attacker to trick error-free programs, which follow best practices, into leaking their secrets. In fact, the safety checks of said best practices actually increase the attack surface and may make applications more susceptible to Spectre

Spectre is harder to exploit than Meltdown, but it is also harder to mitigate. However, it is possible to prevent

Point of a platform - free you from the undifferentiated heavy lifting.

What do our customers value?

The runtime?

That’s a dial tone. They don’t care.

We don’t get cookies for updating to OS version X+1.

Our customers want features.

Platforms allow us to spend more of our time delivering value.

Less on plumbing.

Various options…

Cloud Foundry, Heroku.

Serverless.

Life moves pretty fast…

From IaaS to CaaS to PaaS…

Functions.

As a Service.

Now you're saying we don't even need servers?

But we just refactored to cloud native microservices…

(╯°□°)╯ ︵ ┻━┻

Don’t throw that code away just yet!

Fair to say FaaS is a subset of serverless.

Though many use the terms interchangeably.

First things first. There are still servers.

We are just (further)
abstracted away from them.

We don’t have to spend time provisioning, updating, scaling…

In other words it is
someone else's problem.

Definitely suffers from the shiny new thing curse.

And everything that entails.

There *are* very good reasons to utilize this approach!

Some relate specifically to a platform.

Perhaps you already have data with a provider.

Using Amazon S3 for example.

You might want to tap into particular services offered by a provider.

Perhaps you want to utilize Google Cloud Machine Learning Engine.

But it isn’t just a new a way to cloud.

There are serious efficiency gains to be had with this approach!

Development efficiencies.

Functions push us further up the abstraction curve.

Allows us to focus on implementation not infrastructure.

Do you know what OS your application is running on?

Do you care?

What *should* you care about?

Where is the “value line” for you?

We want to get out of the business of “undifferentiated heavy lifting”.

Focus on business problems,
not plumbing problems.

Resource efficiencies.

Function hasn’t been called recently?

Terminate the container.

Request comes in? Instance springs into existence.

8. watch -n 3 kubectl get functions,topics,pods,services,deploy (kubectl)

```
Every 3.0s: kubectl get functions,topics,pods,services,deploy    Firethorn.local: Mon Jan  8 15:23:28 2018

NAME                   AGE
functions/echo-java    32s

NAME                 AGE
topics/echo-java     32s

NAME                                                READY     STATUS    RESTARTS   AGE
po/demo-riff-function-controller-6975dbdc7d-kvfxm   1/1       Running   5          5h
po/demo-riff-http-gateway-64fc56bd96-vmvnn          1/1       Running   11         5h
po/demo-riff-kafka-c7f456685-p65bv                  1/1       Running   9          5h
po/demo-riff-topic-controller-58694bb5bf-n5fb5      1/1       Running   5          5h
po/demo-riff-zipkin-6c66b788bb-dhsjm                1/1       Running   0          1h
po/demo-riff-zookeeper-6fd5c5bd54-fqvvk             1/1       Running   2          5h

NAME                                  TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)          AGE
svc/demo-riff-function-controller     ClusterIP      10.109.143.74    <none>        80/TCP           5h
svc/demo-riff-http-gateway            NodePort       10.101.136.125   <none>        80:31718/TCP     5h
svc/demo-riff-kafka                   ClusterIP      10.96.180.243    <none>        9092/TCP         5h
svc/demo-riff-zipkin                  LoadBalancer   10.98.172.131    <pending>     9411:31239/TCP   1h
svc/demo-riff-zookeeper               ClusterIP      10.110.26.126    <none>        2181/TCP         5h
svc/kubernetes                        ClusterIP      10.96.0.1        <none>        443/TCP          38d

NAME                                   DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   AGE
deploy/demo-riff-function-controller   1         1         1            1           5h
```

Functions aren’t free however.

Well, ok, once you get
beyond the free tier at least…

Then some fractional cost there after.

First million (or two) requests are free*.

- Additional fees may apply.

For example: data transfer fees or other services you leverage.

Charged based on # of requests, run duration & resource allocation.

Can be challenging to determine just how much it will cost…

But for **certain workloads**,
it is very cost effective.

Operational efficiencies.

Serverless ops?

Again, less for us to worry about.

Rely on a platform.

What use cases fit well with functions?

Rapidly evolving
business requirements…

Stateless workloads.

Infrequent (or sporadic) requests.

Variable scaling needs.

Asynchronous workloads.

Easy to parallelize.

IoT, machine learning, log ingestion, batch processing.

“Conversational UIs” aka digital assistants like Alexa.

CI/CD automation, chat integration, stream processing…

Website back end services such as logging, post handlers, auth.

Event processing, monitoring, notifications, alerting.

Security scanning.

Very valuable tool.

It isn’t a good fit for every workload.

But you knew that.

Spring Cloud Function.

A Spring take on functions!

Abstract away the runtime target.

Same code can be an endpoint, a task, a stream processor…

Provide a unified programming model across serverless providers.

Multicloud for the win!

As well as running locally or on your PaaS of choice.

Bring the Spring Boot features you know and love to serverless!

Focus on writing the business logic.

Utilizes core abstractions from

`java.util.function`.

Function, Consumer, Supplier.

Can optionally use Reactor's **Flux** as parameters and return types.

Meaning you can use reactive approaches like non-blocking IO.

Supports compiling String based lambdas into function instances.

If this is just based on standard Java classes, why should I use it?

Inversion of control.

Allows you to decouple the code from the deployment profile.

Just add the right dependency.

Do you want to deploy your function as a REST endpoint?

spring-cloud-function-web

Need that function to be a stream processor instead?

spring-cloud-function-stream

Goal - remove the boilerplate.

Developers focus on the function. Let the framework handle the rest.

Implement (and test) the code apart from the target environment.

riff.

riff is for functions.

https://projectriff.io

FaaS for Kubernetes.

Executing functions in response to events.

Developers focus on two things:

The function itself.

And the topic that triggers the function.

Event stream might be low frequency, might be continuous.

Or unpredictable.

Built on the experience of Spring Cloud Streams and Data Flow.

Functions can be polyglot.

Java, JavaScript, shell, Go and Python.

Just a container running on K8s.

Scale up and down as needed.

riff function controller
monitors event broker for lag.

Once it sees a certain amount of lag, will scale up.

By default, single instance scales down to zero after 10 seconds idle time.

Yes, it is configurable.

ICE - CAP for serverless.

Immediate. Consistent. Efficient.

Pick two.

What are your concerns? Resource utilization? Immutable containers?

Set of comprises.

If we keep containers running,
we're paying for idle resources.

If we inject code into a container, we lose immutability.

If we launch containers on demand, we have slow startup experience.

Many platforms use dynamic loading.

But the goal with riff is to give
you control over the tradeoffs.

Functions are packaged as containers.

Functions and topics are just K8s resources.

In other words, managed via kubectl just like a pod.

riff is thin.

Relies on Kubernetes Custom Resource Definition extension.

riff function controller monitors event lag, scales as necessary.

Event broker is Kafka, pluggable event brokers are on the roadmap.

riff build - creates the Docker image.

riff apply - deploy the function on Kubernetes.

Or `riff create` to init/build/apply.

Your code is added to a base image specific to the invoker.

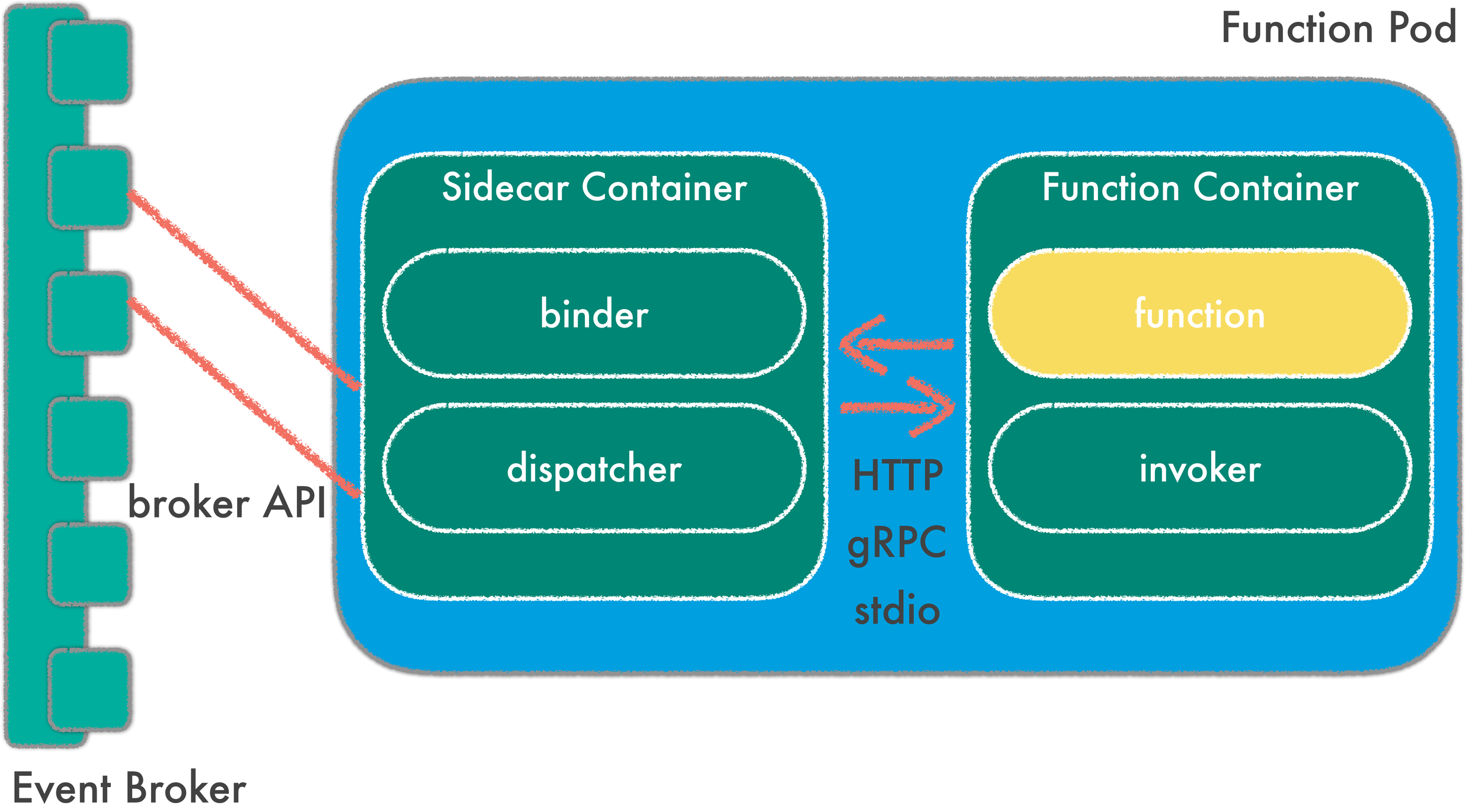
Just an instance of inversion of control. Don’t call us, we’ll call you.

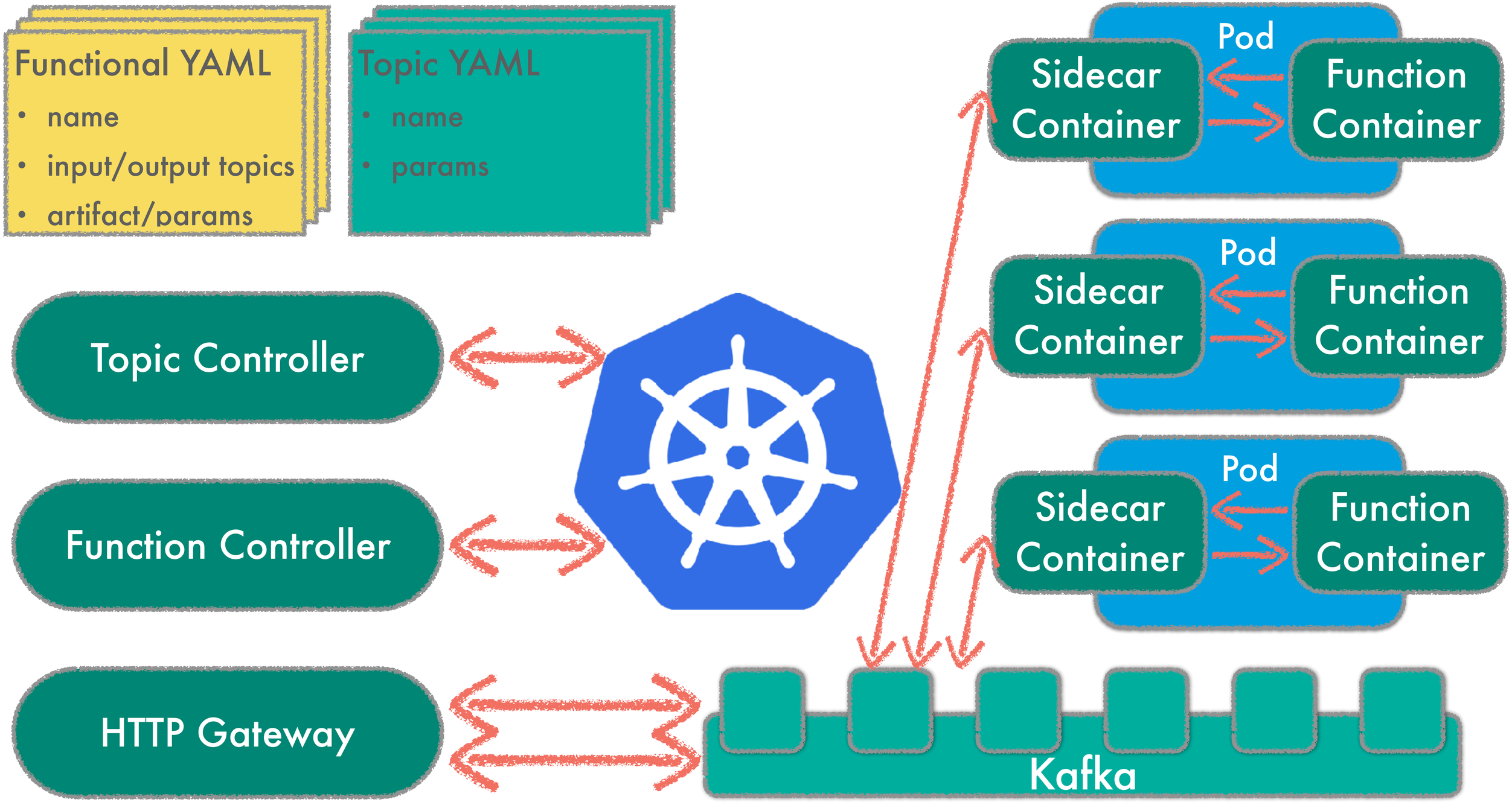
Sidecar contains the binding to the event broker. Aka proxy pattern.

Multiple implementation of the function containers…

But only one implementation of the sidecar.

Can communicate to the function invoker over HTTP, stdio, gRPC…


Function Pod
Sidecar Container
binder
dispatcher
Function Container
function
invoker
HTTP
gRPC
stdio
broker API
Event Broker


Functional YAML
• name
• input/output topics
• artifact/params
Topic YAML
• name
• params
Topic Controller
Function Controller
HTTP Gateway
Pod
Sidecar Container
Function Container
Pod
Sidecar Container
Function Container
Pod
Sidecar Container
Function Container
Kafka

Very new, evolving rapidly.

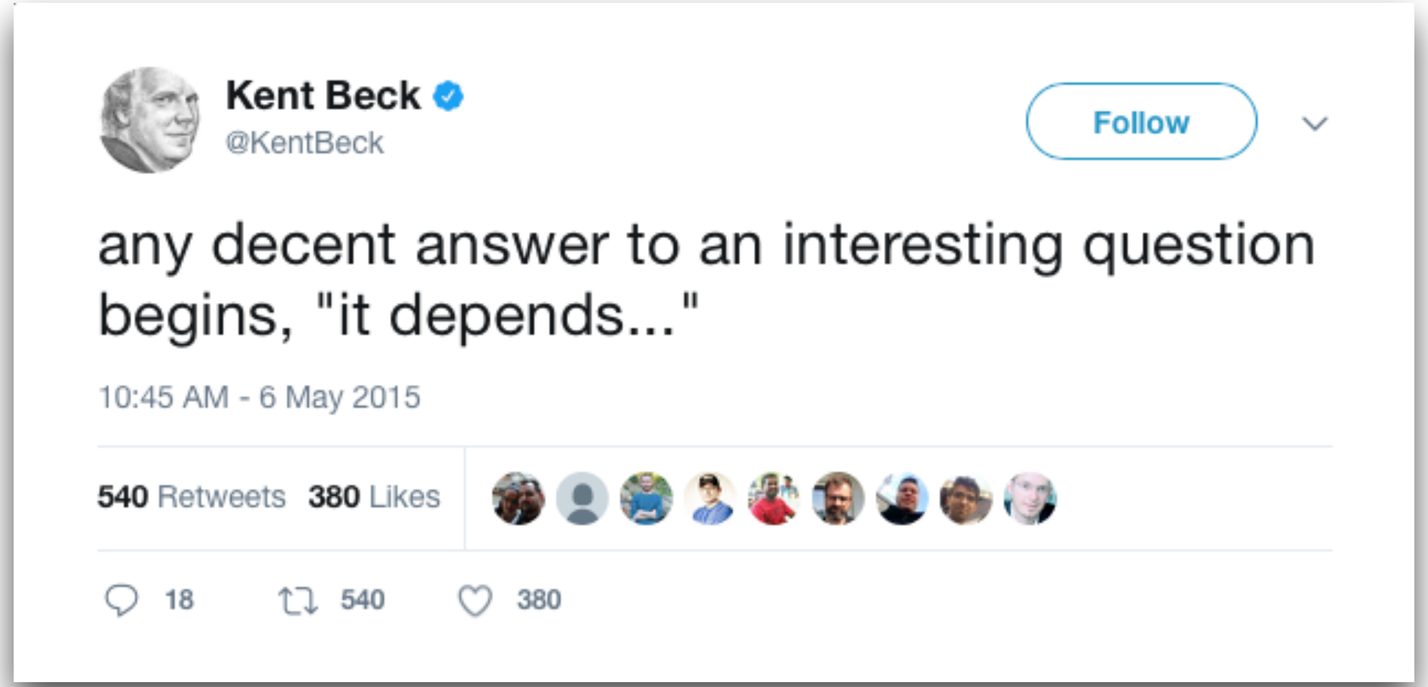
Agnostic layer for FaaS. Run it on premise or public cloud.

All the public cloud providers have their own FaaS implementation.

Lambda, Google Cloud Functions, Azure Functions.

Lots of options in this space…

Which approach should
you choose?



https://twitter.com/KentBeck/status/596007846887628801

There is no **one** right answer here.

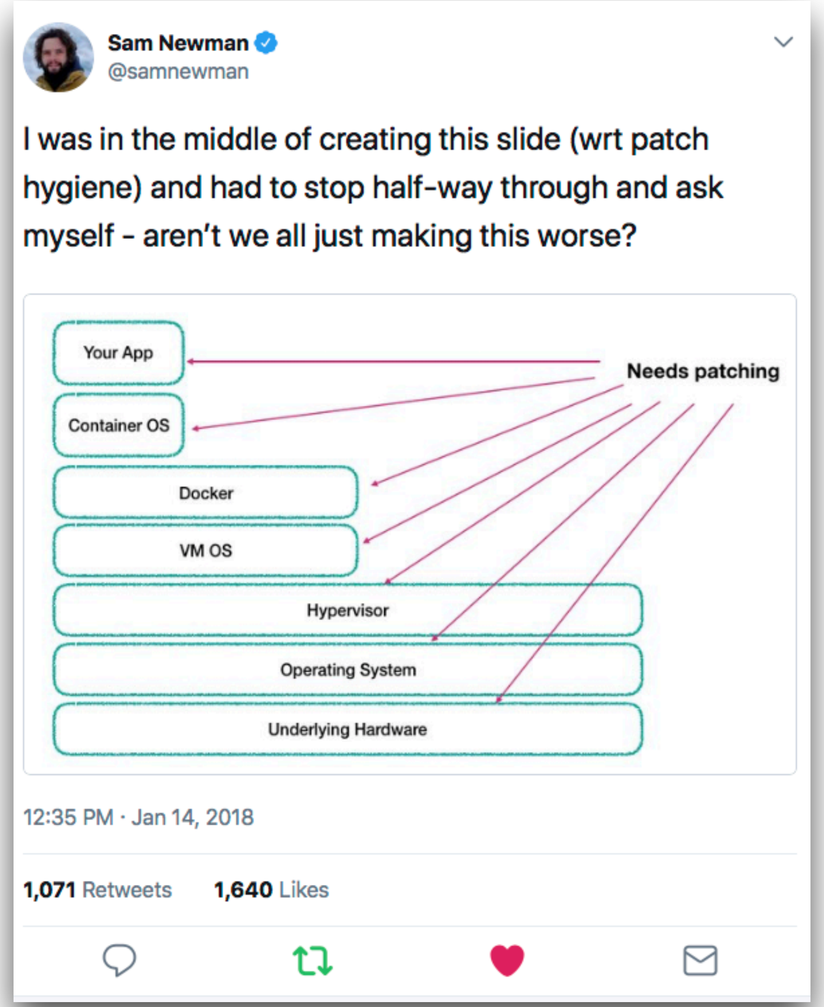
卦卦 ： ||

Not all workloads fit in each bucket.

We need to pick the right runtime for each workload.

There are tradeoffs!

But you knew that.

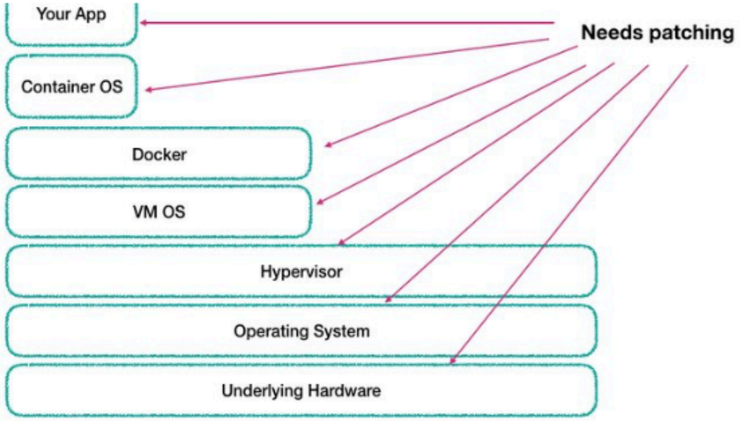


https://mobile.twitter.com/samnewman/status/952610105169793025

Josh Long (龙之春, जोश)
@starbuxman

This is exactly why an integrated platform like @cloudfoundry & a public cloud offering is valuable: everything in that slide (except your app) is either managed centrally by the platform or its managed by somebody else who have a vested interest in doing so well.

Sam Newman @samnewman
I was in the middle of creating this slide (wrt patch hygiene) and had to stop half-way through and ask myself - aren't we all just making this worse?
Show this thread



4:03 AM · Feb 2, 2018

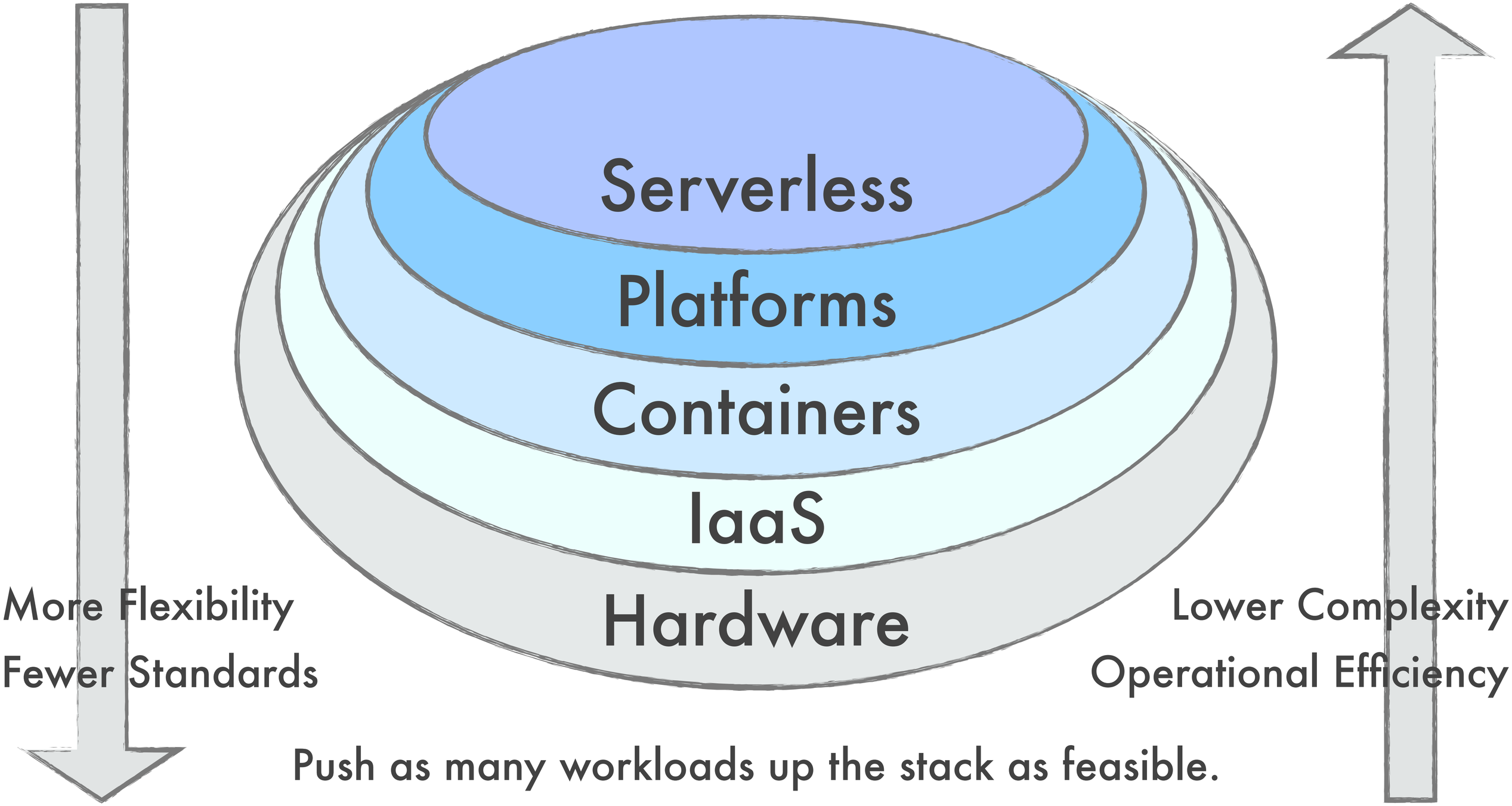
17 Retweets **35** Likes

https://mobile.twitter.com/starbuxman/status/959366771462496256

	Containers	Platform	Serverless
Developer Provided	Container	Application	Function
Tool Provided	Container Scheduling Primitives for Networking, Routing, Logs and Metrics	Container Container Images L7 Network Logs, Metrics, Monitoring Services Marketplace Team, Quotas & Usage	Container Function Execution Function Scaling Event Stream Bindings

IaaS

Different levels of abstraction.



Push as many workloads up the stack as feasible.

With great flexibility comes great responsibility.

Development complexity.

Do you want developers thinking about OS patches?

Or just pushing apps?

The prevailing mythology is you should "containerize" everything and give it to a container orchestrator to run, but why? They had one problem, "Run an app". Now they have two, "Run a container that runs an app" and "maintain a container".

— Adam Wright

https://news.ycombinator.com/item?id=16332184

Operational efficiency.

How many operators does it take to manage a bespoke environment?

Flexibility vs. standardization.

Guardrails aren’t shackles.

They are designed to protect you.

How do you want to allocate *your* resources?

Choose the option that fits the problem.

Push as many workloads as you can up the abstraction hierarchy.

The Cloud is full of FUD.

And developers chasing the new hotness.

Be strategic.

Hope is not a strategy!

But it is what rebellions are built on.

We need to be deliberate.

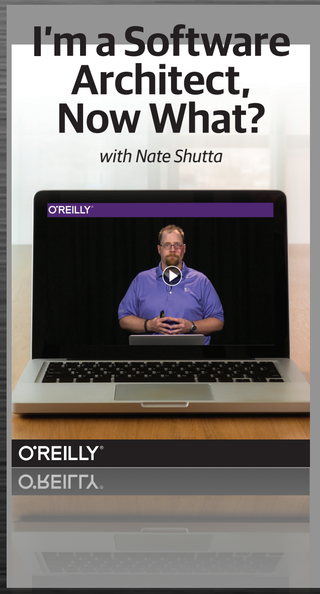
Understand the benefits - and the limitations - of these approaches.

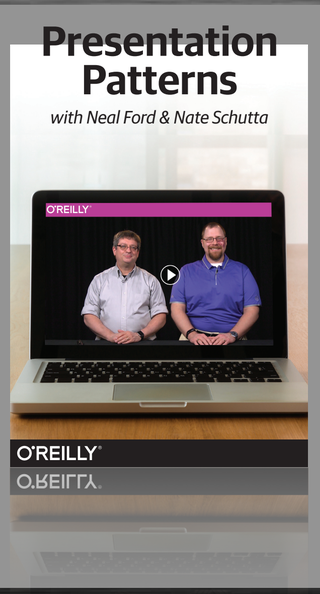
Do the right thing.

Good luck!

Questions?

Thanks!





Nathaniel T. Schutta
@ntschutta
ntschutta.io