



AWS re:Invent

I O T 2 0 4 - S

More than rubber on the road: Tires in an IoT world

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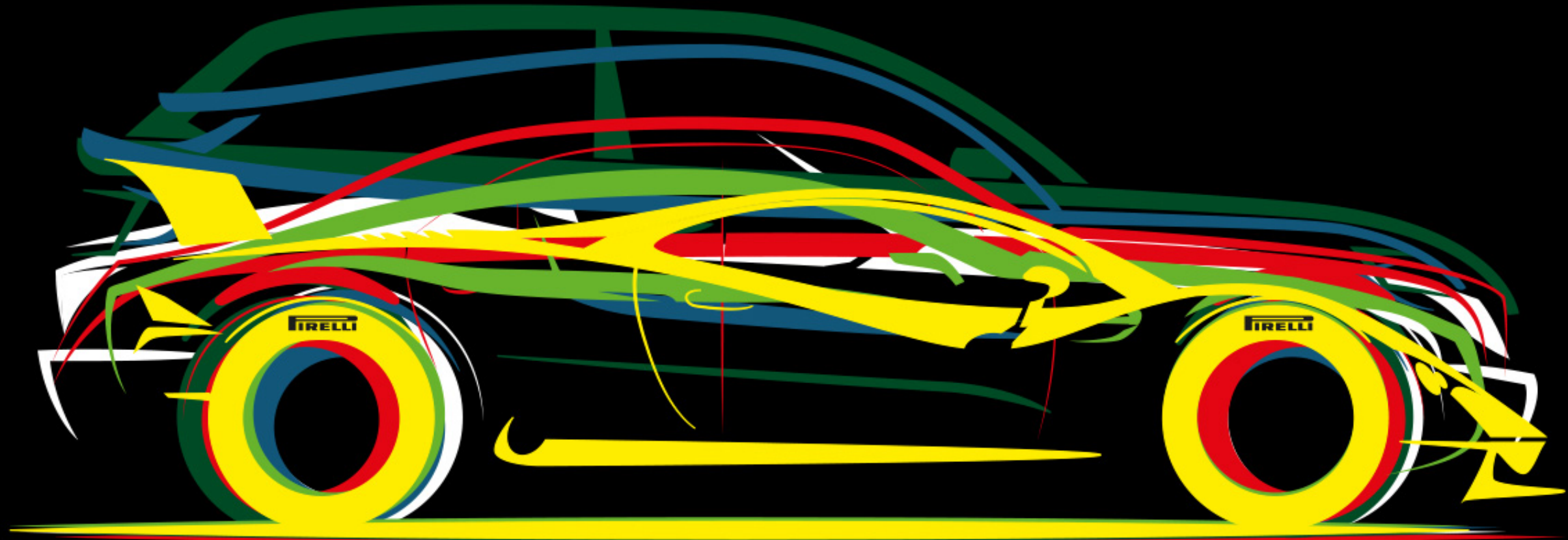
Developer Relations
Datadog

Ice-breaker!

Pirelli



Every company is a tech company



Datadog

The background of the slide is a dark gray, almost black, with a subtle, light gray grid pattern. A prominent, smooth, curved line sweeps across the middle of the image, separating the top section where the logo is located from the bottom section. The overall aesthetic is clean, modern, and tech-oriented.

Pirelli: A pure tire company...

Cars

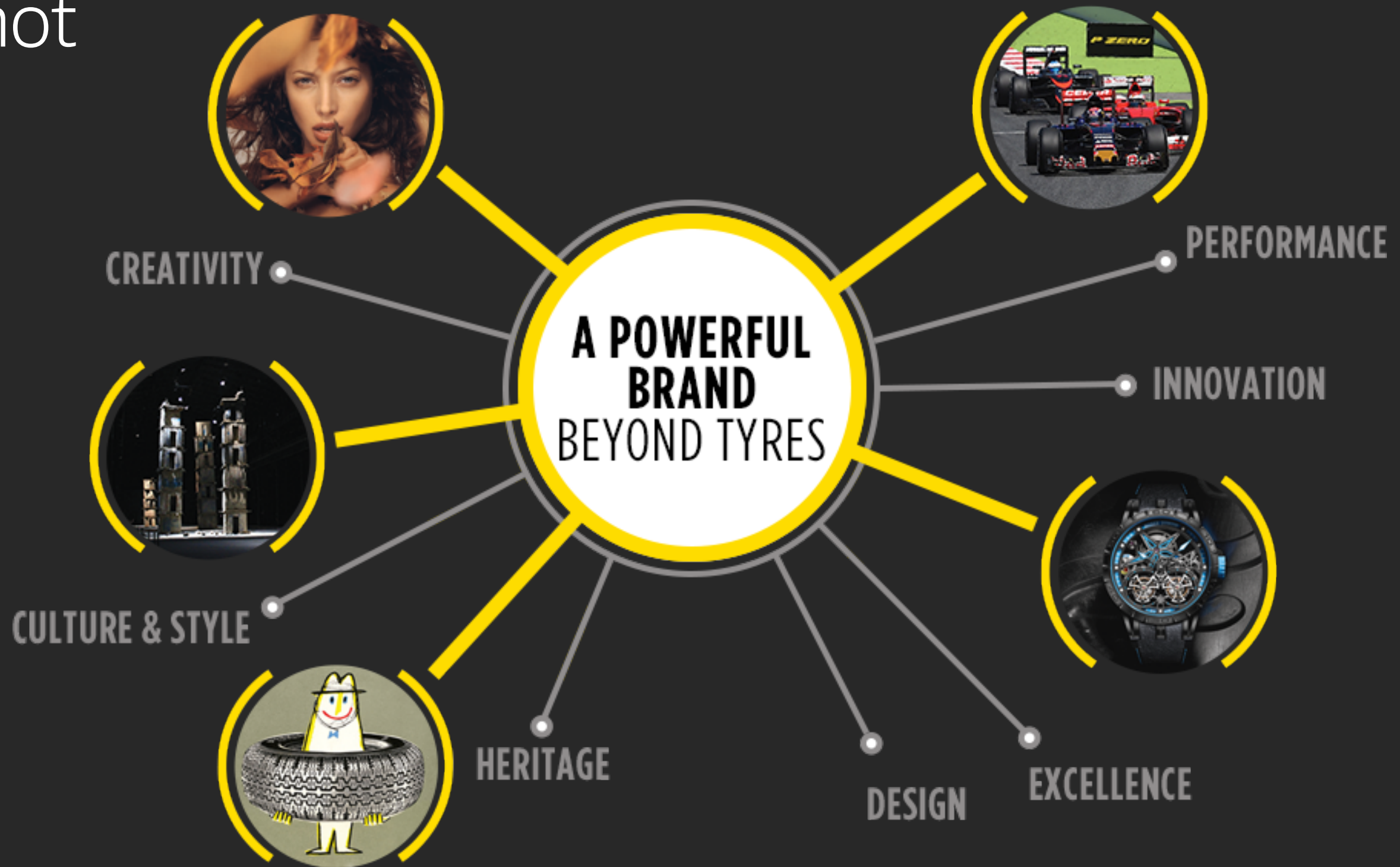
Moto

Motorsport

Bicycling



...or not



Pirelli's focus

High-end and prestige markets

Premium products

Prestige brand



From whence we came

Standard story: everything on-prem
at data centers and in factories



Moving to the cloud...

Nearly 150 years of legacy

More than just software



B2B and B2C

> TYRES > SEARCH BY BRAND > ALFA ROMEO > AC

Historically B2B-focused

Today, B2C is growing quickly

**WHAT ALFA ROMEO DO
YOU DRIVE?**

Input your details and discover the right tyres for your car

ALFA ROMEO

AC

2015

2016

2017

2018

2019



ALFA ROMEO 4C

The past: pretty good!

Built progressively and from organic needs

State of the art, at the time



Focus

Core system priorities

Protecting trade secrets

Securing sensitive data

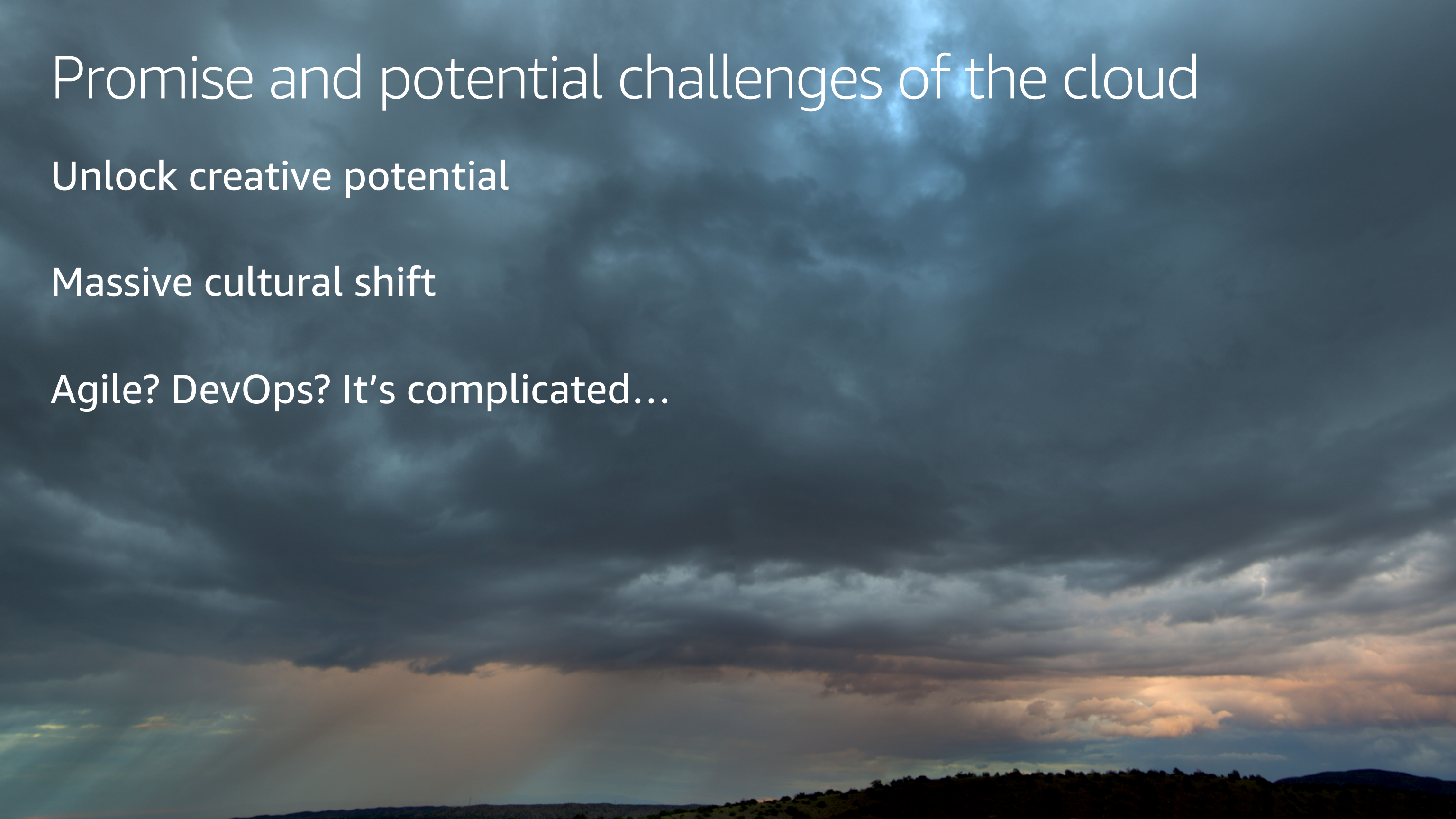


Promise and potential challenges of the cloud

Unlock creative potential

Massive cultural shift

Agile? DevOps? It's complicated...



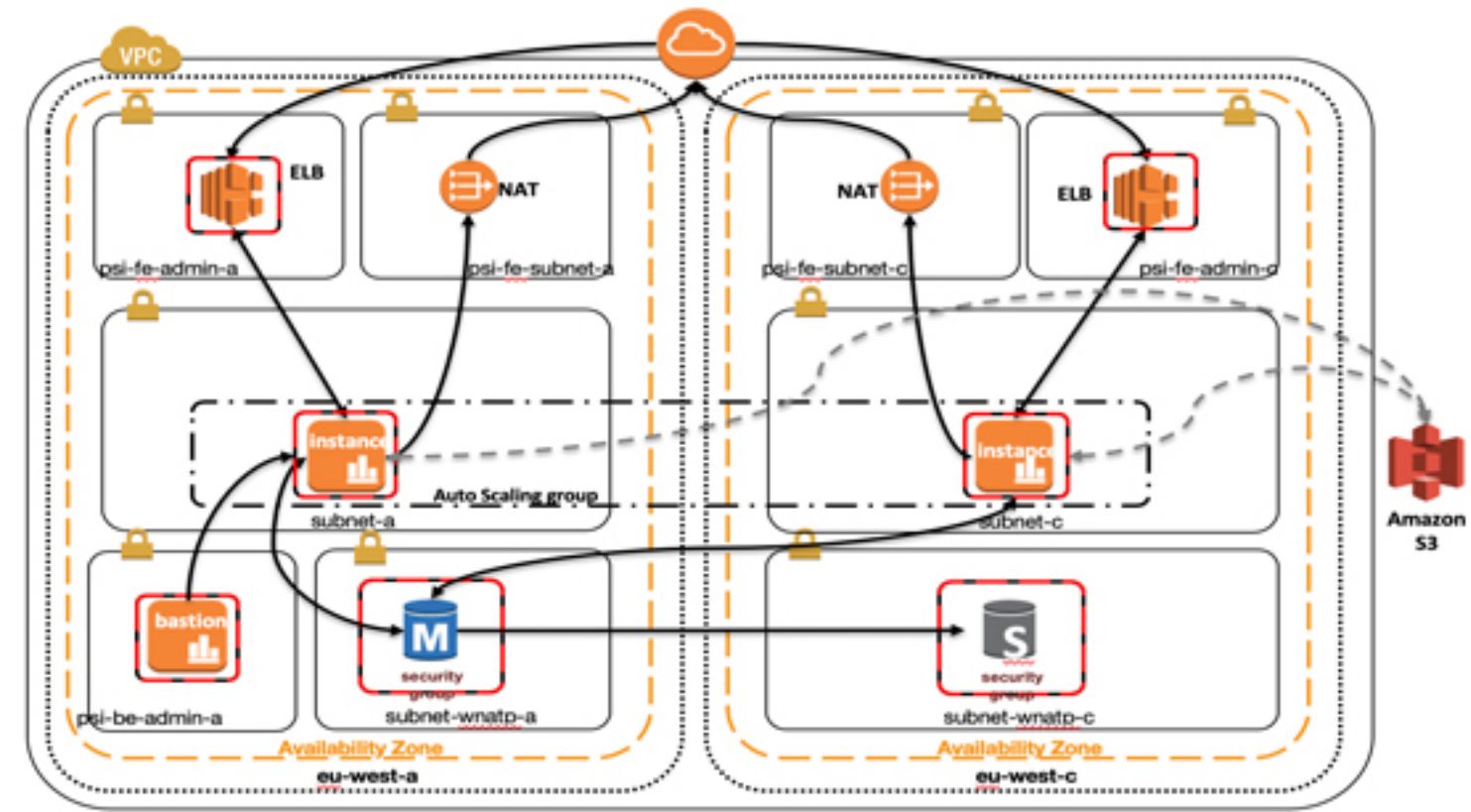
The first phase

Brand new team with a
big responsibility

Lift and shift



Let's talk tech



Advantages of the first phase

Technical advantages? Sure.

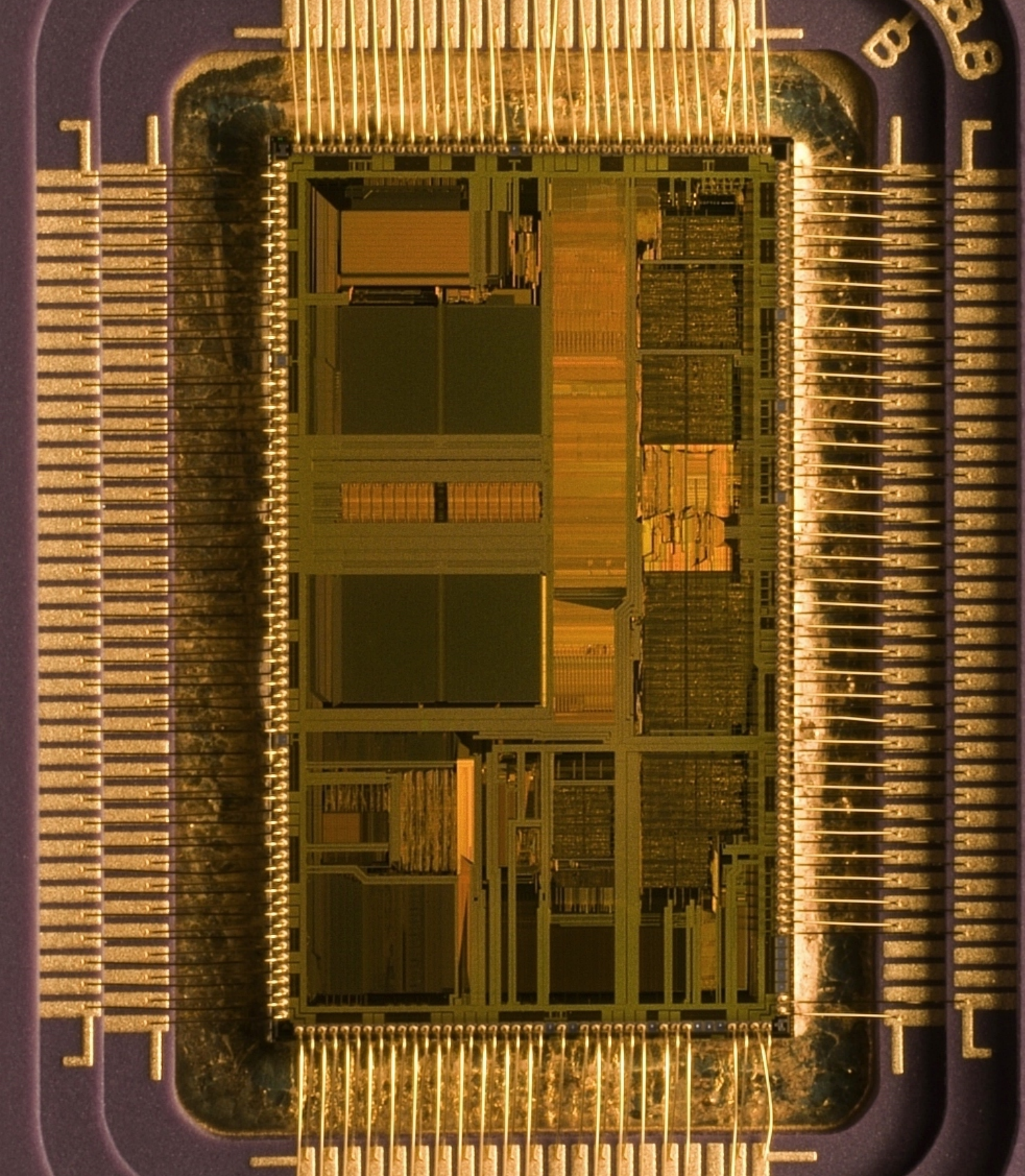
Business advantages? *Sì!*



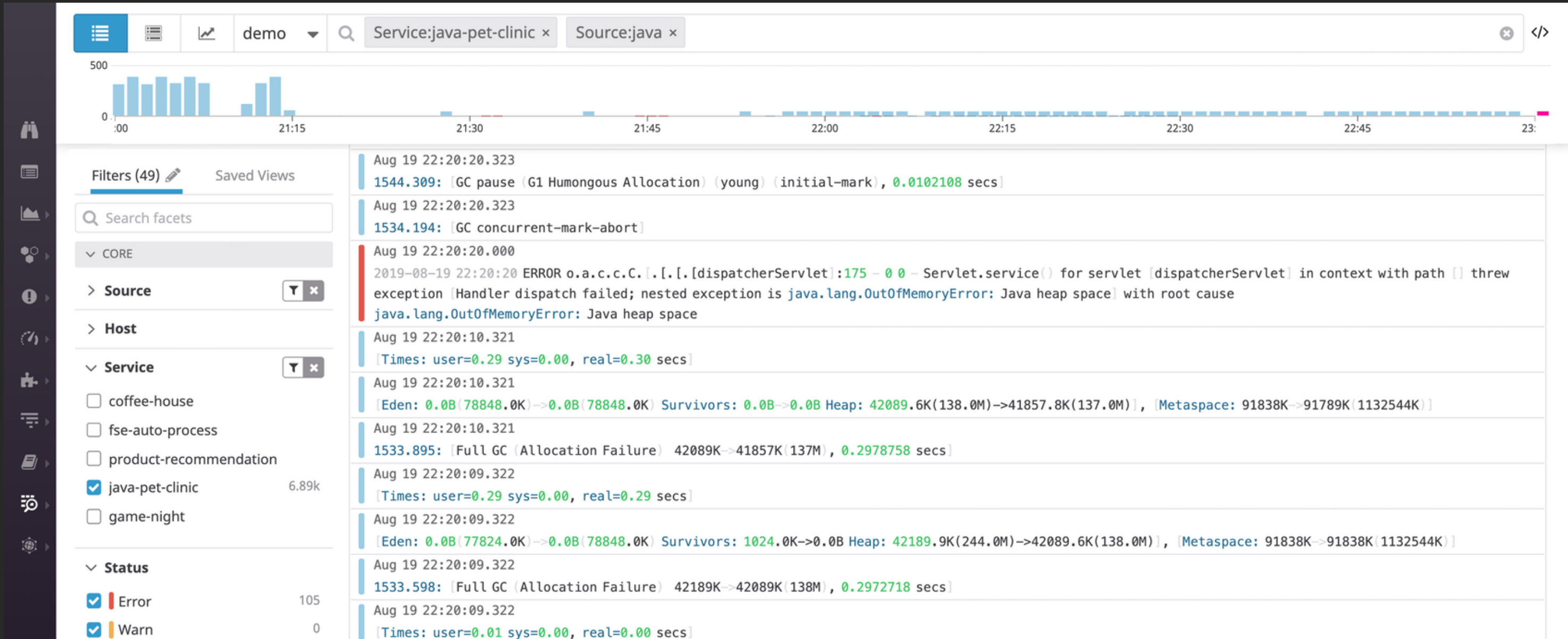
Observability: required

Monitoring isn't enough

Partner with an expert



What is Observability?



Increasing complexity and scale

Search containers...

Filter by tag...

Group by tag...

Hide Sidebar

Showing 0 – 47 of 47 matching containers

Last updated: Thu, 28 Sep 10:39:23

	NAME	CPU %	RSS MEMORY↓	TX	RX	STATUS	START
> Pod	> k8s_dd-agent_dd-agent-85txw_default_0...	0 %	271.41 MB	0 B	0 B	up	13 days ago
	> k8s_dd-agent_dd-agent-cwdcp_default_0...	0 %	270.95 MB	0 B	0 B	up	13 days ago
	> k8s_dd-agent_dd-agent-4hqnf_default_0...	1 %	269.92 MB	0 B	0 B	up	13 days ago
	> k8s_agent_weave-scope-agent-1z0lz_kub...	0 %	258.28 MB	0 B	0 B	up	a month ago
	> k8s_fluentd-gcp_fluentd-gcp-v2.0-028fz_...	41 %	256.24 MB	0 B	0 B	up	2 months ago
	> k8s_dd-agent_dd-to-staging-cq5r5_defau...	0 %	242.68 MB	0 B	0 B	up	2 months ago
	> k8s_dd-agent_dd-to-staging-w4ntm_defa...	0 %	226.99 MB	0 B	0 B	up	2 months ago
	> k8s_dd-agent_dd-to-staging-dnr9f_defau...	0 %	199.26 MB	0 B	0 B	up	a month ago
	> k8s_fluentd-gcp_fluentd-gcp-v2.0-cjlbw_...	42 %	205.99 MB	0 B	0 B	up	a month ago
	> k8s_agent_weave-scope-agent-58vm9_ku...	0 %	142.73 MB	0 B	0 B	up	3 months ago
	> k8s_agent_weave-scope-agent-46mxq_ku...	10 %	105.71 MB	0 B	0 B	up	2 months ago
	> k8s_fluentd-gcp_fluentd-gcp-v2.0-vpc2l_...	5 %	94.39 MB	0 B	0 B	up	a month ago
	> k8s_app_weave-scope-app-780742946-h...	1 %	79.87 MB	0 B	0 B	up	a month ago
	> k8s_my-release-etcd_my-release-etcd-1_...	3 %	28.96 MB	0 B	0 B	up	4 months ago
	> k8s_dd-agent_dd-agent-g873l_default_8d...	0 %	26.64 MB	0 B	0 B	up	7 days ago

Filter kube pod list

☐ dd-agent-4hqnf 1

☐ dd-agent-85txw 1

☐ dd-agent-cwdcp 1

☐ dd-to-staging-cq5r5 1

Filter kube deployment list

☐ heapster-v1.3.0 2

☐ kube-dns 3

☐ kube-dns-autoscaler 1

☐ kube-state-metrics 1

> Service Group

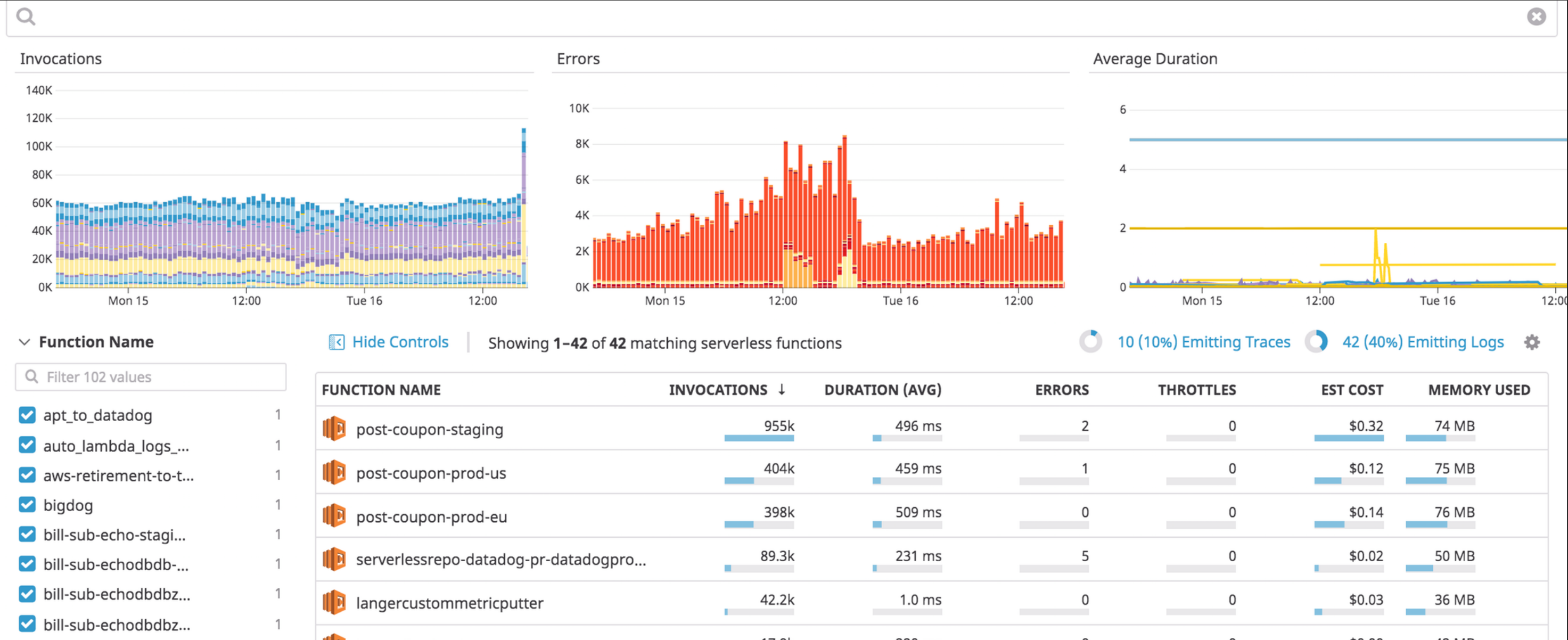
> Namespace Group

> Cluster-Name Group

> Container Image Group

> Host Group

An holistic, multi-dimensional approach



Function Name

Filter 102 values

☒ apt_to_datadog

1

☒ auto_lambda_logs_...

1

☒ aws-retirement-to-t...

1

☒ bigdog

1

☒ bill-sub-echo-stagi...

1

☒ bill-sub-echodbdb-...

1

☒ bill-sub-echodbdbz...

1

☒ bill-sub-echodbdbz...

1

Hide Controls

Showing 1-42 of 42 matching serverless functions

10 (10%) Emitting Traces

42 (40%) Emitting Logs

⚙

Story time!

Critical B2C service crossing
multiple segments and teams

Chasing problems; chasing ghosts...



Everybody needs
friends

Growing internally and externally

AWS collaboration

Datadog collaboration



The second phase

Level-up: new tech, new culture

Move faster *and* safer



Docker for all!

No lifting and shifting; need to re-architect things

Containerization is definitely faster, but is it safer?



Trust, but verify

Rapid prototyping

Managed services

Infrastructure concerns



Serverless (Lambda)

What is it?

Works for some things, but not for others

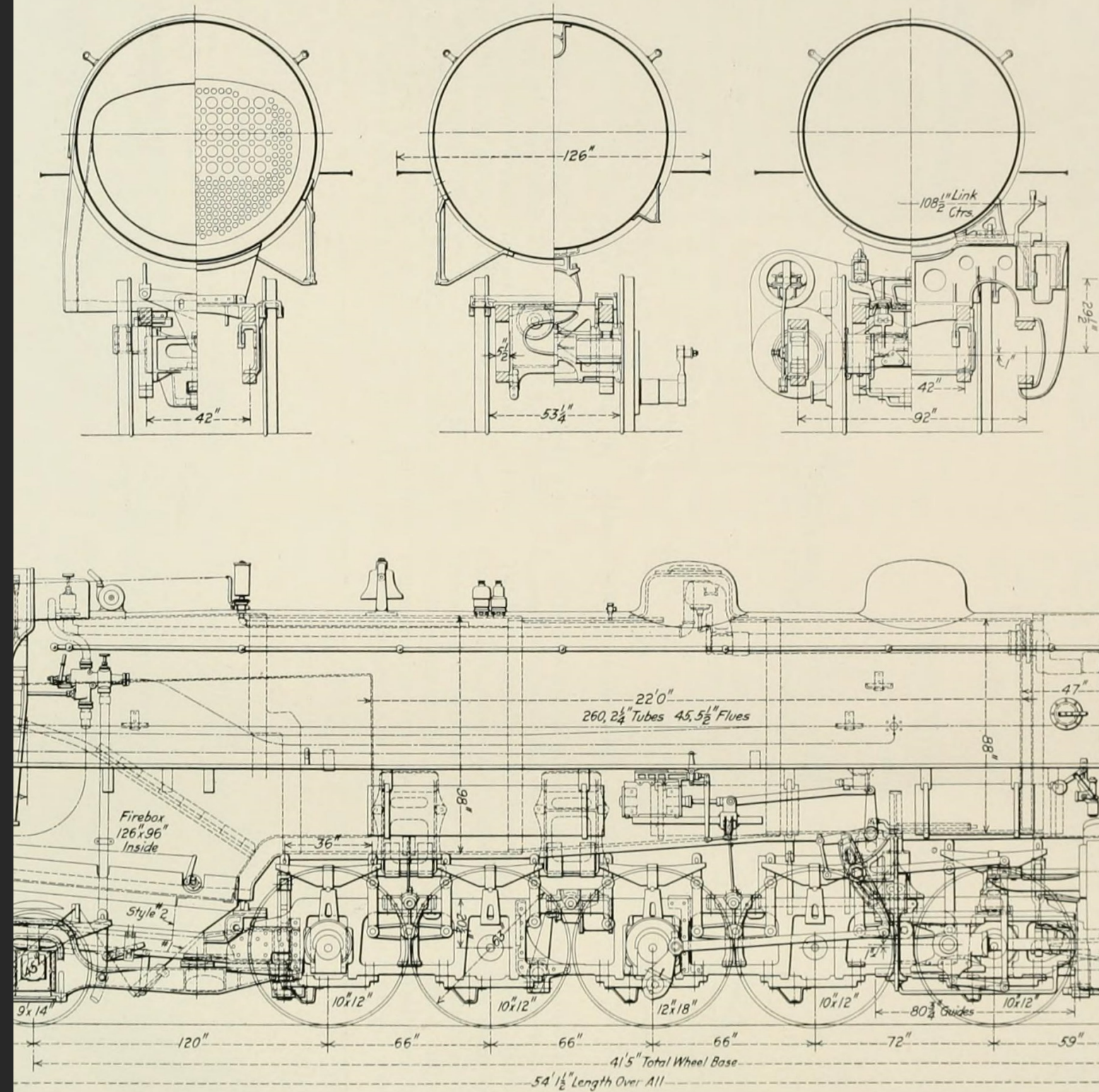
Operational advantages and concerns



Serverless, a practical example

APIs are often good candidates for serverless

May require significant design and implementation changes



Elevation and Cross Sections of Union Pacific 2-10-2 Type Locomotive

Some of the cool
things we're building

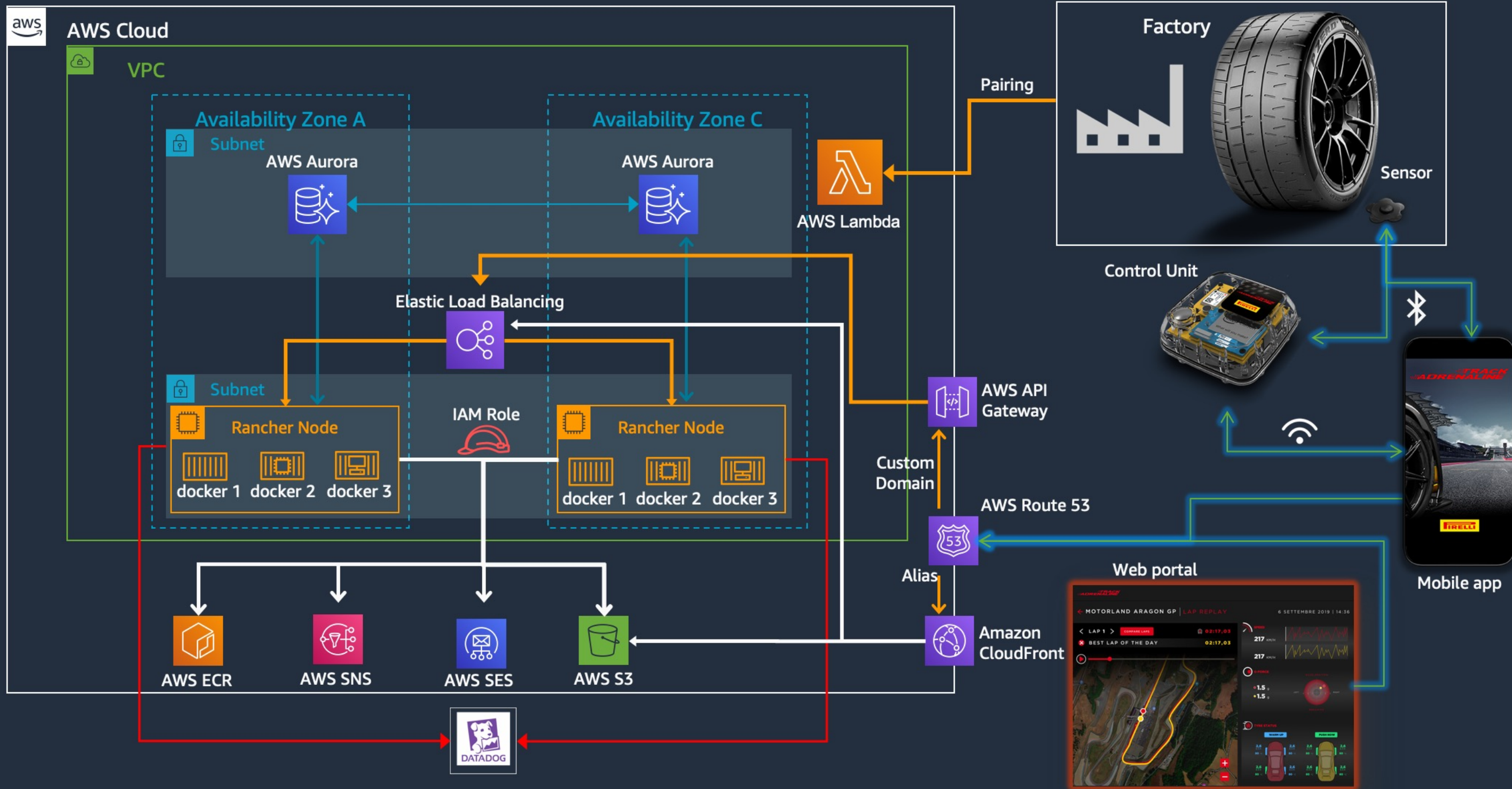
Racing on tracks

Managing truck fleets

Sustainable mobility

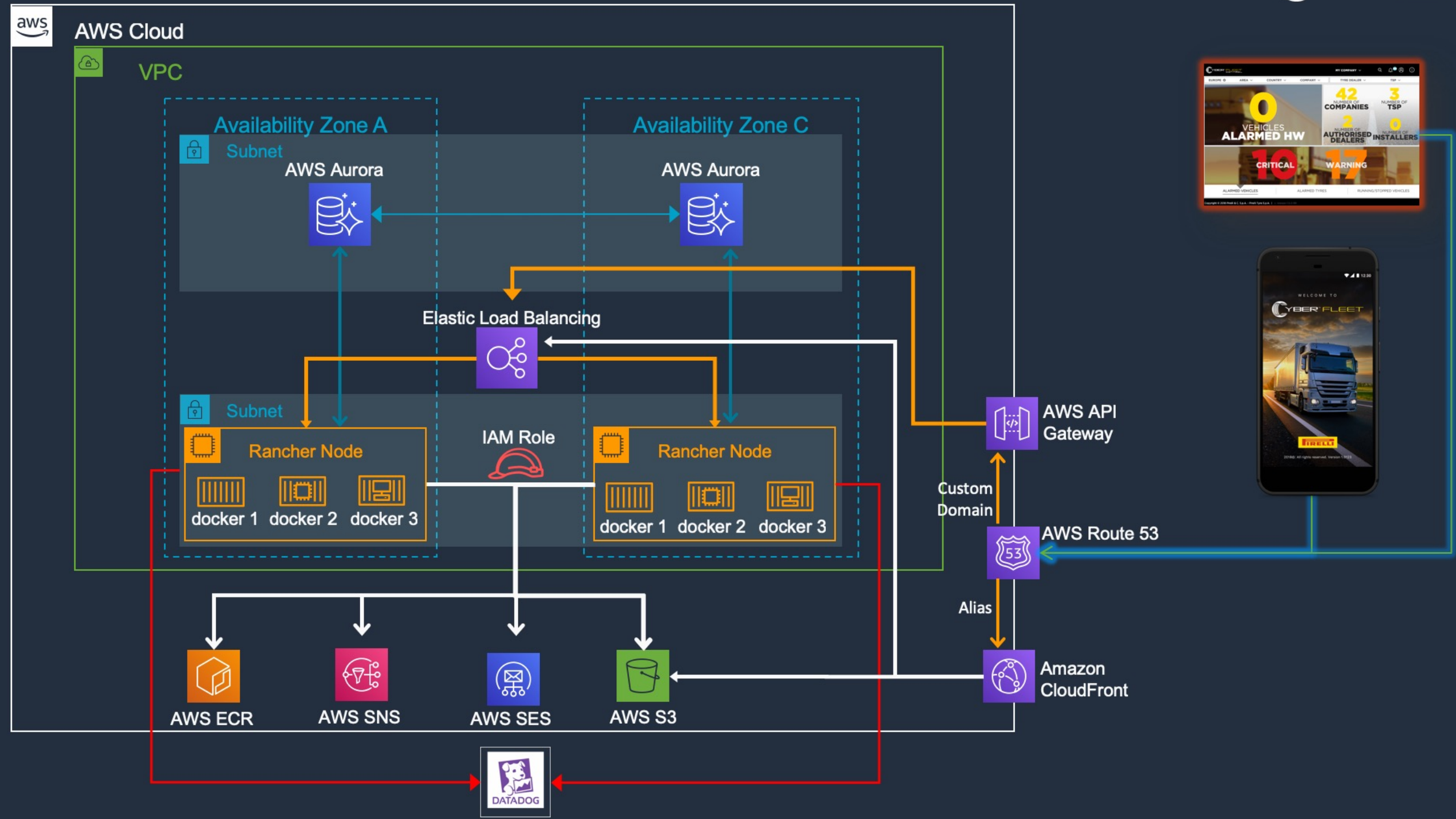


TRACK
ADRENALINE™



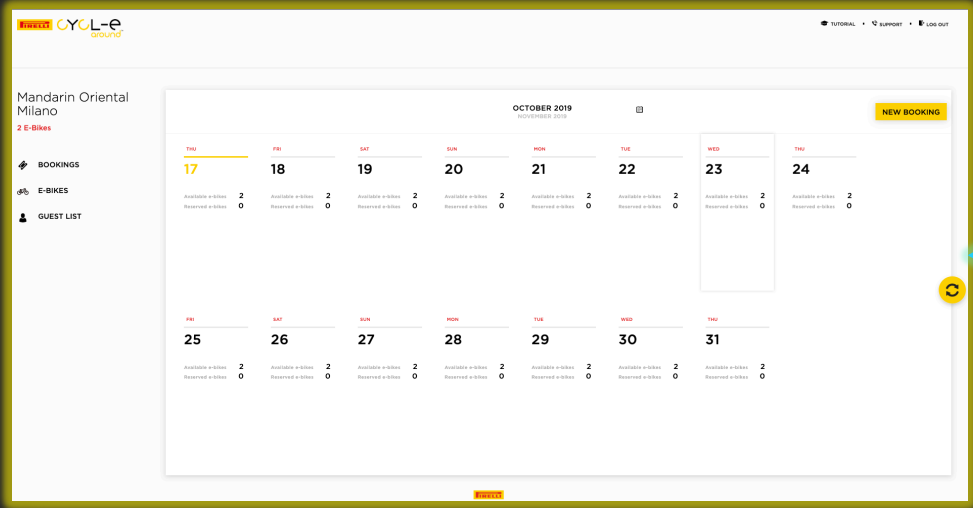


SOLUTIONS TO **ENHANCE YOUR** TRANSPORT **BUSINESS**



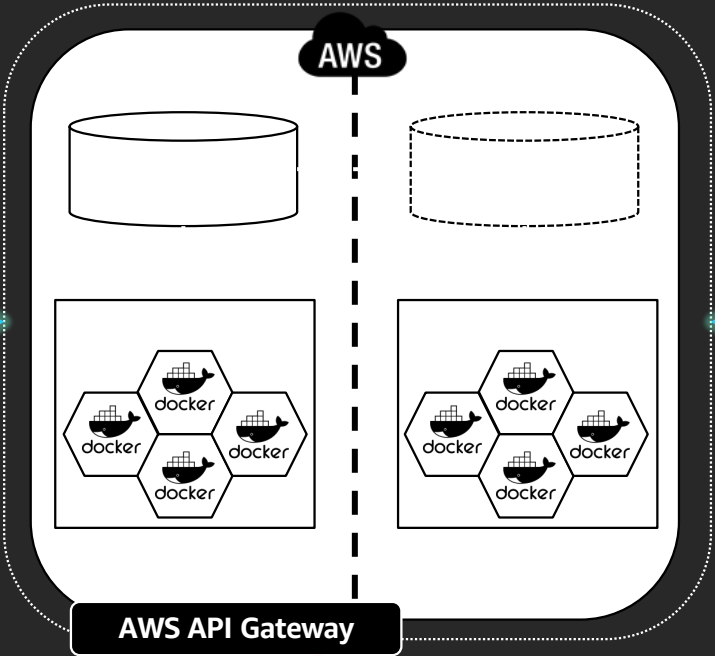


CYCL-e
around™

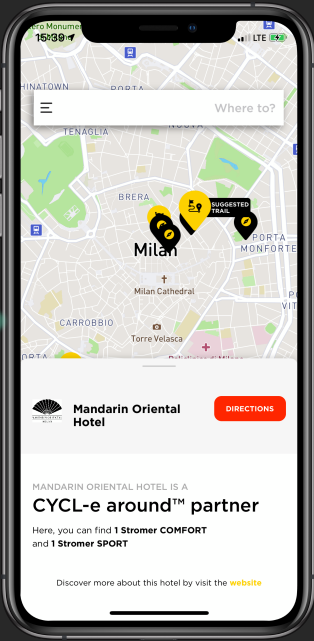


Web front end
(AngularJS, Redux)

<https://cycle-api.pirelli.digital>



http (REST)

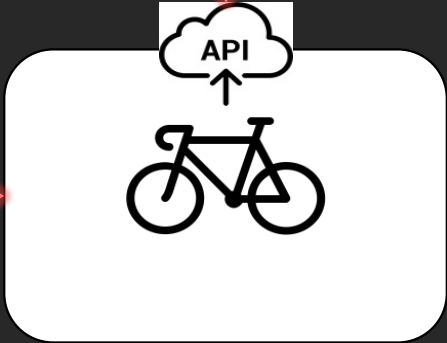


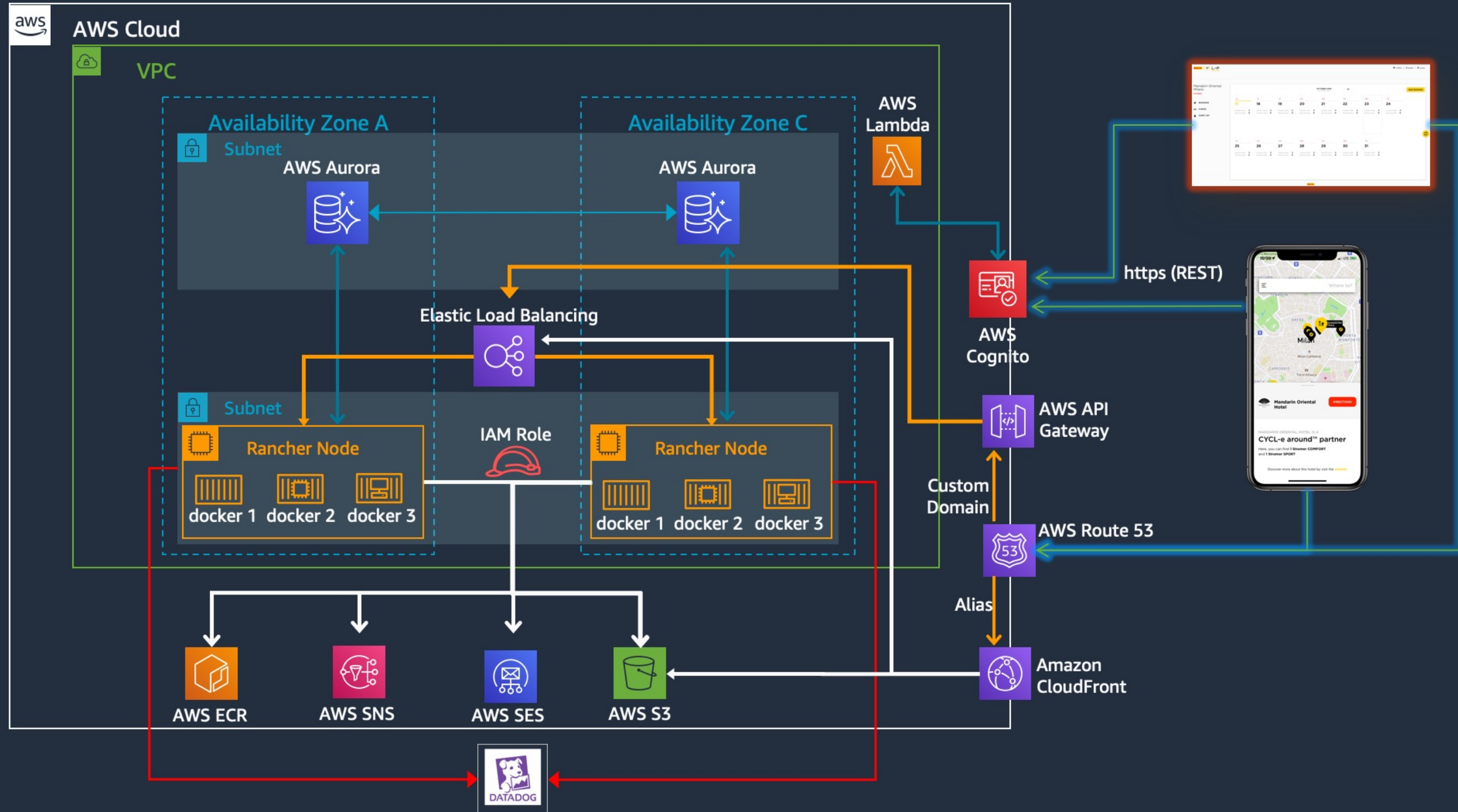
Native iOS
and Android
App

http (REST)



2G/3G Half Duplex





Setting standards

Provide guidance to teams both internally and externally

Not dogma—adaptability is key!



Future improvements; the third phase

AWS Landing Zone

Improved observability story

Secrets management



Thank you!

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