

@ChrisSinjo



Doing things

the hard way

Hi



@ChrisSinjo



@ChrisSinjo

An SRE

GO CARDLESS

“Obvious” mistakes

and

why we make them



Conference talks

favour

certain

structures

Conference talks

favour

self-contained

narratives

“How we fixed the unfixable”

–*Fixing Things Ltd*

“How we scaled our system 100x”

–*ScaleCorp*

These are

great

stories to tell!

But there's

more...

Mistakes

The ones that
were "obvious"

The mistakes you
never thought
you'd make

Except you did

And I hope I
can convince
you

This is normal

The
reasons
are often
reasonable

Talking openly

is important

Context

&

biases

Size:

25 → 215 total

(8 → 60 eng)

GO CARDLESS



Hindsight

Structure:

3 examples

foreach (example) :

foreach (example) :

Define it

foreach (example) :

Define it

What it looks like

foreach (example) :

Define it

What it looks like

Problems caused

foreach (example) :

Define it

What it looks like

Problems caused

Fixes

Common themes

Common themes

Q&A

So let's get to it

Failure mode 1

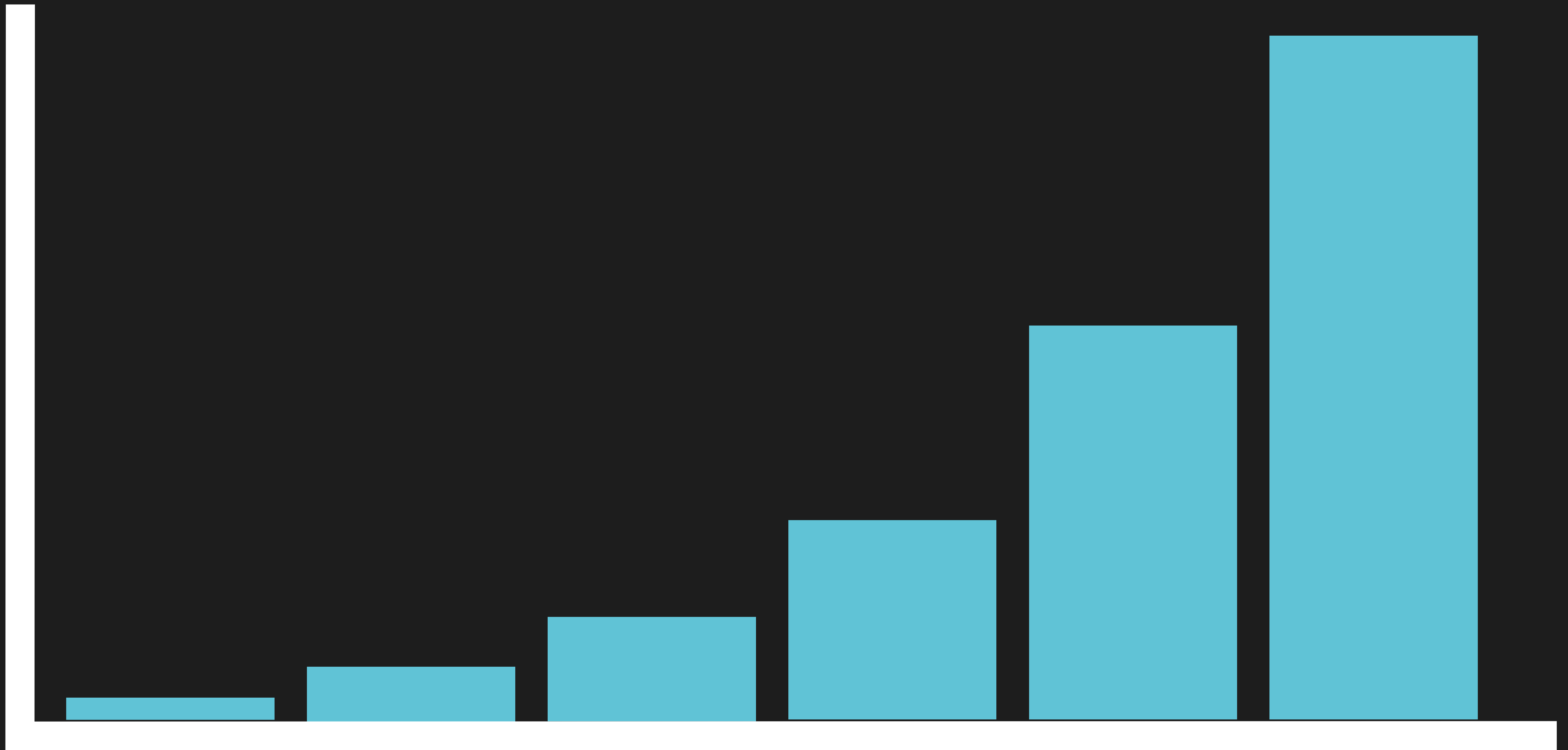
Early Infra/

Product Divide

You're a young
company

You've built a
product

Your userbase
is growing



You've also
built this other
thing

Your product
needs it to work

It caught you
by surprise

You have an

infra!

It takes up

dev time



You weren't
ready for this

"Can't someone
make this go
away?"

“We need to
hire a
DevOps”

It sounds silly

But it literally

happens

“We have all this rubbish that’s
distracting our devs.”

*–The least appealing job
description ever*



The phrasing

was clunky

But the framing
is common

Convenience



T

M

An understandable
lever to pull

But...

Problems

Now you have
organisational
problems

Disconnect

devs from

production

A new
bottleneck

Too much infra

Too soon

Solutions

Assuming you
can't un-split

Make **infra**
contributions
easy

Make it obvious

what needs

changing

Make

experimentation

easy

Set aside time
to coach

Breaking my
own rules

Some up-front
advice

First infra hire:

dev background

Embed them in
the existing
team

Don't give them
sole ownership
of the pager

Failure mode 2

Distracted by
hard problems

We hear it so

often

“Join us and solve hard problems”

–*Every job ad*

We assume **hard**
problems are
most **important**

They frequently

aren't

Outcome: we

neglect the

basics

When I say

“basics” ...

Observability

Metrics

Monitoring

(Structured)

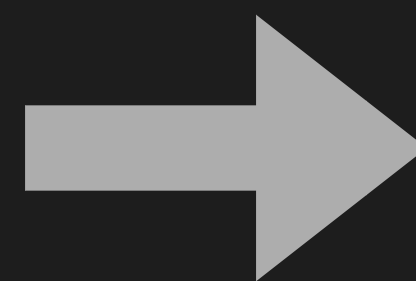
Events/Logs

Metrics

Monitoring

(Structured)

Events/Logs



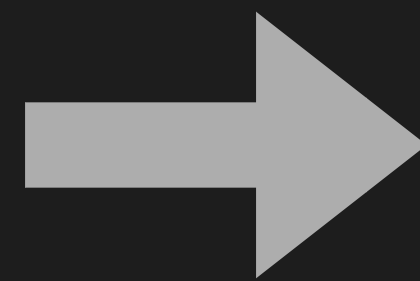
SLOs

Metrics

Monitoring

(Structured)

Events/Logs



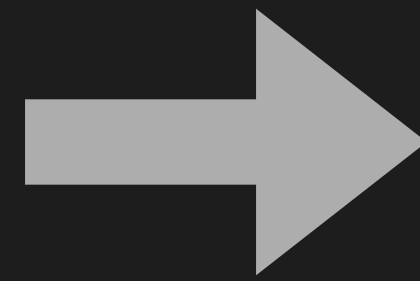
Goals

Metrics

Monitoring

(Structured)

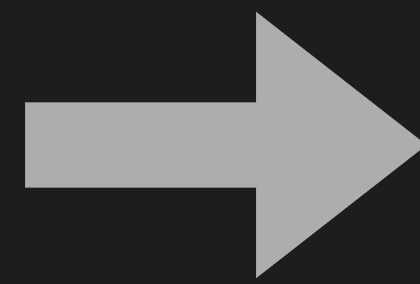
Events/Logs



Uptime

Metrics

Monitoring



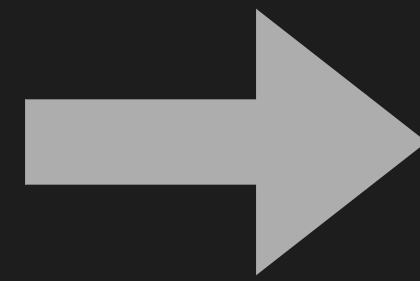
Error rate

(Structured)

Events/Logs

Metrics

Monitoring



Latency

(Structured)

Events/Logs

Easy to defer

It feels mundane

It feels mundane

- As a project

“So how does this improve the service?”

“So how does this improve the service?”

“We can measure it better.”

“So how does this improve the service?”

“We can measure it better.”

“How does that improve it?”

“So how does this improve the service?”

“We can measure it better.”

“How does that improve it?”



22

2022

20

29

30

- Faster debugging

- Faster debugging
- Shorter outages

- Faster debugging
- Shorter outages
- Better project choice

It feels mundane

- As a project

It feels mundane

- As a project

- As ongoing work

Observability

.
is

ongoing work

Problems

Previously...

Zero-downtime Postgres upgrades

Restarting databases without the apps noticing

@ChrisSinjo



<https://www.youtube.com/watch?v=SAkNBiZzEX8>

Was 10-15s of
downtime okay?

Back to

basics?

- **Faster** debugging
- **Shorter** outages
- **Better** project choice

- **Slower** debugging
- **Longer** outages
- **Worse** project choice

Lack of

confidence

Solutions

Post-mortem meta-analysis

“It wasn’t clear where the
problem was.”

–*Post-mortems 1, 2, 3*

“We couldn’t break the errors
down by user.”

–*Post-mortems 2, 3, 4*

**"It was a false alarm.
Again."**

–Post-mortems 3, 4, 5

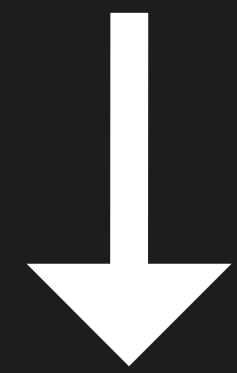
You can do better
at the basics

A cultural shift

Definition of

done

Done when it's **shipp**ped



Done when it's
measured

A **hugge** shift

Cultural
change
takes **time**

Start

somewhere

There are

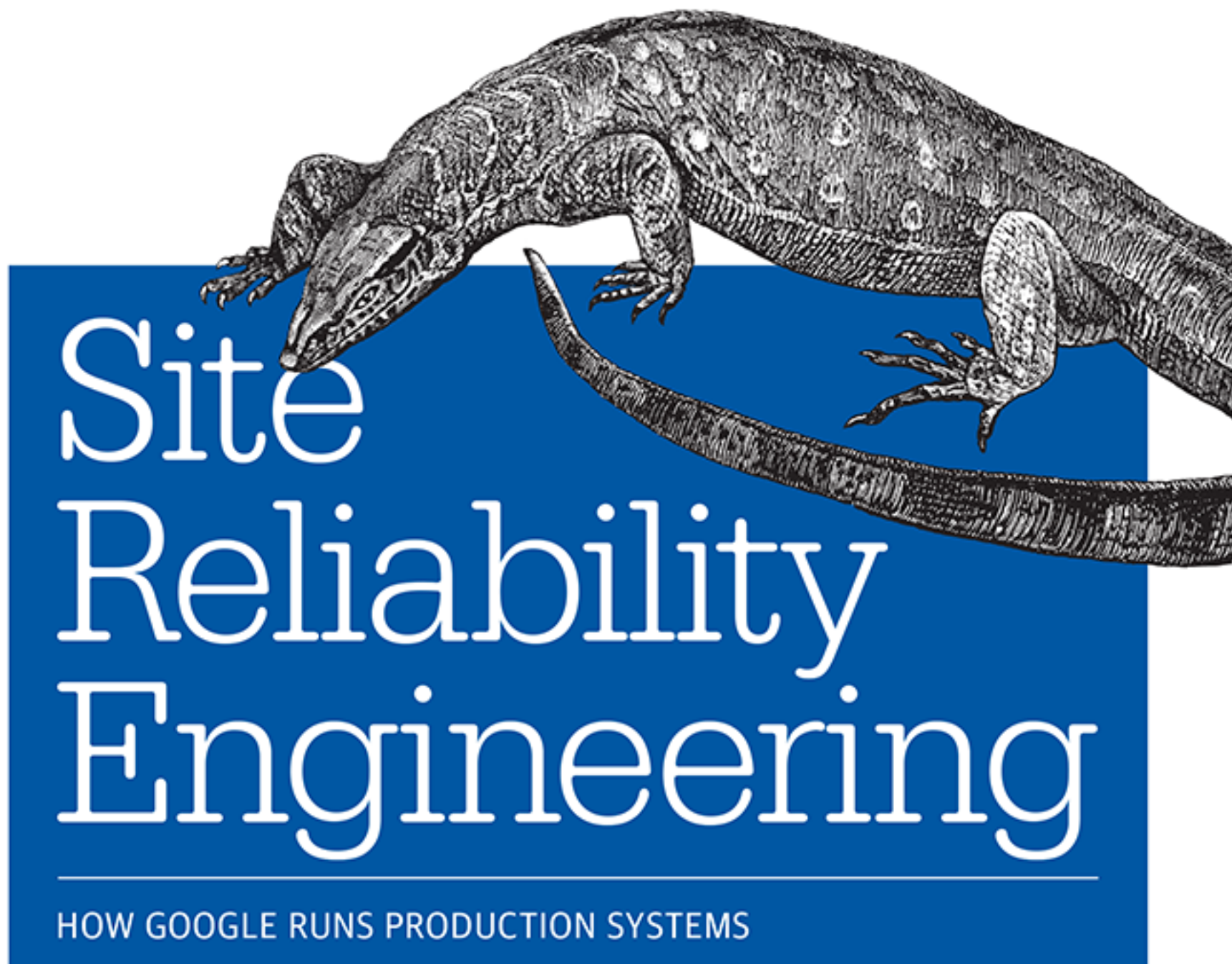
other basics

- Post-mortem analysis

- Post-mortem analysis
- Tracking toil

- Post-mortem analysis
- Tracking toil
- Tracking pages per shift

O'REILLY®



Edited by Betsy Beyer, Chris Jones,
Jennifer Petoff & Niall Murphy

Failure mode 3

The everything

project

Story-based

Kinda

painful

to tell

The most
immediate
impact

You have an

infra!

You're not

happy with it :(

It evolved

haphazardly

You know
where the
problems are

You want to

fix them

Reshaping

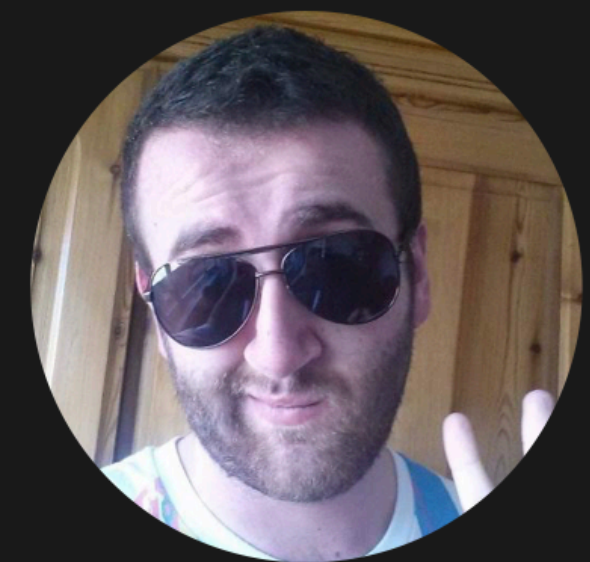
the core

Previously...

A million containers isn't cool

You know what's cool? A hundred containers.

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The

precursor

Goal:

Better deployment

Containers

Containers

Orchestrator (Mesos)

Containers

Orchestrator (Mesos)

Load balancing

Containers

Orchestrator (Mesos)

Load balancing

Staging-per-developer

Containers

Orchestrator (Mesos)

Load balancing

Staging-per-developer

Self-serve developer UI

We were working

on an

Everything Project

Problems

Everything is seen in
terms of

The New World

So nothing happens
back in

The Old World

It feels

efficient

But it's

not

Loss of

•
impact

Loss of

confidence

Loss of

team morale



Solutions

STOP

ARRÊT



Look for the

smallest

version

Look for the

valuable

part

For us:

deployment

Containers

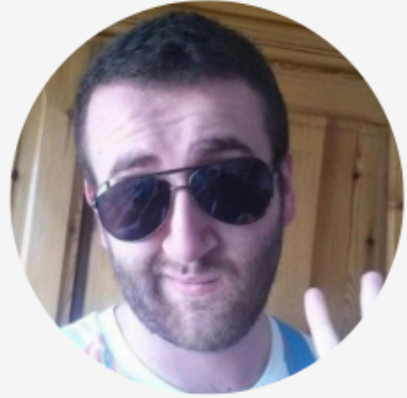
Orchestrator (Mesos)

Load balancing

Staging-per-developer

Self-serve developer UI

Containers



Chris Sinjakli in Engineering, Site Reliability Engineering July 14, 2016

From idea to reality: containers in production at GoCardless

As developers, we work on features that our users interact with every day. When you're working on the infrastructure that underpins those features, success is silent to the outside world, and failure looks like this:

<https://gocardless.com/blog/from-idea-to-reality-containers-in-production-at-gocardless/>

Efficiency **cannot** come

at the cost of

everything else

No *stopping*

the world



Long-term goals



Long-term goals



Short-term reality

JOEL ON SOFTWARE

YOUR HOST



APRIL 6, 2000 *by* JOEL SPOLSKY

Things You Should Never Do, Part I

☰ TOP 10, CEO, NEWS

Netscape 6.0 is finally going into its first public beta. There never was a version 5.0. The last major release, version 4.0, was released almost three years ago. Three years is an *awfully* long time in the Internet world. During this time, Netscape sat by, helplessly, as their market share plummeted.

It's a bit smarmy of me to criticize them for waiting so long between releases. They didn't do it *on purpose*, now, did they?

Well, yes. They did. They did it by making the **single worst strategic mistake** that any software company can make:

They decided to rewrite the code from scratch.

Mistakes

Failure mode 1

Early Infra/
Product Divide

Failure mode 2

Distracted by
hard problems

Failure mode 3

The everything
project



I've presented 3

"obvious" mistakes

Not first

Not last

Each has an
internal logic

Conference talks

favour

self-contained

narratives

Even when
talking about
mistakes

Technical

mistakes are

self-contained

Us vs Them

Us vs Them

And I hope I
have convinced
you

You won't avoid

every

mistake

We certainly

didn't

It's never

perfect

It's perfectly
fine to correct
course

Thank you






@ChrisSinjo

@GoCardlessEng

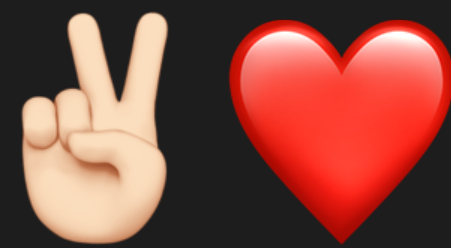
Schemes supported by GoCardless

GoCardless provides a single point of access to Europe's largest Direct Debit schemes. Learn more about each scheme below, or [get in touch](#) to speak to our payments expert.

 UK Bacs	 Eurozone SEPA	 Australia BECS
Currency: GBP	Currency: EUR	Currency: AUD
<p>Automated payments are at the very centre of the UK's financial system, providing an essential service for both consumers and organisations. Bacs is the company which runs Direct Debit in the UK. 74% of all recurring payments are made by Direct Debit.</p>	<p>SEPA Direct Debit is a Europe-wide Direct Debit system that allows merchants to collect Euro-denominated payments from accounts in the 19 SEPA countries and associated territories.</p> <p>Key markets: Germany, Austria, France, Spain and The Netherlands</p>	<p>The Bulk Electronic Clearing System (BECS) is managed and regulated by BECS. Direct Debit is a popular payment method in Australia, making up around 1/3 of all non-cash payments.</p>

<https://gocardless.com/schemes>

We're hiring



@ChrisSinjo
@GoCardlessEng

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Questions?



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