Serverless Architectures

Can we really live without them?

Introducing

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Cloud Architect ALLIANCE

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Thank you:

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Events calendar

2018-2019

Thursday **15 November 2018**	**CAA #13 High Performing Cloud Architects**
Thursday **17 January 2019**	**CAA #14 Cloud Architect of the Year & New Year drinks**

Nominate your peer through:

https://cloudarchitectalliance.com/election

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CLOUD ARCHITECT OF THE YEAR AWARD 2019

January 17th

Nominate your peers:

cloudarchitectalliance.com/election

Categories

1: Cloud Architect of the year

2: Cloud Security Architect of the year

3: Cloud Analyst of the year

Serverless Architectures

Can we really live without them?

Programme

18:00	18:30	**Henri Koppen**	**#noOps with serverless**
		- Appetizer -	
19:00	19:30	**Sander Nagtegaal**	**Serverless Architectures in practice**
		- Main course -	
20:00	20:30	**Cyle Riggs**	**Live coding: A serverless platform in 100 lines**
		- Dessert & Coffee -	
21:00	21:30	**Simon Heerschap** **Yvo van Doorn**	**Ask the experts!**
		- Drinks and networking -	

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Henri Koppen

#noOps with serverless

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menti.com code: (code will be added later)

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Sander Nagtegaal

Serverless Architectures in practice

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100% SERVERLESS ARCHITECTURE

Serverless since **2015** unless.com

This is Marcel and me.

Marcel is my business partner. We go back a long way. We met at a startup that is now called Albelli.

In 2007, we were launching customer for AWS in Europe.

albelli

amazon web services

We love rules

⟶ Peecho product owners had to do 50 push-ups to add a story to the backlog.

peecho

⟶ At myTomorrows, our developer dance-offs are legendary.

myTomorrows

In 2015, we bumped into an Amazon project called “Lambda”.

Although Lambda was in early beta, we decided to build our latest startup with a new rule: **we were not allowed to use servers.**

The Serverless Start-up - Down With Servers!

MONDAY, DECEMBER 7, 2015 AT 8:59AM

This is a guest post by Marcel Panse and Sander Nagtegaal from Teletext.io.

In our early Peecho days, we wrote an article explaining how to build a really scalable architecture for next to nothing, using Amazon Web Services. Auto-scaling, merciless decoupling and even automated bidding on unused server capacity were the tricks we used back then to operate on a shoestring. Now, it is time to take it one step further.

We would like to introduce Teletext.io, also known as *the serverless start-up* - again, entirely built around AWS, but leveraging only the Amazon API Gateway, Lambda functions, DynamoDb, S3 and Cloudfront.

The Virtues Of Constraint

MileIQ is hiring
Sr. Backend Engineer
Python, Spark, Storm, Kafka, etc.
careers@mileiq.com

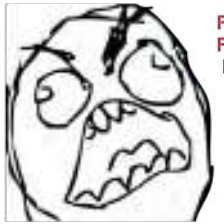
stream
Scalable Feeds API

InMemory.Net
DOT NET NATIVE IN MEMORY DB FOR ANALYTICS
LEARN MORE

Monitor Cloud & App Performance
ManageEngine

RECENT POSTS
Adcash - 1 Trillion HTTP Requests Per Month
Stuff The Internet Says On Scalability For September 22nd, 2017
Evolution of data structures in Yandex.Metrica
Stuff The Internet Says On Scalability For September 15th, 2017
Have you noticed there's a lot more collaboration going on these days? Why?

reddit



[-] kernelzeroday 109 points 10 months ago*

Otherwise known as "reverse not invented here syndrome". Instead of building everything from scratch, this approach pretends nothing exists! Aha, the cloud doesn't have an OS! The cloud doesn't have hardware! It's just a bunch of magical pixie dust that automatically serves our content! Yippee!

It takes some effort to out-valley the valley.

[-] kintamanimatt 8 points 10 months ago

I don't know why everyone's so horrified... it's absolutely hilarious!

[-] felda

considering this is the programming subreddit, the amount of people perplexed by physical activity in the workplace is not the least bit surprising

keep it up fellas

[-] WisconsnNymphomaniac 1 point 10 months ago

It could be a gag on Silicon Valley.

What in the actual fuck.

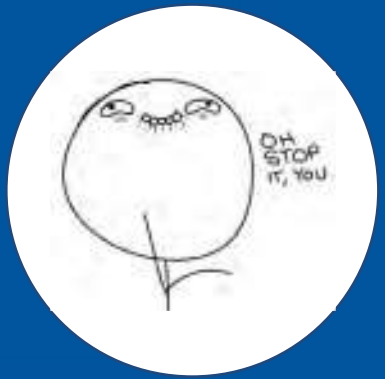
It's cruft.

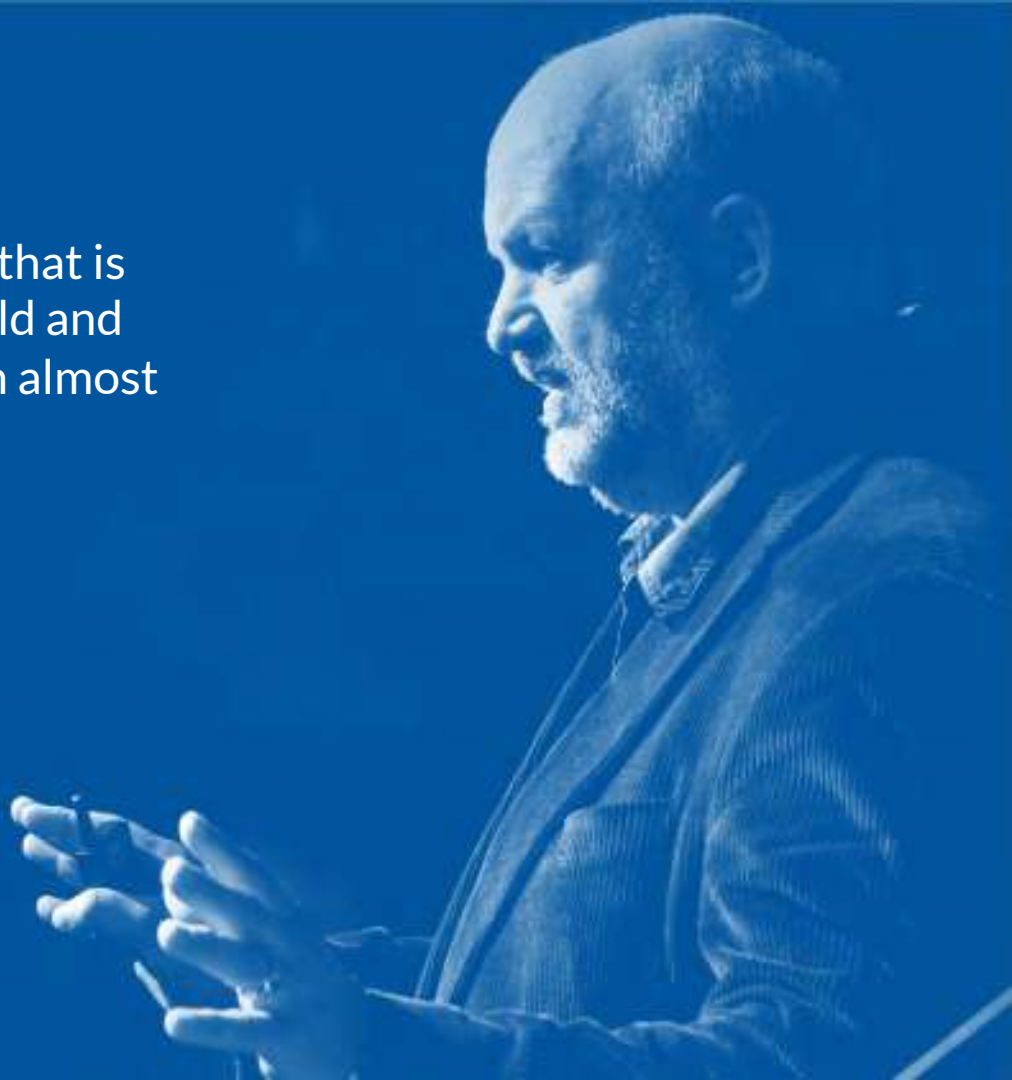
[-] kernelzeroday 35 points 10 months ago

See, there is no value to a web based text editor. Text editors were the first application we invented for fucks sake, there is no business model here. This is not a real startup and is not a real company. It's the modern day equivalent of a drug front laundering money. In fact, this seems a lot more like a pyramid scheme to be honest.

UNLESS was able to launch a service that is helpful to businesses all over the world and gives them a scalable solution with an almost infinite peak capacity.

— WERNER VOGELS, AMAZON





Obviously, people had a strong opinion about serverless.

So, why did we still build a startup with this clunky beta service? Let me quickly run you through the project. Backwards.

The internet is great for cats, but…

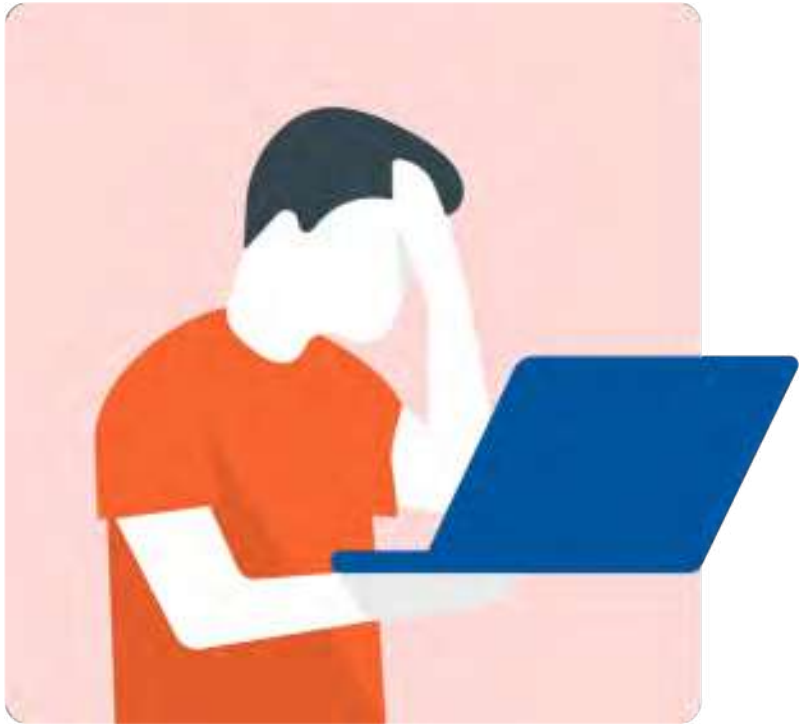
The internet also sucks.

<10
SECONDS

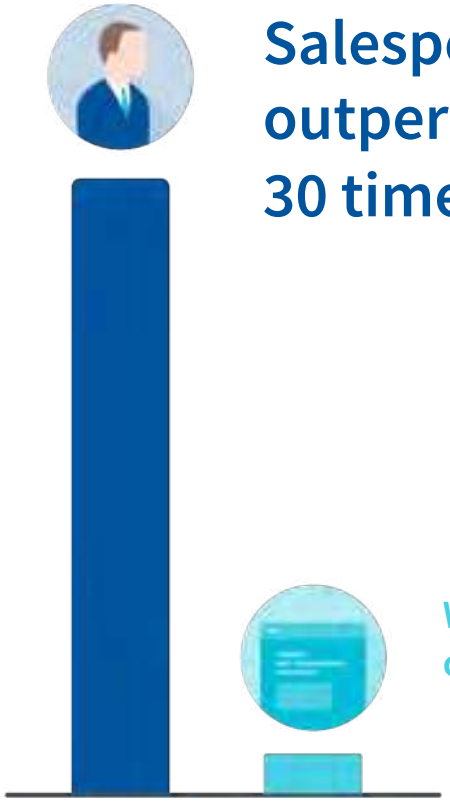
average visit duration
before leaving

1.5%

average
conversion rate



Real people do much better.



Salespeople outperform websites 30 times over.

What if your website could do the same?

Unless adapts your online message to each unique visitor, like a human would.

Goal

→ WITHOUT UNLESS

-30%
Reduction in acquisition costs

2-10%
Better conversion rates

→ WITH UNLESS

Simplified entity model

ACCOUNT

An account represents our B2B customer.

WEBSITE

An account can have multiple websites.

WEB PAGE

A website can have multiple web pages.

VISITOR

A visitor is someone looking at a web page.

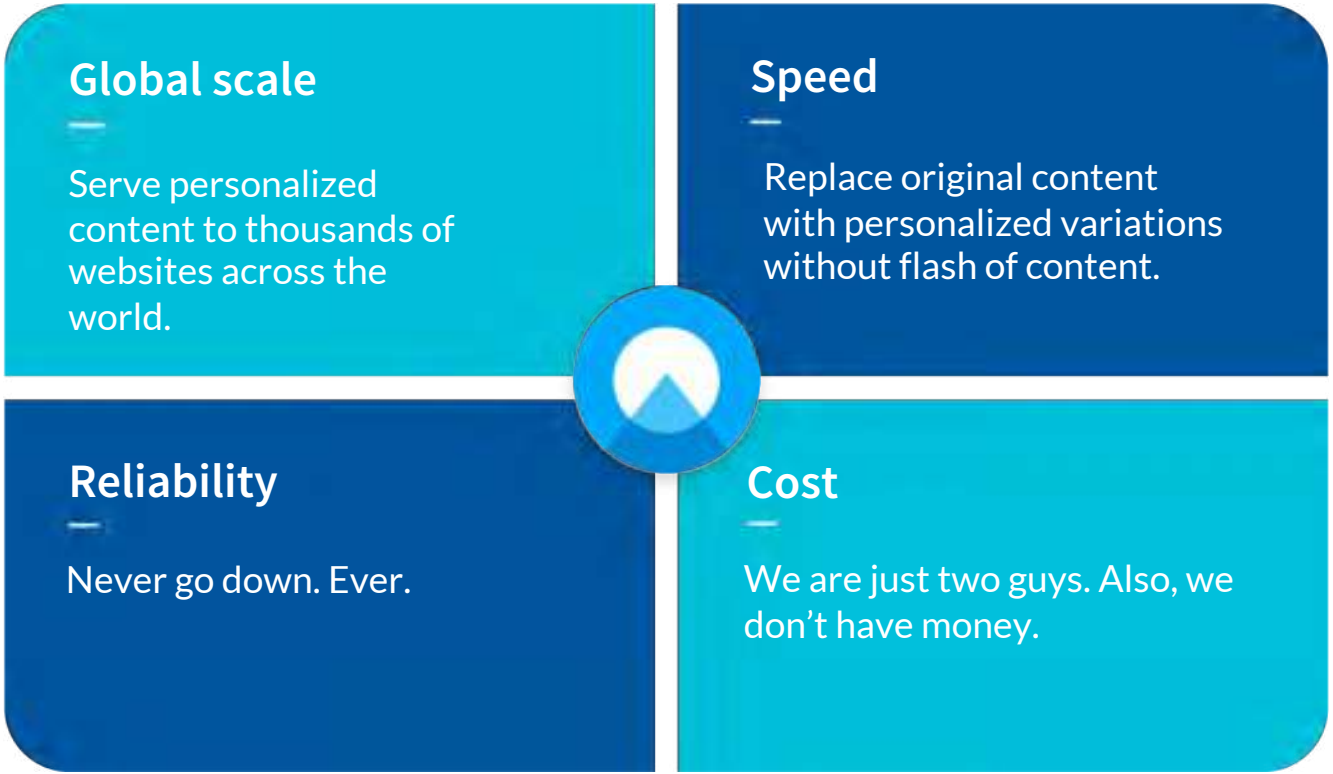
AUDIENCE

Group of visitors with the same characteristics.

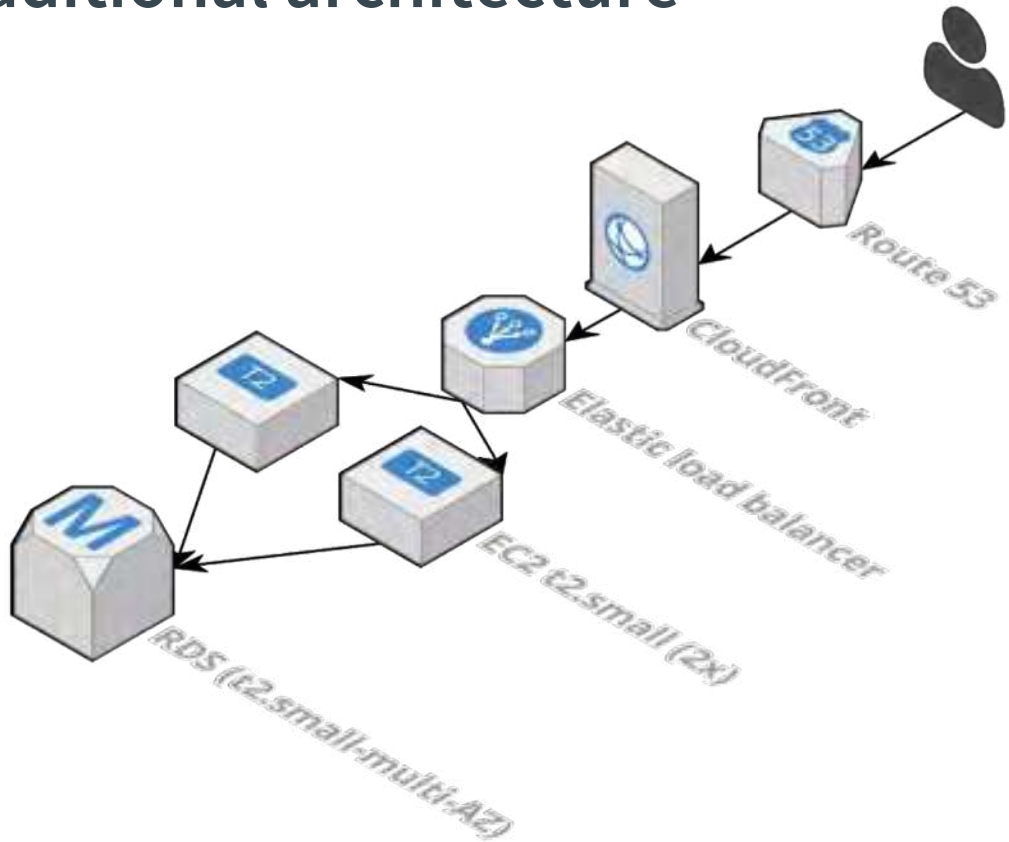
PERSONALIZATION

A personalization is a changed piece of content.

Resulting requirements



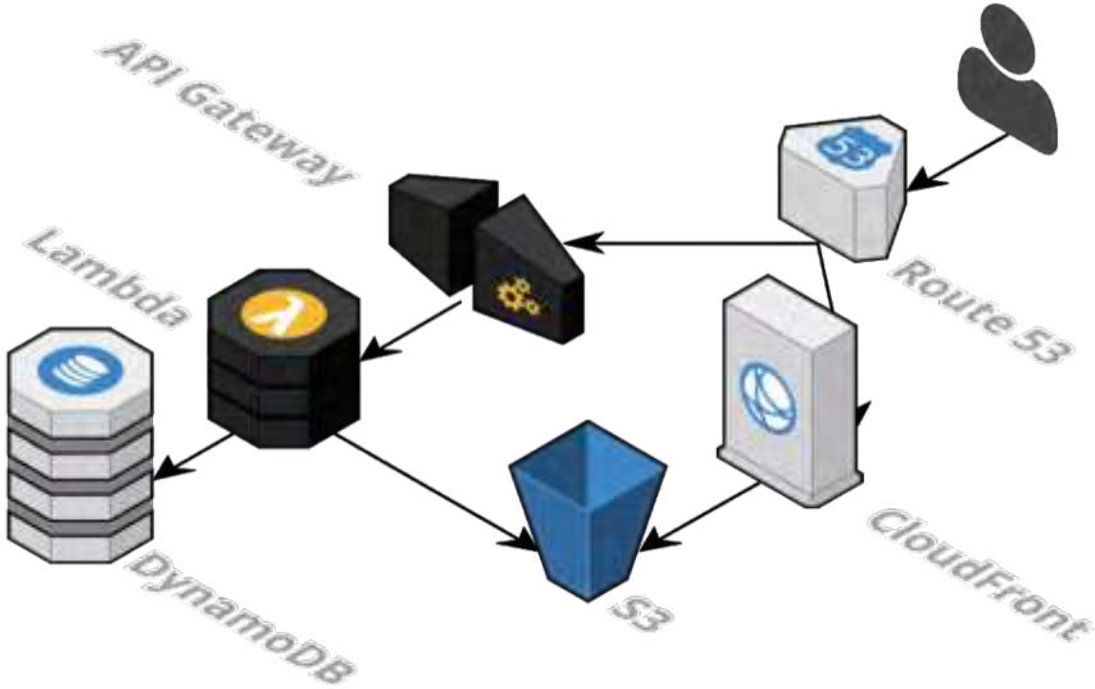
Traditional architecture



SCORE CARD

- Global scale
- Speed
- Reliability
- Cost

Serverless architecture 2015



SCORE CARD

- Global scale
- Speed
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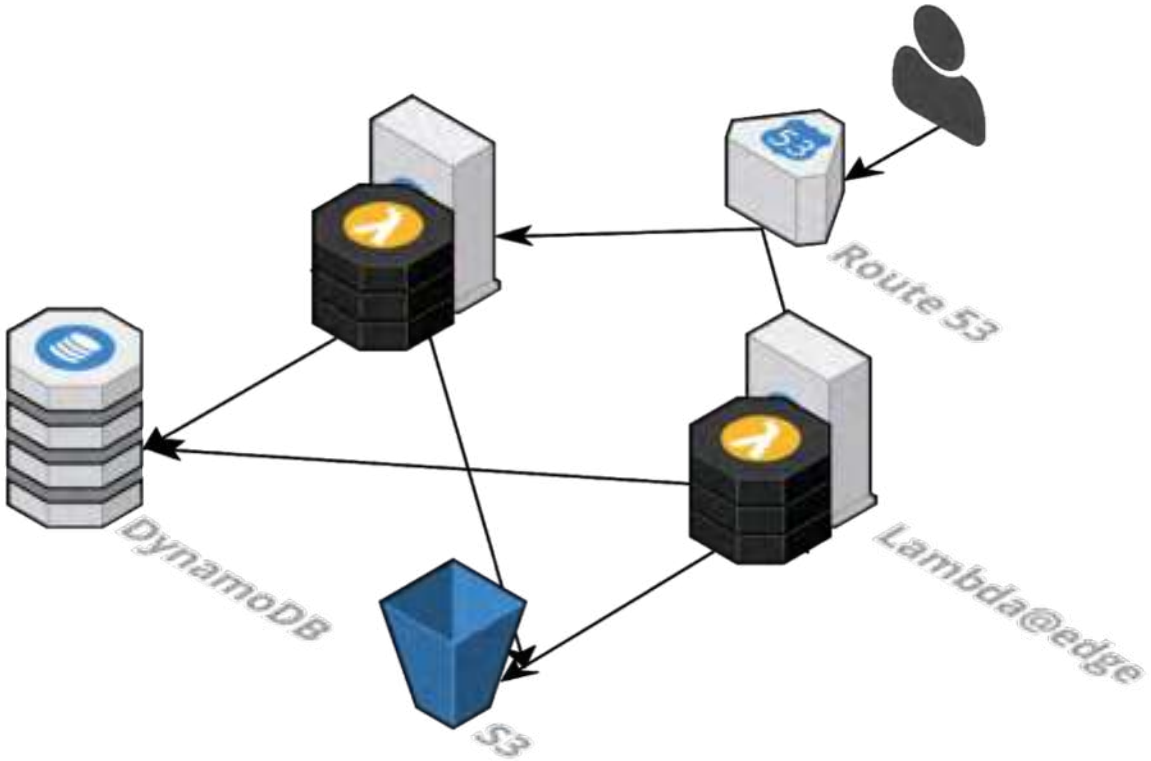
Serverless architecture 2018



SCORE CARD

- Global scale
- Speed
- Reliability
- Cost

Benefits

Super cheap to start

Zero maintenance

Scaling is part of the stack

And you get forced into a micro-services architecture (that's a good thing).

→ Downsides

Difficult logging and debugging

Error reporting is not standard

No local dev environment

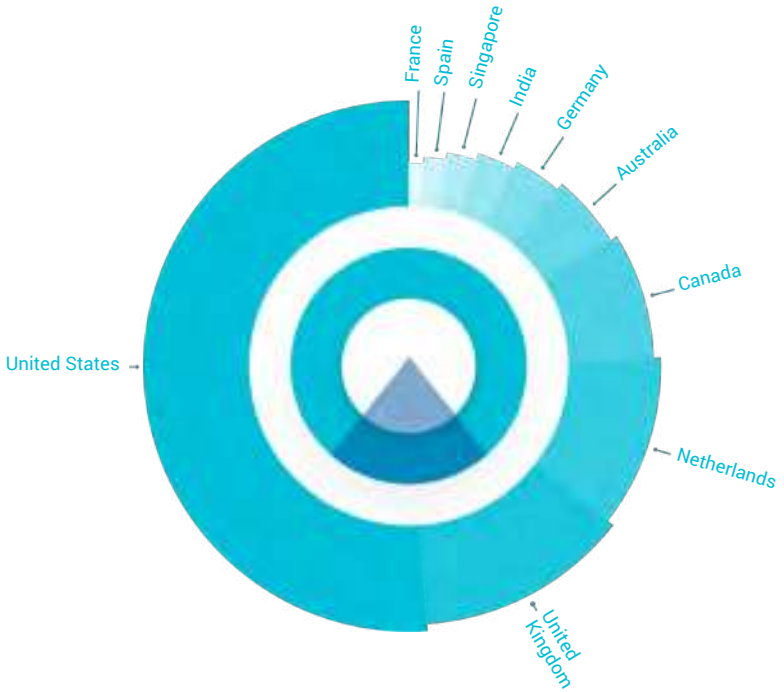
Gets really complex with large teams

Proof

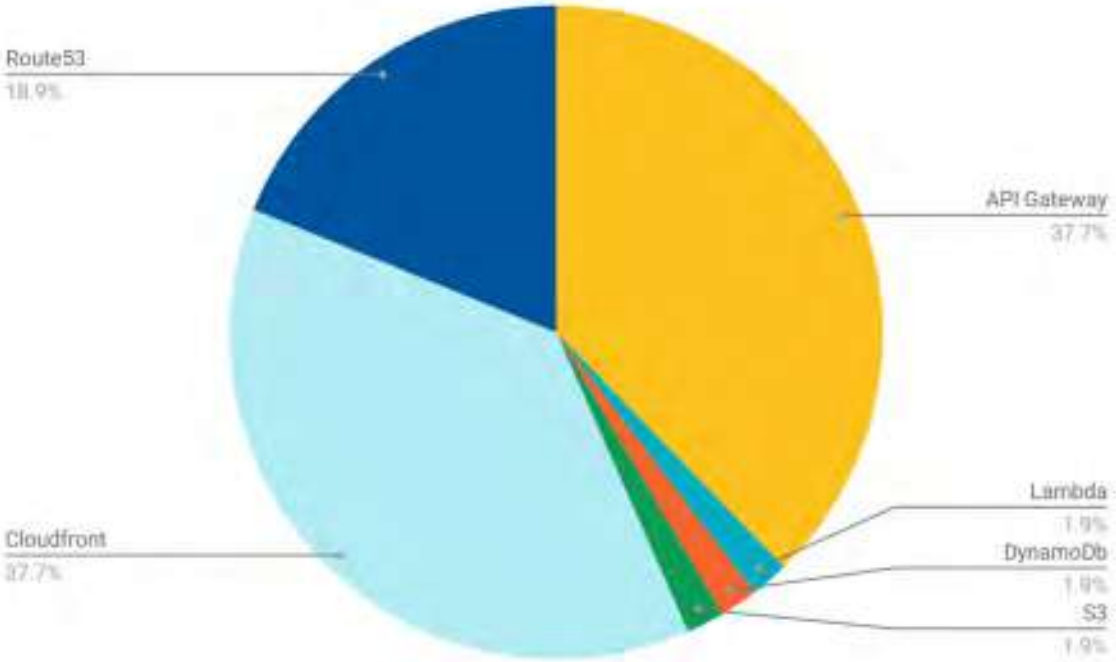
7.2K Total accounts

8.5K Personalized websites

20M Monthly entries



Costs



145 EUR

TOTAL MONTHLY COST
Excluding monitoring and such.

unless

Thank you - any questions?

sander@unless.com

API Gateway

⟶ Details

Define RESTful API endpoints

Add/remove/modify headers
CORS supported

Connect endpoints to Lambda functions

Custom domain (api.unless.com)

IAM authentication supported

Generate SDK for Android, iOS or JavaScript

Lambda functions

→ Details

NodeJs, Java or Python

Pay per 100ms usage

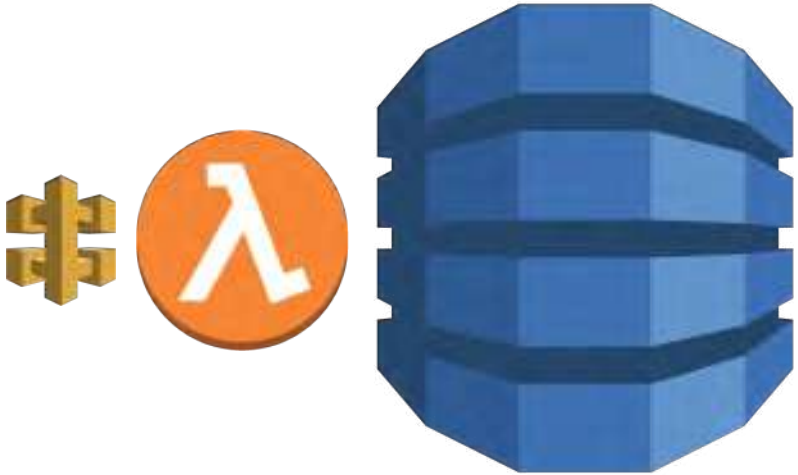
Price depends on memory allocation

Free tier

IAM authentication supported

Connect to events in AWS

DynamoDb



⟶ Details

NoSQL service

Single digit ms latency

API Gateway -> Lambda -> DynamoDb = 100~500 ms

Store live data in S3 and serve through Cloudfront in 30~50 ms

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Cyle Riggs

Live coding: A serverless platform in 100 lines

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Ask the experts:

Yvo van Doorn

Mission Critical Engineer | Schuberg Philis

Simon Heerschap

Sr. Software Architect | Mirabeau

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Introducing

Freek Beemster
Entrepeneur
@ NIAH Executive Search

co-founded the Cloud Architect Alliance in 2014

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Thank You
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