

Experiences in building cloud-native businesses: the Ticketmatic case

Ruben Vermeersch

@rubenv

Hi!

Ruben Vermeersch (Ticketmatic)
@rubenv

Today

Cloud-native: what it means to us & what we gain



ticketmatic

Home

Explore

Pricing

Docs

Contact

Log In

Powerful ticketing & marketing software

The system of choice by leading venues

"We are very pleased about the flexibility and reliability of Ticketmatic, and about the collaboration with the Ticketmatic team."

Kris Mouchaers
Botanique, Brussels

tm Kies tickets - Cactusfestival x Ruben

Secure https://apps.ticketmatic.com/widgets/cf/addtickets?event=60...



KIES AANTAL TICKETS

Dagticket - vrijdag 7 juli Prijs: € 47,00 + € 2,00 fee	<input type="text" value="0"/> +
Dagticket - zaterdag 8 juli Prijs: € 47,00 + € 2,00 fee	<input type="text" value="0"/> +
Dagticket - zondag 9 juli Prijs: € 47,00 + € 2,00 fee	<input type="text" value="0"/> +
Combiticket - vrijdag 7 / zaterdag 8 juli Prijs: € 80,00 + € 2,00 fee	<input type="text" value="0"/> +
Combiticket - zaterdag 8 / zondag 9 juli Prijs: € 80,00 + € 2,00 fee	<input type="text" value="0"/> +
Combiticket - vrijdag 7 & zondag 9 juli Prijs: € 80,00 + € 2,00 fee	<input type="text" value="0"/> +
Weekendticket - vrijdag 7 / zaterdag 8 / zondag 9 juli Prijs: € 105,00 + € 2,00 fee	<input type="text" value="0"/> +
Campingticket Prijs: € 13,00 + € 2,00 fee	<input type="text" value="0"/> +

◀ Vorige Volgende ▶

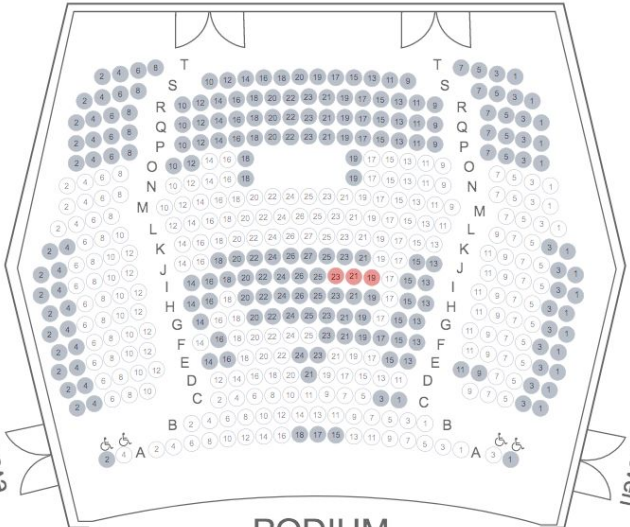
tm Plaatsen - CC Leopoldsburg x Ruben

Secure https://apps.ticketmatic.com/widgets/cc_leopoldsburg/addtic...

Klik op een lege plaats op het zaalplan om de geselecteerde plaatsen te verplaatsen.

?
+
-

even oneven



even oneven

PODIUM

◀ Vorige Volgende ▶

tm Order detail - Ticketmatic x Ruben

Secure https://apps.ticketmatic.com/#/orders/834409

tm CoreOS Fest Theater Contacts Orders Events Settings Help center Support Ruben

< Order #834409 - Web - Rob Doe 17 mei 2017 20:10:38 Actions Log E-mail Print

Tickets (19) List (19) Bundles (3) Add products Add tickets Add bundles

Jeugdtheaterserie
€ 37,50 - 5 tickets

Rob Doe 984984

zo 05/11/2017 15:00 - Het Laagland	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 6 - Stoel 11	€ 7,50
vr 29/12/2017 15:30 - TG Graasland	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 6 - Stoel 12	€ 7,50
vr 12/01/2018 19:30 - Beumer & Drost	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 10	€ 7,50
zo 04/03/2018 15:00 - Theater WEI	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 11	€ 7,50
za 31/03/2018 19:00 - Wie Walvis	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 12	€ 7,50

Jeugdtheaterserie
€ 37,50 - 5 tickets

Alice Black 919849


zo 05/11/2017 15:00 - Het Laagland	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 6 - Stoel 12	€ 7,50
vr 29/12/2017 15:30 - TG Graasland	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 6 - Stoel 11	€ 7,50
vr 12/01/2018 19:30 - Beumer & Drost	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 11	€ 7,50
zo 04/03/2018 15:00 - Theater WEI	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 9	€ 7,50
za 31/03/2018 19:00 - Wie Walvis	Rang 1 - Jeugdtheaterserie XL (volwassene) - Rij 5 - Stoel 11	€ 7,50

Jeugdtheaterserie
€ 27,50 - 5 tickets

Ricky Bobby 984983


zo 05/11/2017 15:00 - Het Laagland	Rang 1 - Jeugdtheaterserie XL (kind) - Rij 6 - Stoel 10	€ 5,50
vr 29/12/2017 15:30 - TG Graasland	Rang 1 - Jeugdtheaterserie XL (kind) - Rij 6 - Stoel 10	€ 5,50
vr 12/01/2018 19:30 - Beumer & Drost	Rang 1 - Jeugdtheaterserie XL (kind) - Rij 5 - Stoel 12	€ 5,50
zo 04/03/2018 15:00 - Theater WEI	Rang 1 - Jeugdtheaterserie XL	€ 5,50

Rob Doe id [Edit](#)

 Main street 1
6548 AW Halperdam
Nederland [\(Show on map\)](#)
bobdoe@example.com

Payment & delivery

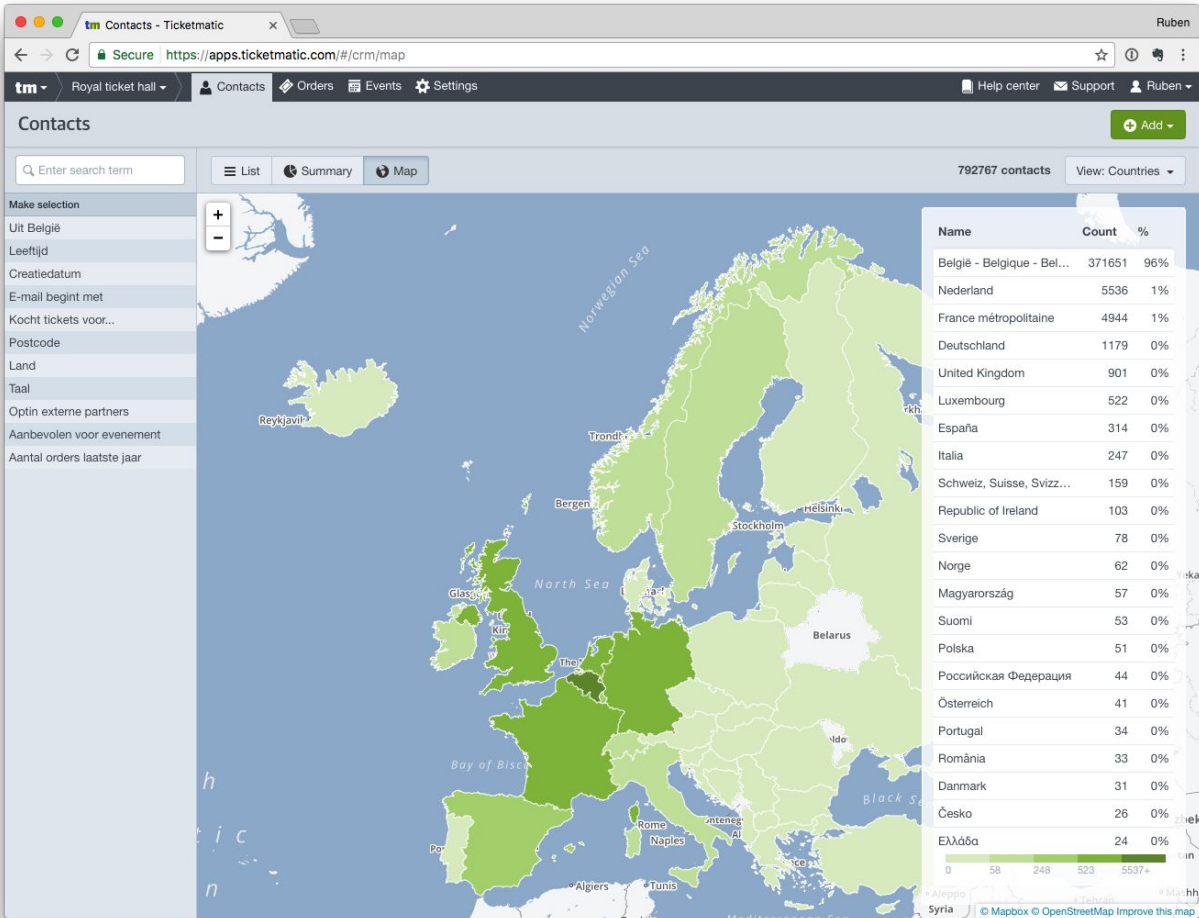
Payment	iDeal
Delivery	E-ticket(s)
Delivery status	Delivered

 **€ 217,00 paid**

Total	€ 217,00
Already paid	€ 217,00

Custom fields [Edit](#)

Opmerking



tm Seating plan - Ticketmatic x Ruben

Secure <https://apps.ticketmatic.com/#/settings/seatplans/10495/zone/1>

tm - Toneelhuis - Contacts - Orders - Events - Settings - Translate - Help center - Support - Ruben

← Edit seating plan: Bourla TM3 Published In use Save

○ Layout
○ Seats
● Ranks
○ Priorities
○ Seat description
○ Lock templates

● (407 - 44%) ● (85 - 9%) ● (304 - 33%) ● (0 - 0%) ● (0 - 0%) ● (135 - 15%) ● (0 - 0%) ● (0 - 0%)

Just a (big) web app!

Cloud Native?

Good practices for modern software

Orchestration

Packaging

Management

Cloud Native Computing Foundation

Cloud native computing uses an open source software stack to be:

- **Containerized.** Each part (applications, processes, etc) is packaged in its own container. This facilitates reproducibility, transparency, and resource isolation.
- **Dynamically orchestrated.** Containers are actively scheduled and managed to optimize resource utilization.
- **Microservices oriented.** Applications are segmented into microservices. This significantly increases the overall agility and maintainability of applications.

<https://www.cncf.io/>

Move faster + be more flexible

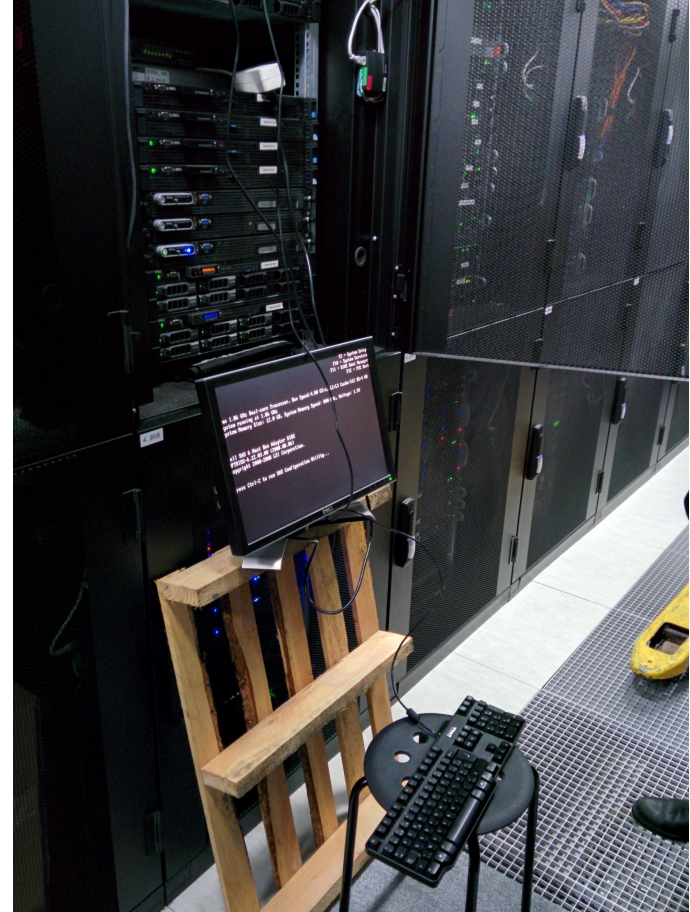
Nostalgia!

Infrastructure
Applications

Memory lane

Real hardware in data centers

Applications provisioned manually



Memory lane (2)

Somebody else fixes the hardware

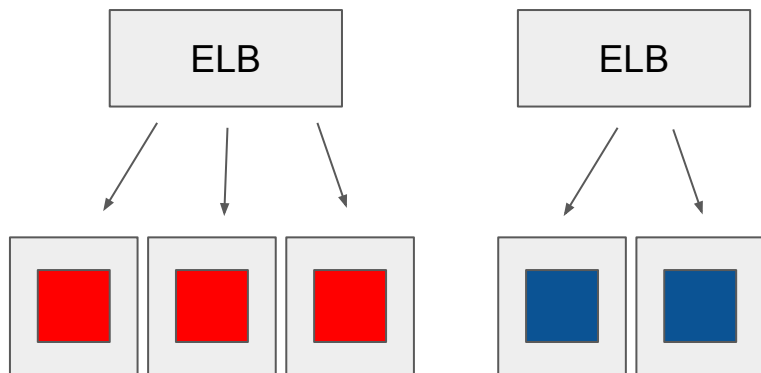
Even more machines to manage!



Memory lane (2)

Somebody else fixes the hardware

Even more machines to manage!



State of the art

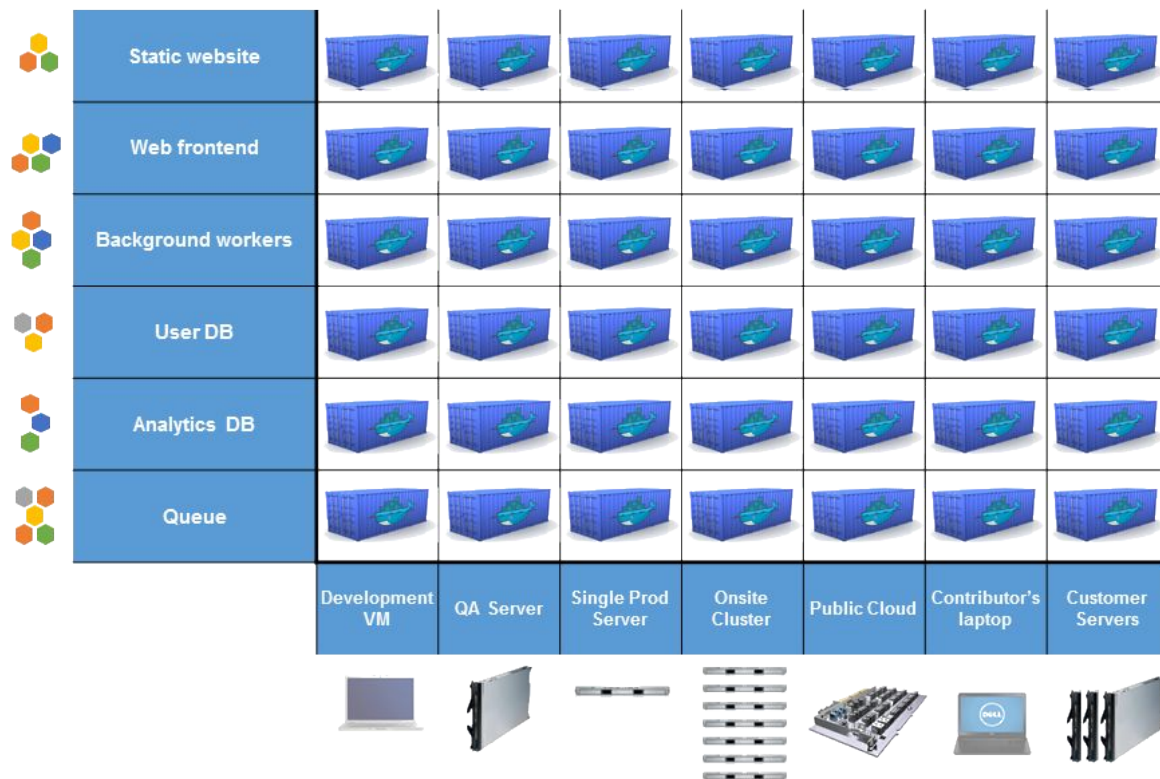
Elastic machines (lots of them)

Load balancers everywhere

Baking whole machine images

Mismatch between environments

Docker to the rescue!



Or not quite...

Deployment?

Multiple machines?

Orchestration?

Just a packaging format, still all manual operations!

Kubernetes

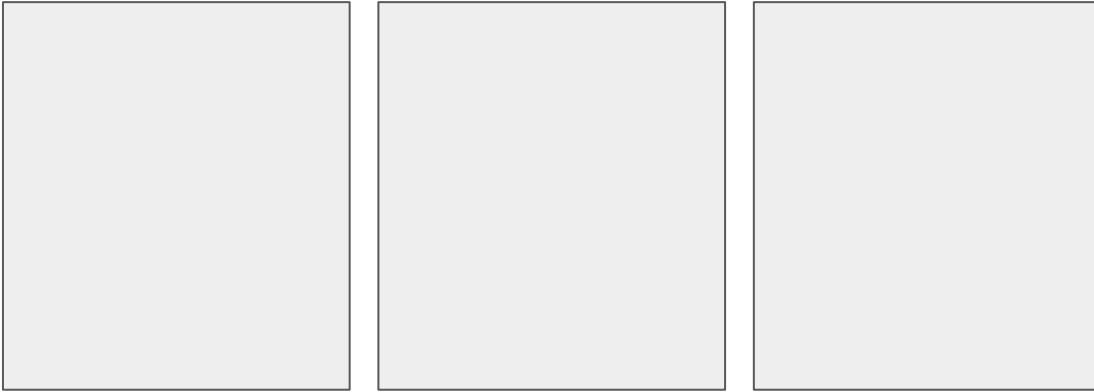
Open-source cluster infrastructure

Based on the experience at Google

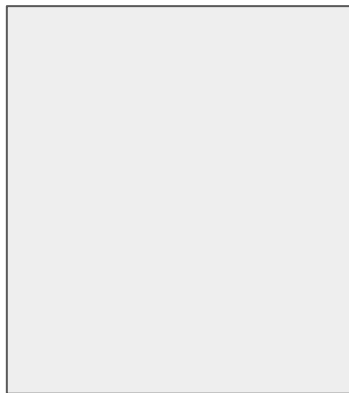
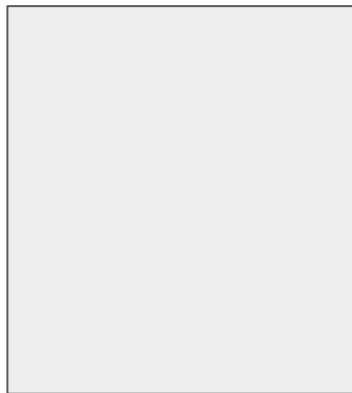
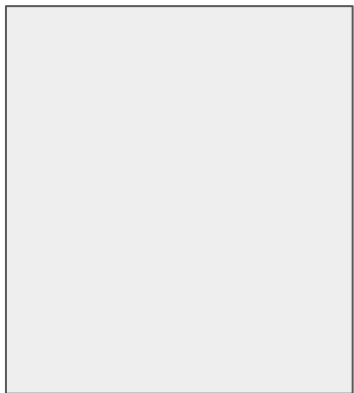
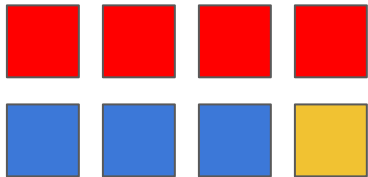


<https://kubernetes.io/>

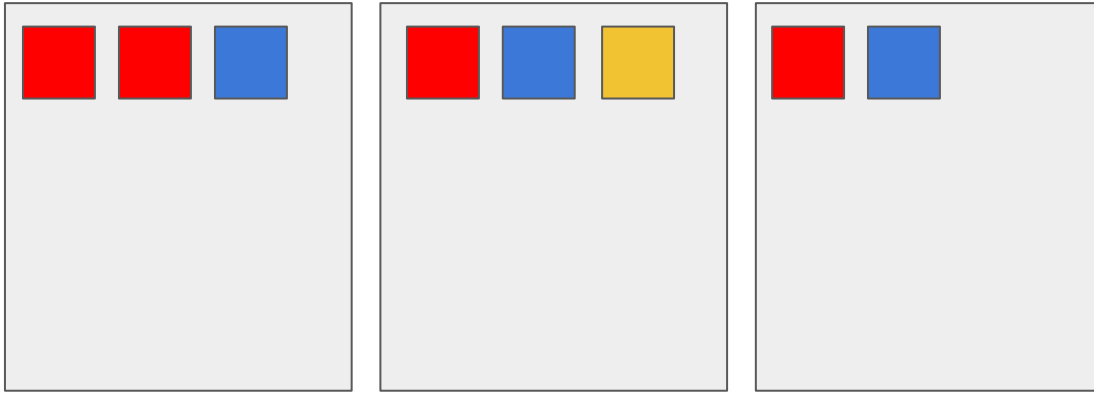
Kubernetes



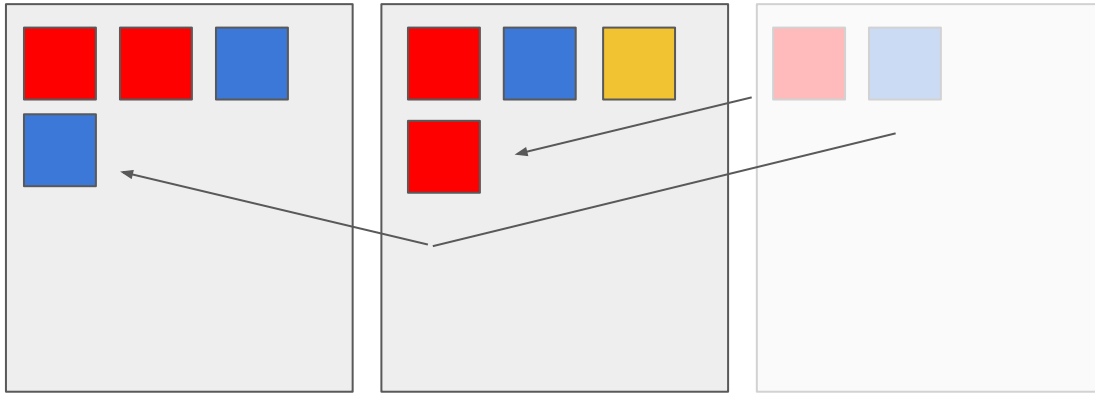
Kubernetes



Kubernetes



Kubernetes



```
Terminal x
apiVersion: apps/v1beta2
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: nginx:1.7.9
          ports:
            - containerPort: 80
~
~
deployment.yaml 19,1 ALL
sendai#0 0:bash*
```

Gains

Increased density (lower cost)

Automated orchestration (declarative!)

Portability

Principle:
Operations should be automated

Micro-services

Chop it up into pieces... or not!

Balance cohesion with complexity

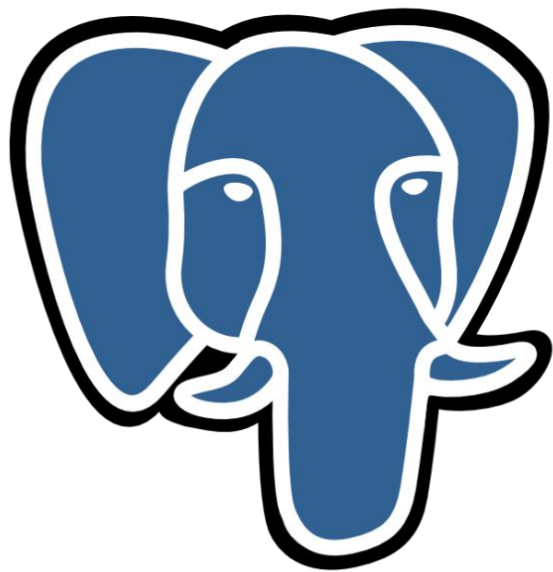
Split at the edges of scaling, when needed

Cloud Native!

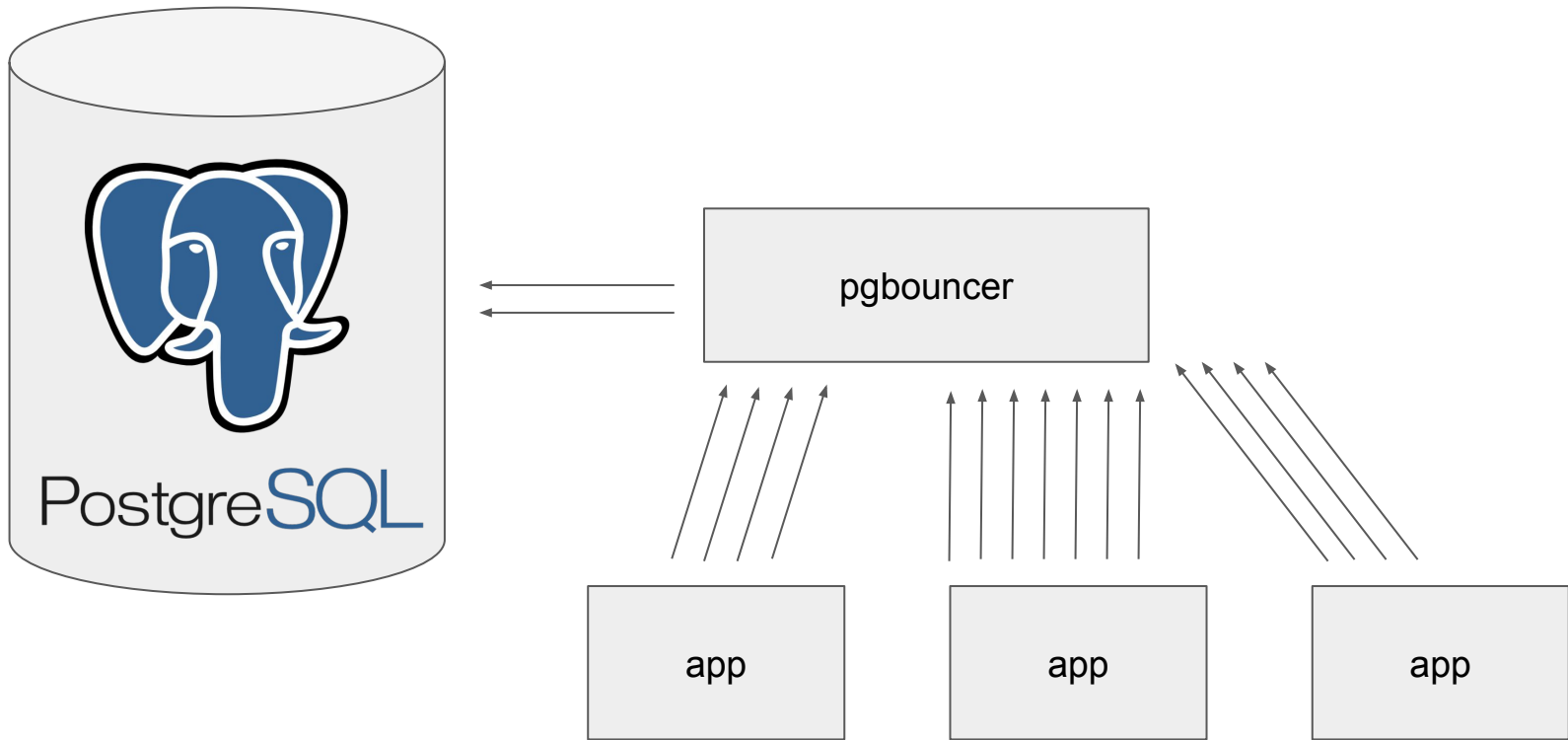
More than configuration management

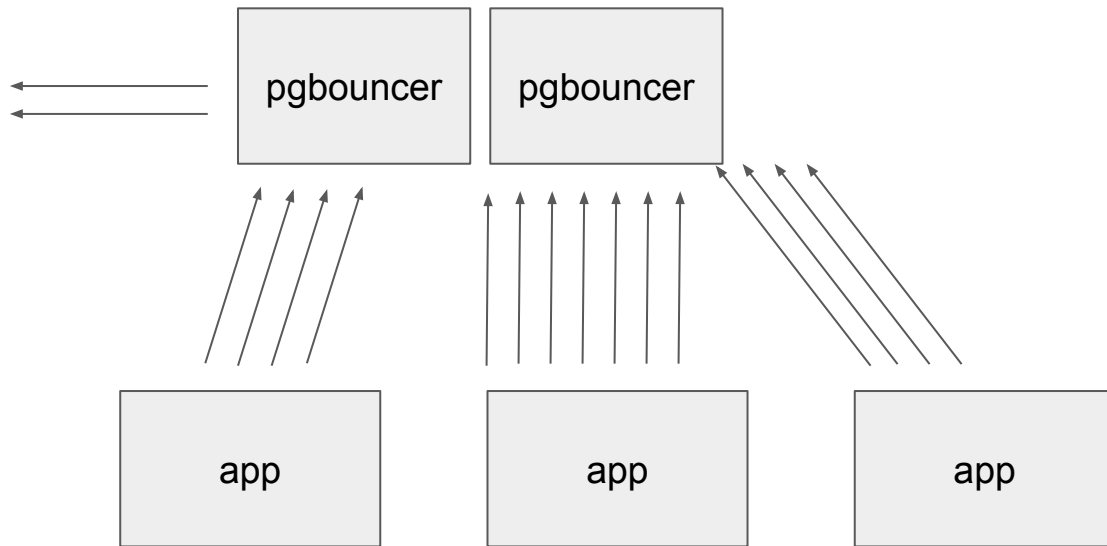
Also an API!

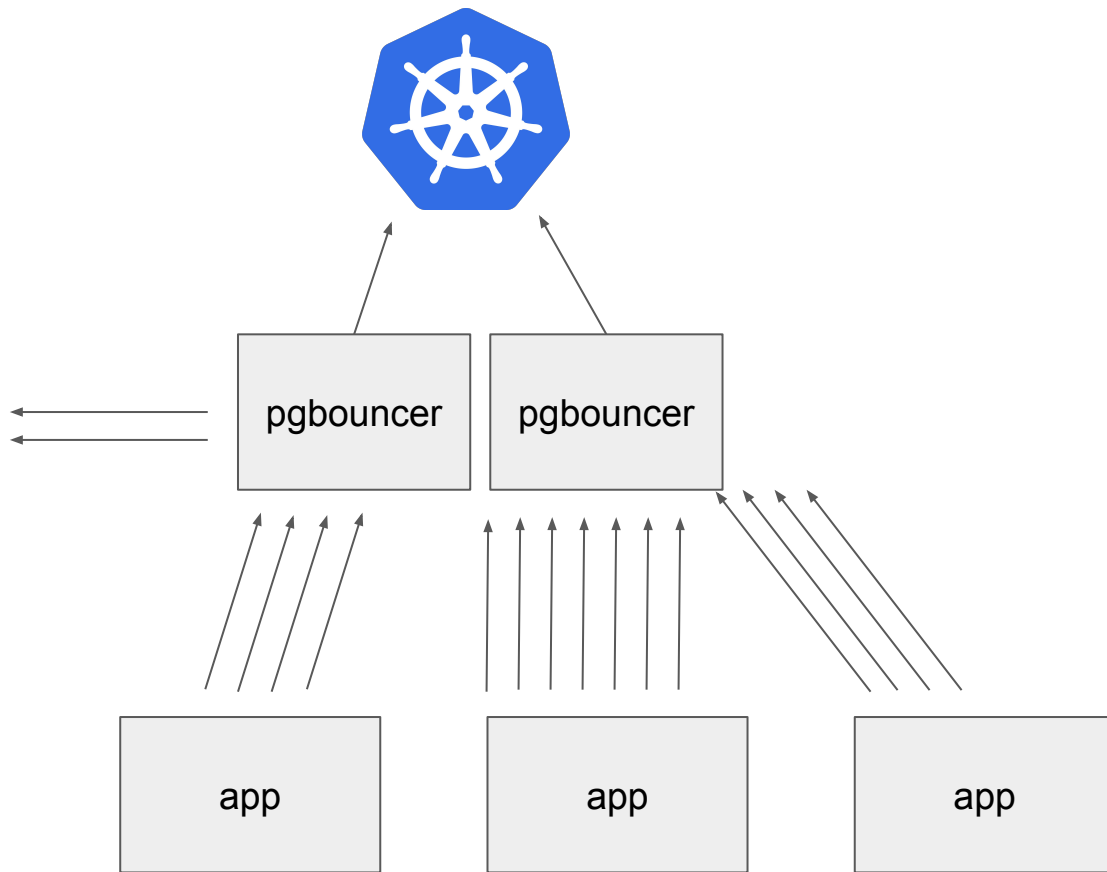
Interaction between application and infrastructure



PostgreSQL







Principle:

Applications interact with infrastructure

Prometheus

Prometheus

Open-source monitoring platform

Originally developed by Soundcloud



<https://prometheus.io/>

Measuring = knowing

Reactive applications

Use application metrics to interact with infrastructure

A new role for operations

In the past: reactive grunt work

Cloud native way: gather insights, codify them

Principle:
Everybody is operations,
nobody is operations

Rounding up

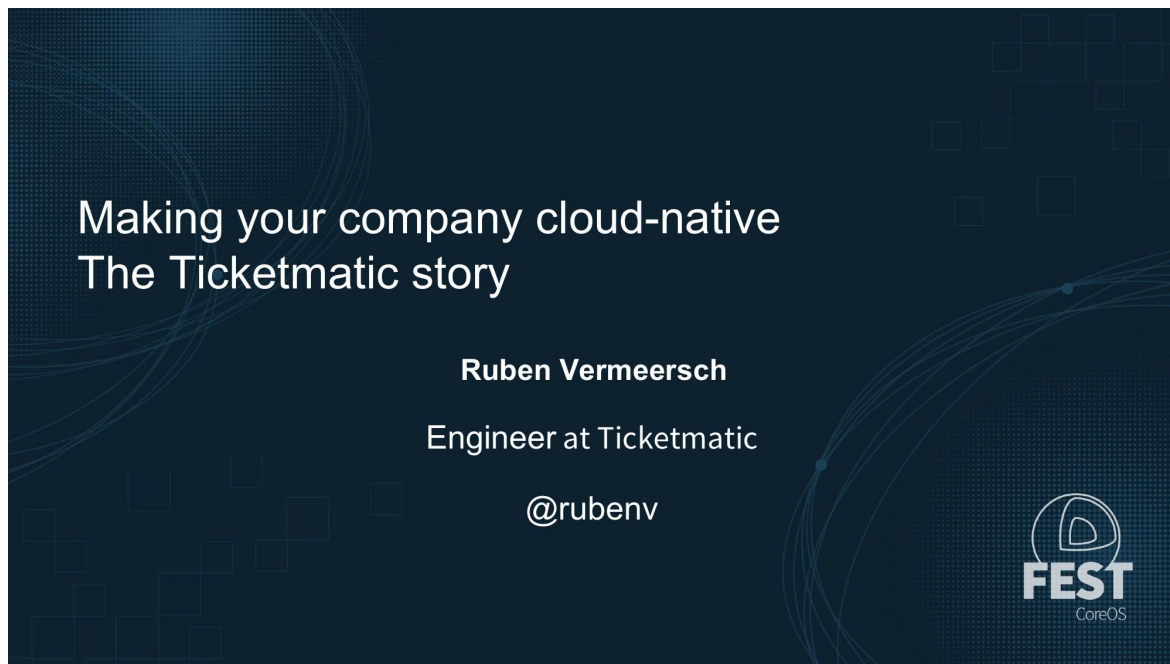
Cloud Native

New way of thinking about infrastructure

Application and infrastructure work together

New role for operations

More?



Making your company cloud-native
The Ticketmatic story

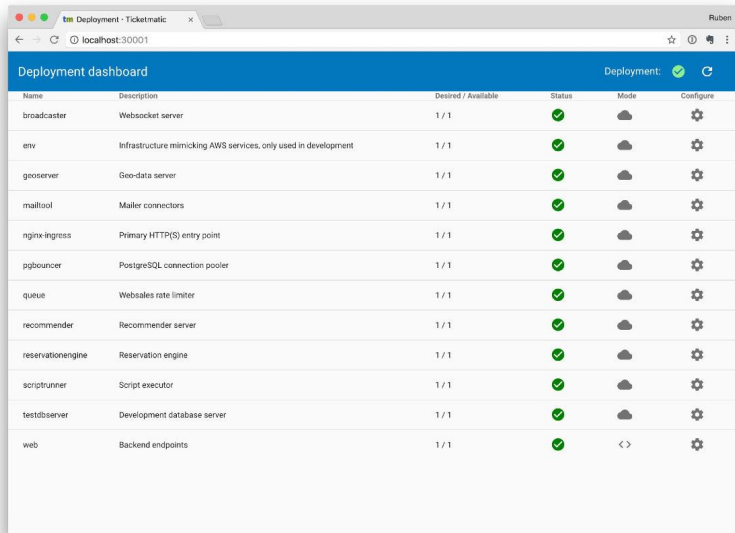
Ruben Vermeersch
Engineer at Ticketmatic
@rubenv

FEST
CoreOS

The slide features a dark blue background with a grid of small squares and several glowing, curved lines that sweep across the frame. The text is centered and presented in a clean, white sans-serif font.

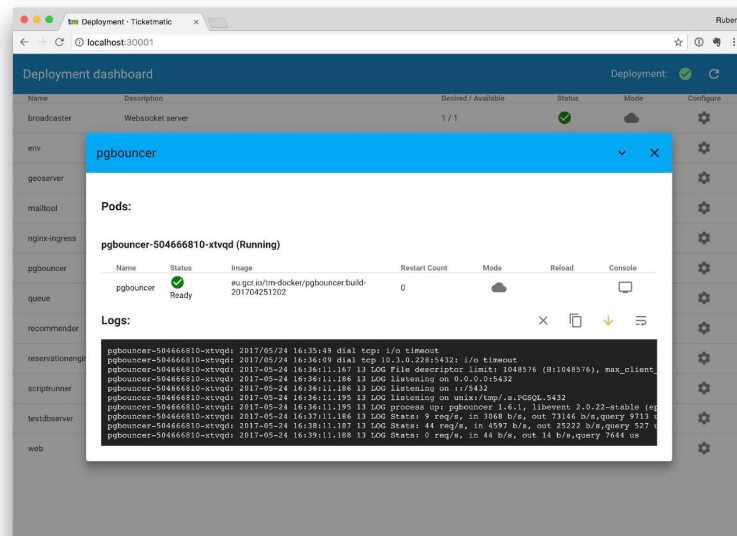
CoreOS Fest 2017 (San Francisco) talk - <https://rocketeer.be/>

More?



The screenshot shows a web browser window with the URL localhost:30001. The page displays a 'Deployment dashboard' with a table of services. The 'Deployment' status is shown as a green checkmark. The table lists various services with their names, descriptions, desired/available counts, status, mode, and configuration options.

Name	Description	Desired / Available	Status	Mode	Configure
broadcaster	Websocket server	1 / 1	✓	☁	⚙
env	Infrastructure mimicking AWS services, only used in development	1 / 1	✓	☁	⚙
gooseserver	Geo-data server	1 / 1	✓	☁	⚙
mailtool	Mailer connectors	1 / 1	✓	☁	⚙
nginx-ingress	Primary HTTP(S) entry point	1 / 1	✓	☁	⚙
pgbouncer	PostgreSQL connection pooler	1 / 1	✓	☁	⚙
queue	Websales rate limiter	1 / 1	✓	☁	⚙
recommender	Recommender server	1 / 1	✓	☁	⚙
reservationengine	Reservation engine	1 / 1	✓	☁	⚙
scriptrunner	Script executor	1 / 1	✓	☁	⚙
testdbserver	Development database server	1 / 1	✓	☁	⚙
web	Backend endpoints	1 / 1	✓	<>	⚙



The screenshot shows the same 'Deployment dashboard' as the previous image, but with a modal window open for the 'pgbouncer' service. The modal displays 'Pods:' and 'pgbouncer-504666810-xtvqd (Running)'. It shows a table with columns for Name, Status, Image, Restart Count, Mode, Reload, and Console. Below the table, there is a 'Logs:' section with a scrollable log output.

Name	Status	Image	Restart Count	Mode	Reload	Console
pgbouncer	Ready	eu.gcr.io/fm-bocker/pgbouncer-build-201705251022	0	☁		📄

Logs:

```
pgbouncer-504666810-xtvqd: 2017/05/24 16:35:49 dial tcp: i/o timeout
pgbouncer-504666810-xtvqd: 2017/05/24 16:36:09 dial tcp: i/o timeout
pgbouncer-504666810-xtvqd: 2017-05-24 16:36:11.16713 LOG File descriptor limit: 1048576 (8:1048576), max_client
pgbouncer-504666810-xtvqd: 2017-05-24 16:36:11.18613 LOG listening on 0.0.0.0:5432
pgbouncer-504666810-xtvqd: 2017-05-24 16:36:11.19513 LOG listening on 11.5432
pgbouncer-504666810-xtvqd: 2017-05-24 16:36:11.19513 LOG listening on unix:/tmp/.PGSQL_5432
pgbouncer-504666810-xtvqd: 2017-05-24 16:36:11.19513 LOG process up: pgbouncer 1.6.1, libevent 2.0.22-stable (q
pgbouncer-504666810-xtvqd: 2017-05-24 16:37:11.18613 LOG Stats: 9 req/s, in 3068 b/s, out 73146 b/s, query 9713
pgbouncer-504666810-xtvqd: 2017-05-24 16:38:11.18713 LOG Stats: 4 req/s, in 4997 b/s, out 25222 b/s, query 527
pgbouncer-504666810-xtvqd: 2017-05-24 16:39:11.18813 LOG Stats: 0 req/s, in 48 b/s, out 14 b/s, query 2644 up
```

CoreOS Fest 2017 (San Francisco) talk - <https://rocketeer.be/>

Thanks!

Ruben Vermeersch
@rubenv

Slides (soon): <https://rocketeer.be/>
Always looking for great people at Ticketmatic!