

En skyrigg for kontinuerlige leveranser



@steinim

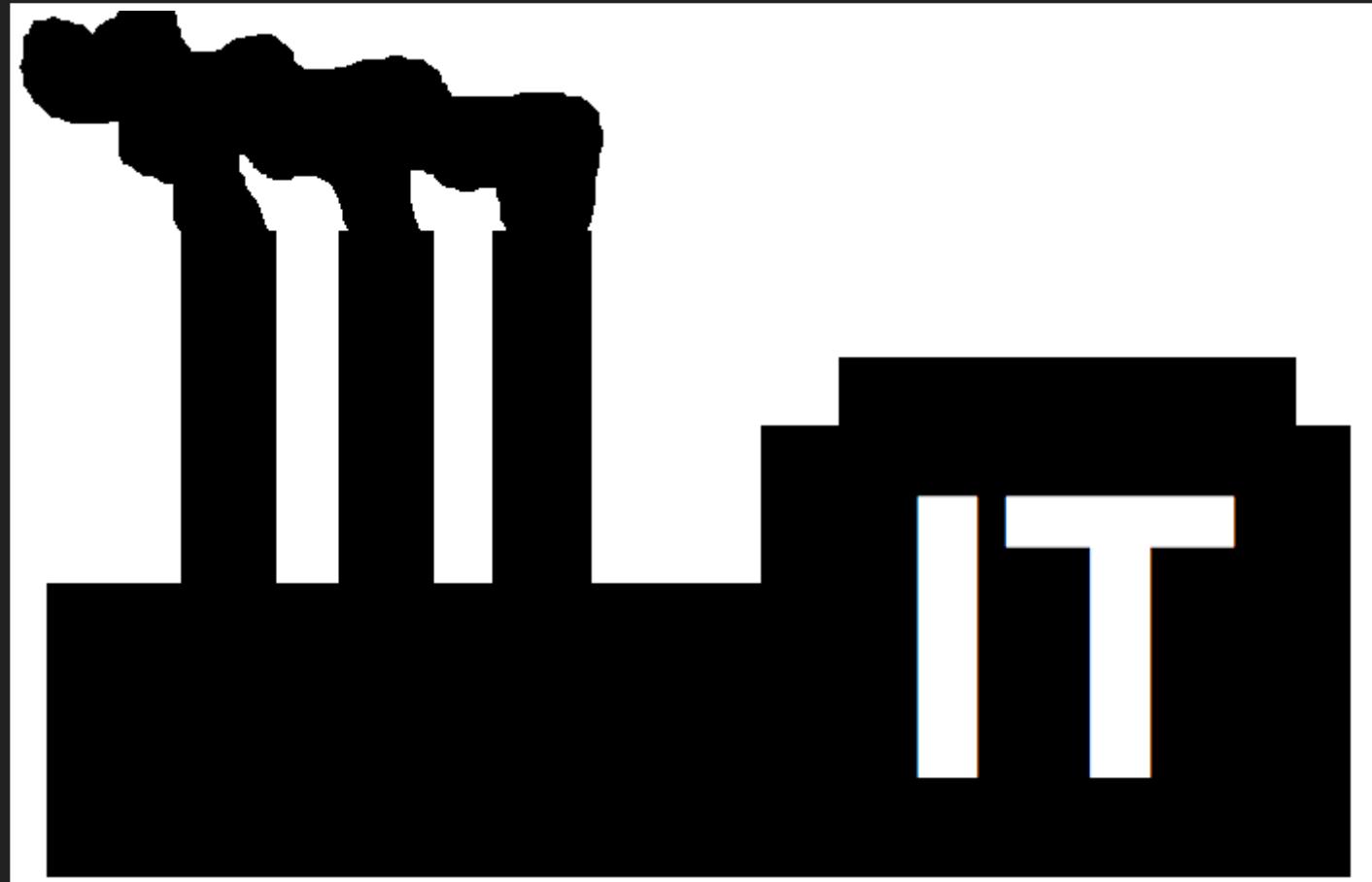
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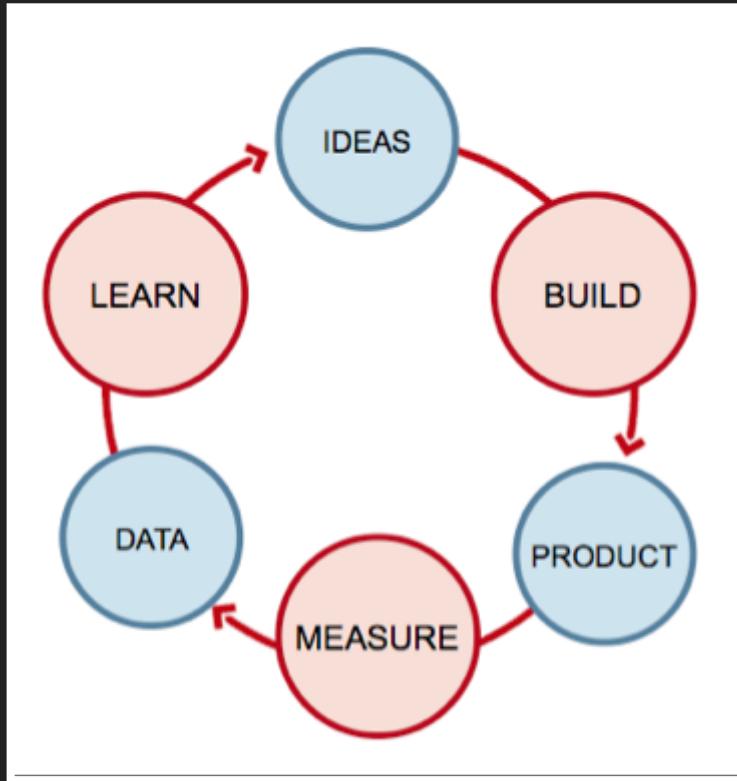
Sky-tjenester



Hvorfor?

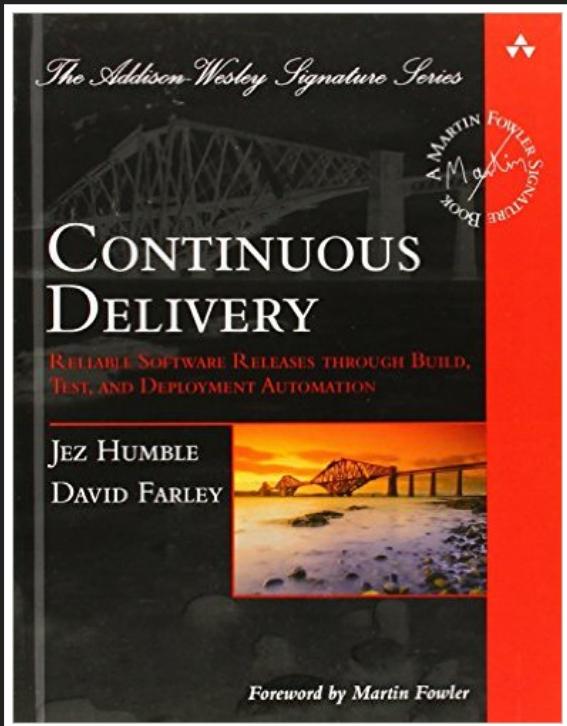


The Lean Startup



Lean Startup ♥ Kontinuerlige leveranser

Hva er egentlig
Kontinuerlige leveranser?



...a software development discipline where you build software in such a way that the software can be released to production at any time.

Martin Fowler, <https://martinfowler.com/bliki/ContinuousDelivery.html>

Continuous delivery is about putting the release schedule in the hands of the business, not in the hands of IT.

Jez Humble, <https://continuousdelivery.com/>

Kontinuerlige leveranser ❤ DevOps

Hva er egentlig DevOps?

A black and white photograph of Werner Vogels, a middle-aged man with a beard and receding hairline, smiling slightly. He is wearing a dark turtleneck sweater. The background is blurred, showing what appears to be foliage or trees.

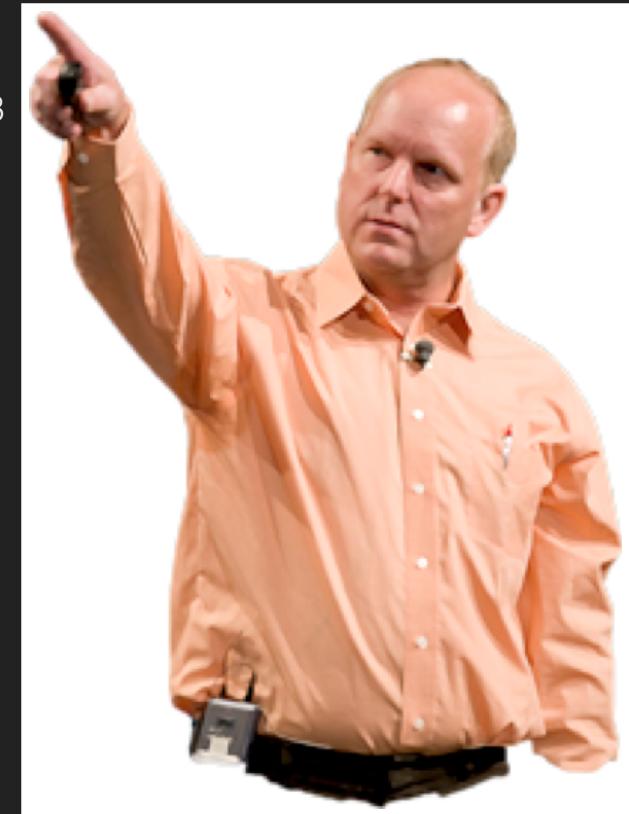
You build it, you run it!

Werner Vogels, CTO @ Amazon

ed the Turing test

Developers carry beepers

Kent Beck at a DevOps Norway Meetup in 2013



DevOps → NoOps/JustDevs?

DevOps ♥ Sky

Målsetningene våre

- Smidige
- Tilpasningsdyktige
- Raske
- Robuste
- Autonome

Vi ønsket et fokusskifte

Utvikling

Drift



Produktutvikling

Forvaltning

Våre viktigste prinsipper

Enkelhet og automatisering

*uten at det skal gå ut over
tilgjengelighet, stabilitet, og sikkerhet*

Løsningen

- Kryssfunksjonelle team inkludert forretning
(Build → Measure → Learn)
- DevOps og kontinuerlige leveranser
- You build it, you run it
- Sky, Sky, Sky!

Våre prinsipper for skybruk

- IaaS → driftede skytjenester og PaaS
- Automatiser mot API-er
(Ingen klikking i GUI eller fikling i prod!)
- Kjøp/bruk tjenester istedenfor å lage de selv
- Bruk offentlig sky. Ikke privat.

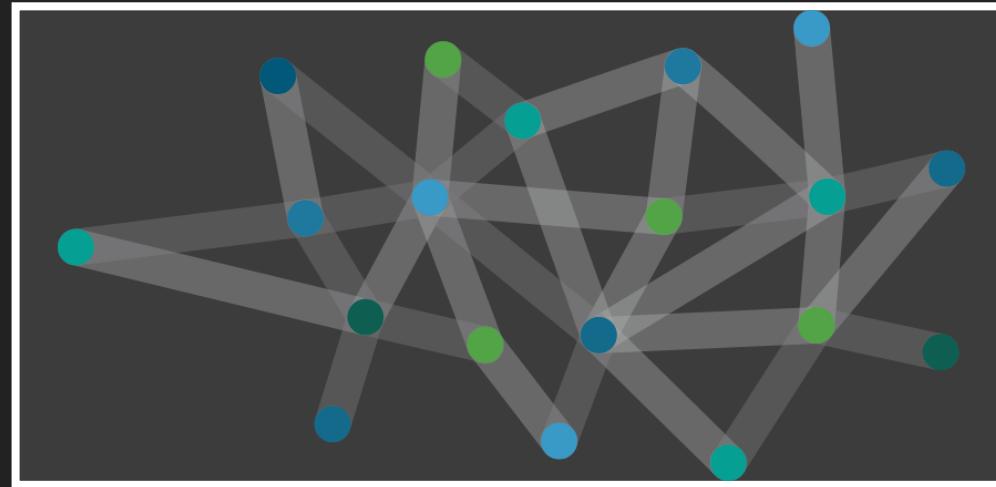
An aerial photograph of the Pentagon building, a large five-sided military headquarters located in Arlington, Virginia. The building is surrounded by extensive parking lots filled with cars and a complex network of roads and highways. A dark rectangular overlay is positioned in the upper portion of the image, containing the quote.

We decided we needed to buy innovation

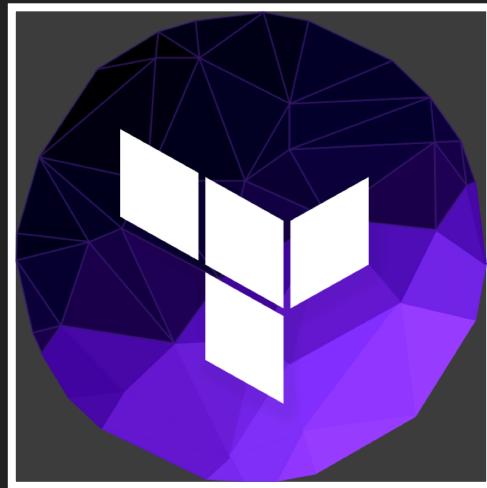
David B. Gleason from Chicago, IL - The Pentagon

IaaS

Nettverk



Automatiser!



Infrastruktur som kode

- Dokumenterer (infrastruktur som kode)
- Versjonerer (historikk)
- Sikrer like miljøer (immutable)
- Testbart (kontinuerlig integrasjon)
- Evolusjonært (små endringer gradvis)
- Automatiserer (fjerner det feilbarlige mennesket)

```
resource "aws_vpc" "vpc" {
    cidr_block          = "${var.vpc_cidr}"
    enable_dns_hostnames = true
    tags { Name = "${var.vpc_name}" }
}

resource "aws_route" "internet_access_route" {
    route_table_id      = "${aws_vpc.vpc.main_route_table_id}"
    destination_cidr_block = "0.0.0.0/0"
    gateway_id          = "${aws_internet_gateway.ig.id}"
}

resource "aws_subnet" "subnet" {
    vpc_id              = "${var.vpc_id}"
    count               = "${var.number_of_subnets}"
    cidr_block          = "${lookup(var.cidr_blocks, \"zone_${count.index}\")}"
    availability_zone   = "${lookup(var.zones, \"zone_${count.index}\")}"
    map_public_ip_on_launch = "${var.map_public_ip_on_launch}"

    tags { Name = "${var.name}_subnet_${lookup(var.zones, \"zone_${count.index}\")}" }
}

resource "aws_instance" "instance" {
    ami                  = "${var.ami}"
    instance_type        = "t2.micro"
    key_name             = "${var.key_pair_id}"
    .....
```

vpc (10.0.0.0/16)

eu-central-1a

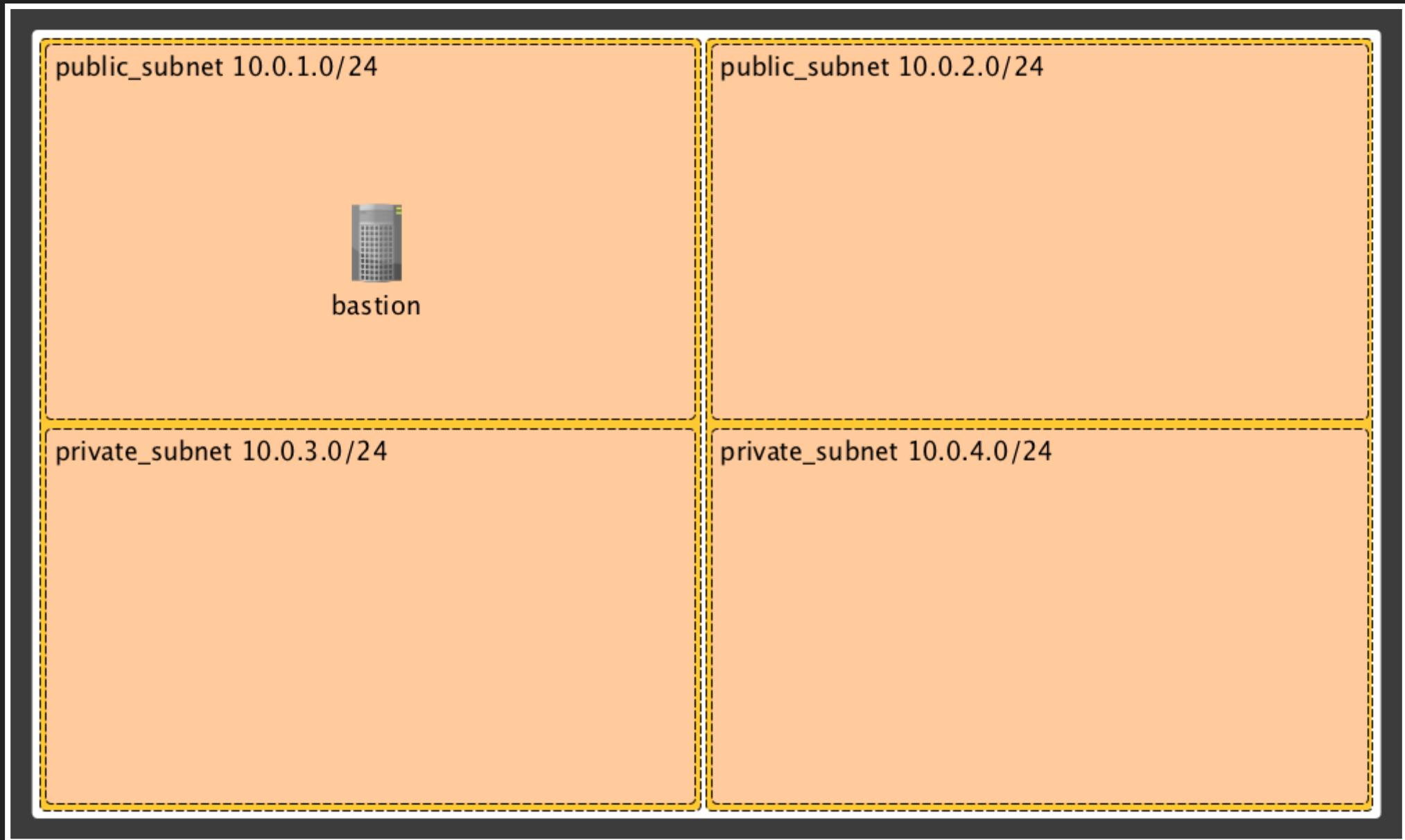
eu-central-1b

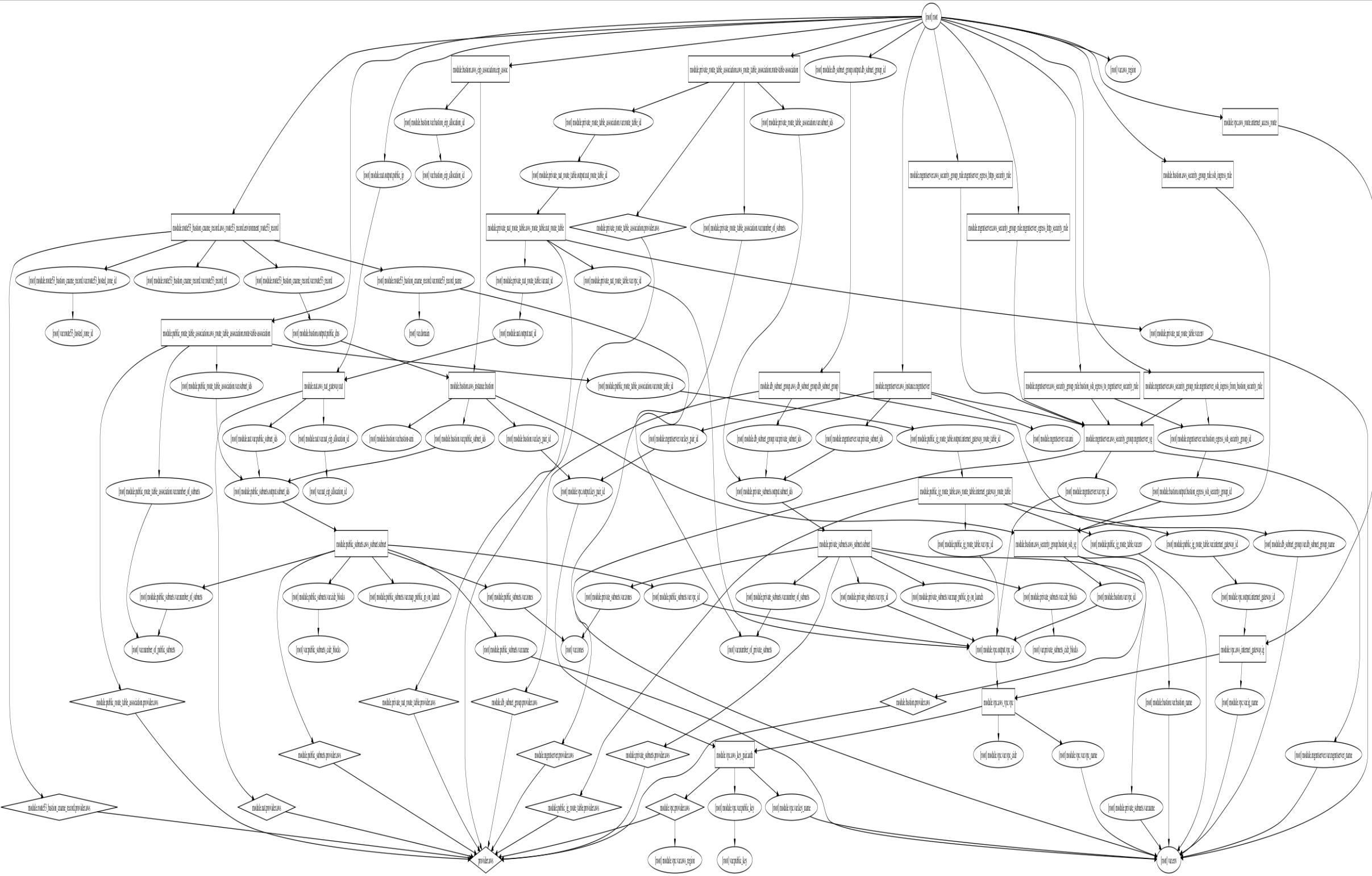
public_subnet 10.0.1.0/24

public_subnet 10.0.2.0/24

private_subnet 10.0.3.0/24

private_subnet 10.0.4.0/24



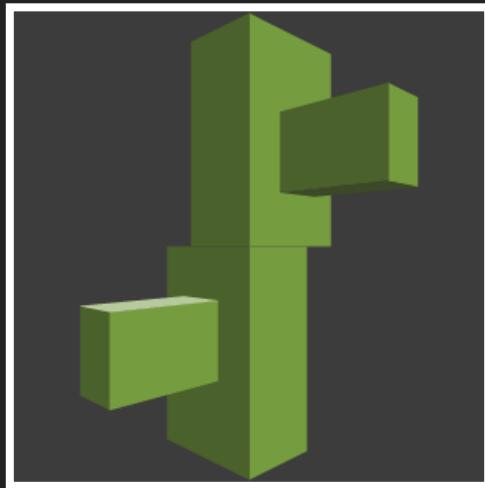


Driftede skytjenester (SaaS)

- RDS (Relational Database Service)
- Route53 (DNS)
- CloudWatch (monitoring, events, logging)
- IAM (tilgangskontroll og sikkerhet)
- S3 (skalerbar lagring)

PaaS

Elastic Beanstalk



Elastic Beanstalk

Easy to begin, Impossible to outgrow

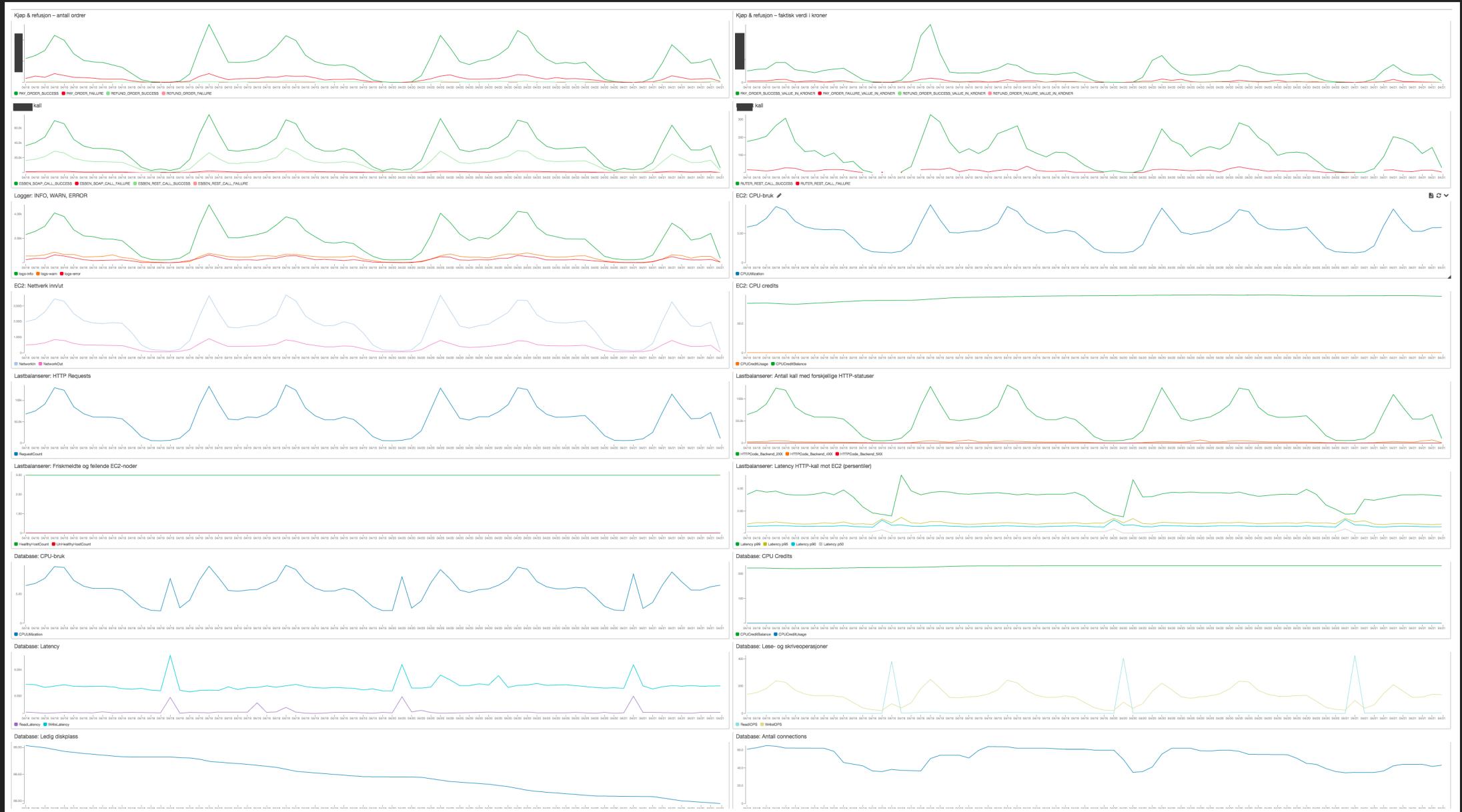
Automatiserer og håndterer:

- konfigurasjon
- deploy
- kapasitet-provisjonering
- lastbalansering
- auto-skalering
- monitorering

Uten ekstra kostnad utover ressursene du forbruker

Monitorering

10.000-vis av ulike metrikker



Andre tjenester

- Panopticon (intern monitørering)
- Pingdom (ekstern monitørering)
- Pagerduty ("vaktteléfono")
- Slack (ChatOps)
- Github (til alt!)
- Travis (byggeserver)
- Pass (hemmeligheter)
- Ansible (konfigurasjonsstyring)

Hva har vi lært?

1 2 3 4 5 6

1. Reduser IaaS til et minimum
2. Bruk driftede skytjenester hvor du kan
3. Bruk PaaS for tjenesteutvikling
4. Automatisering, Automatisering, Automatisering...
5. Monitorering, Monitorering, Monitorering...
6. **Migrering av eksisterende tjenester er det vanskeligste**

Planer for fremtiden

- Skrive om fra "lift and shift" til "cloud native" applikasjoner
- Mikrotjenester passer som hånd i hanske
for hva NSB ønsker å oppnå
- #Serverless?

Hvilke gevinster sitter vi igjen med?

1. Redusert ledetid
2. Smidig forretningsutvikling
3. Fortløpende feilfiksing
4. Prod.-like miljøer on demand
5. Elastisitet og autoskalering
6. Innsikt i alt som skjer
7. Eierskap til det som leveres
8. Ansvaret er plassert der hvor det hører hjemme
9. Færre ting å tenke på
10. Det vanskeligste er skyleverandørens ansvar
11. Høyere medarbeidertilfredshet

The primary value of cloud is to generate competitive advantage

Cloud ... You're Doing it Wrong!, Randy Bias

Cost savings is a side effect

Cloud ... You're Doing it Wrong!, Randy Bias

Thank you!

Slides:

<http://steinim.github.io/slides/frokostseminar-skyrigg-for-kontinuerlige-leveranser/>



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