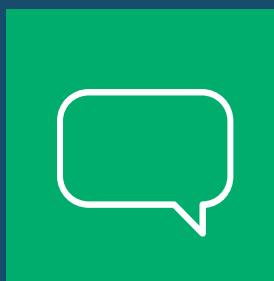
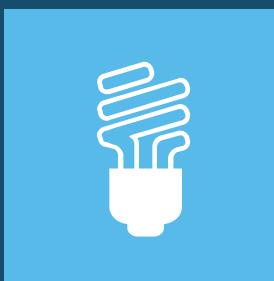
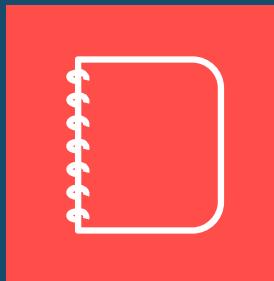
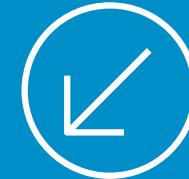




Wat is Azure, en waar moet  
je rekening mee houden?



# RDW Techday 2017



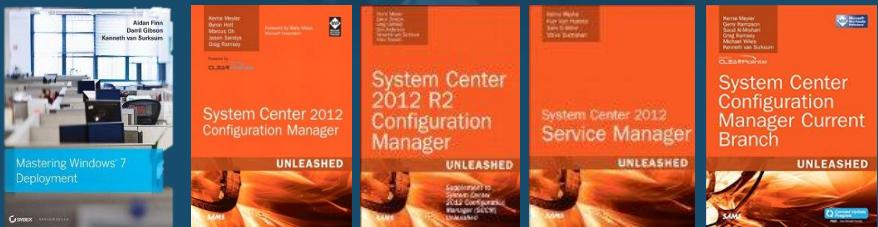
RDW



# Kenneth van Surksum

Managing Consultant at Insight24  
Founder + board member WMUG NL

[ksurksum@insight24.nl](mailto:ksurksum@insight24.nl)



# Waar gaan we het in dit uur over hebben?

- ⌚ Wat is Cloud Computing vanuit het oogpunt van een Infrastructuur Specialist?
- ⌚ Wat is Azure niet?
- ⌚ Wat is Azure dan wel?
- ⌚ Valkuilen



Cloud Computing

# What is Cloud Computing?

**There is no cloud**  
*it's just someone else's computer*

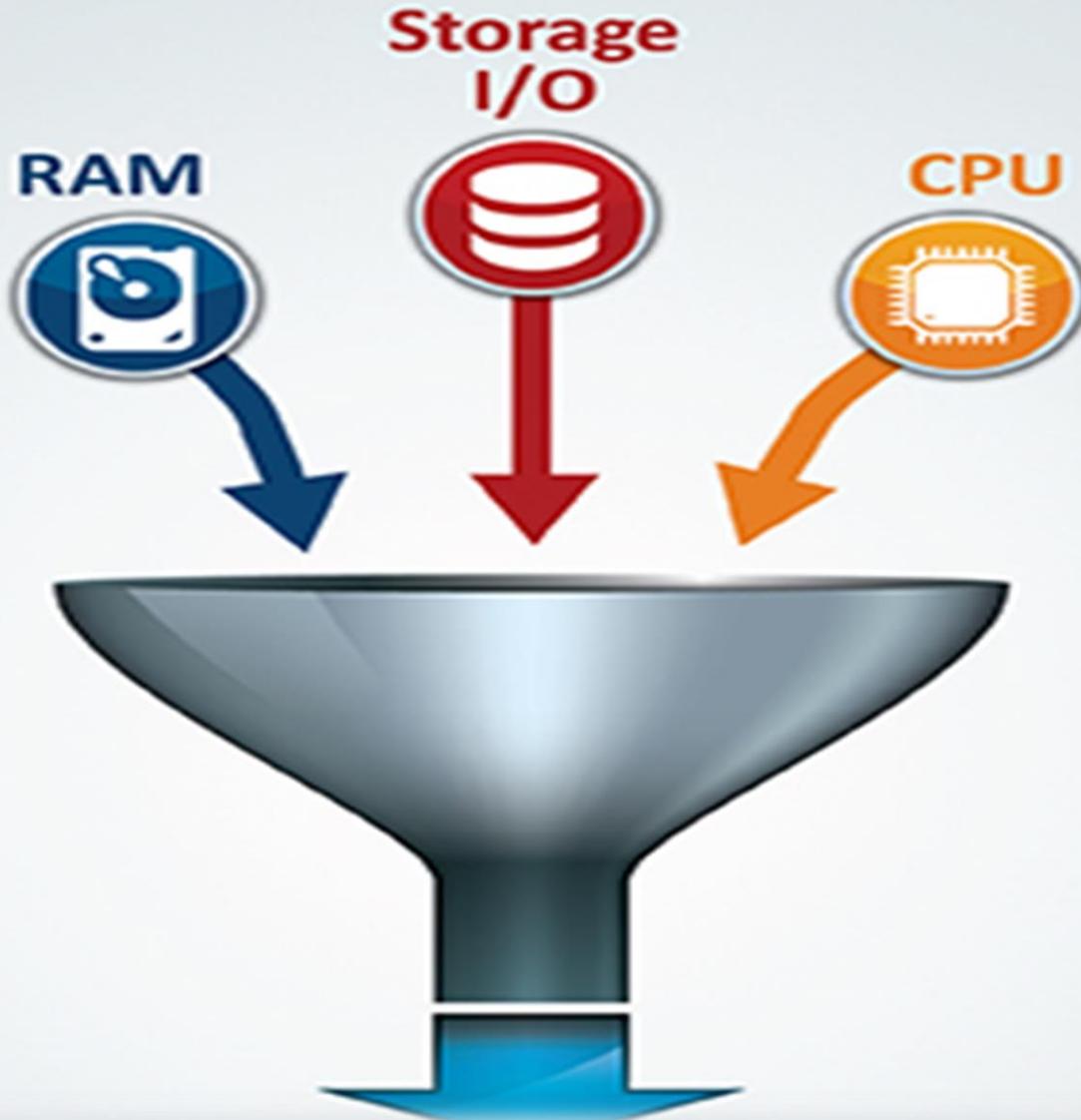




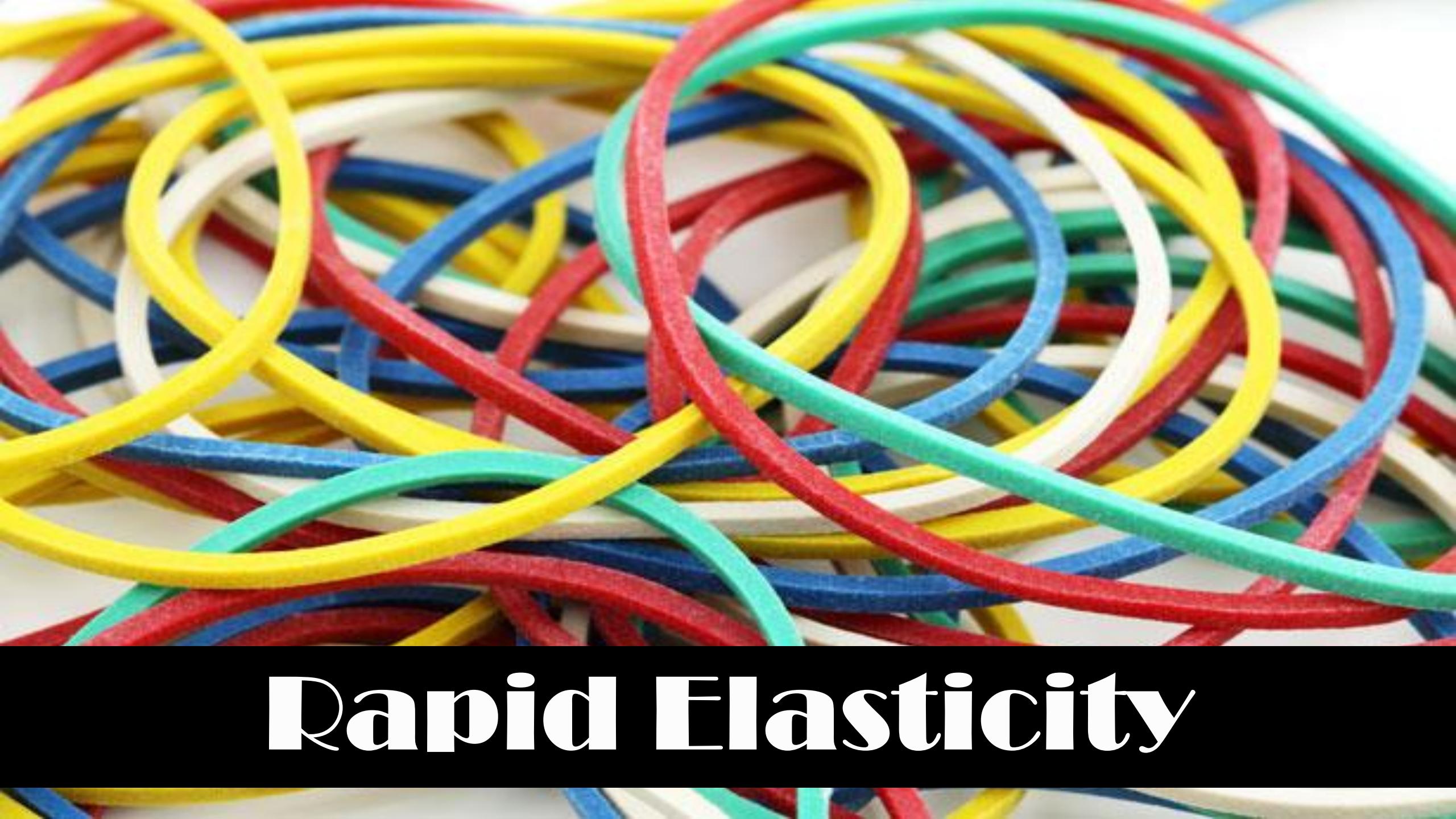
**On demand service**



**Broad Network Access**



# Resource Pooling

A close-up photograph of a large pile of colorful elastic bands, likely rubber bands, in various colors including yellow, red, blue, green, and white. They are tangled and overlapping each other, creating a complex web-like texture.

# Rapid Elasticity



# Measured Service

# Cloud versus Virtualisatie

## Virtualisatie

- ④ Hardware Consolidatie
- ④ Beschikbaarheid van Servers
- ④ Legacy applicaties hosten op moderne hardware

## Cloud

- ④ Schaalbaarheid
- ④ On-demand Capaciteit
- ④ Parallelle workloads
- ④ Self Service
- ④ Dynamische Workloads



**DEVELOPERS**

**DEVELOPERS**

**DEVELOPERS**

**DEVELOPERS**

# Voor- en Nadelen van Cloud

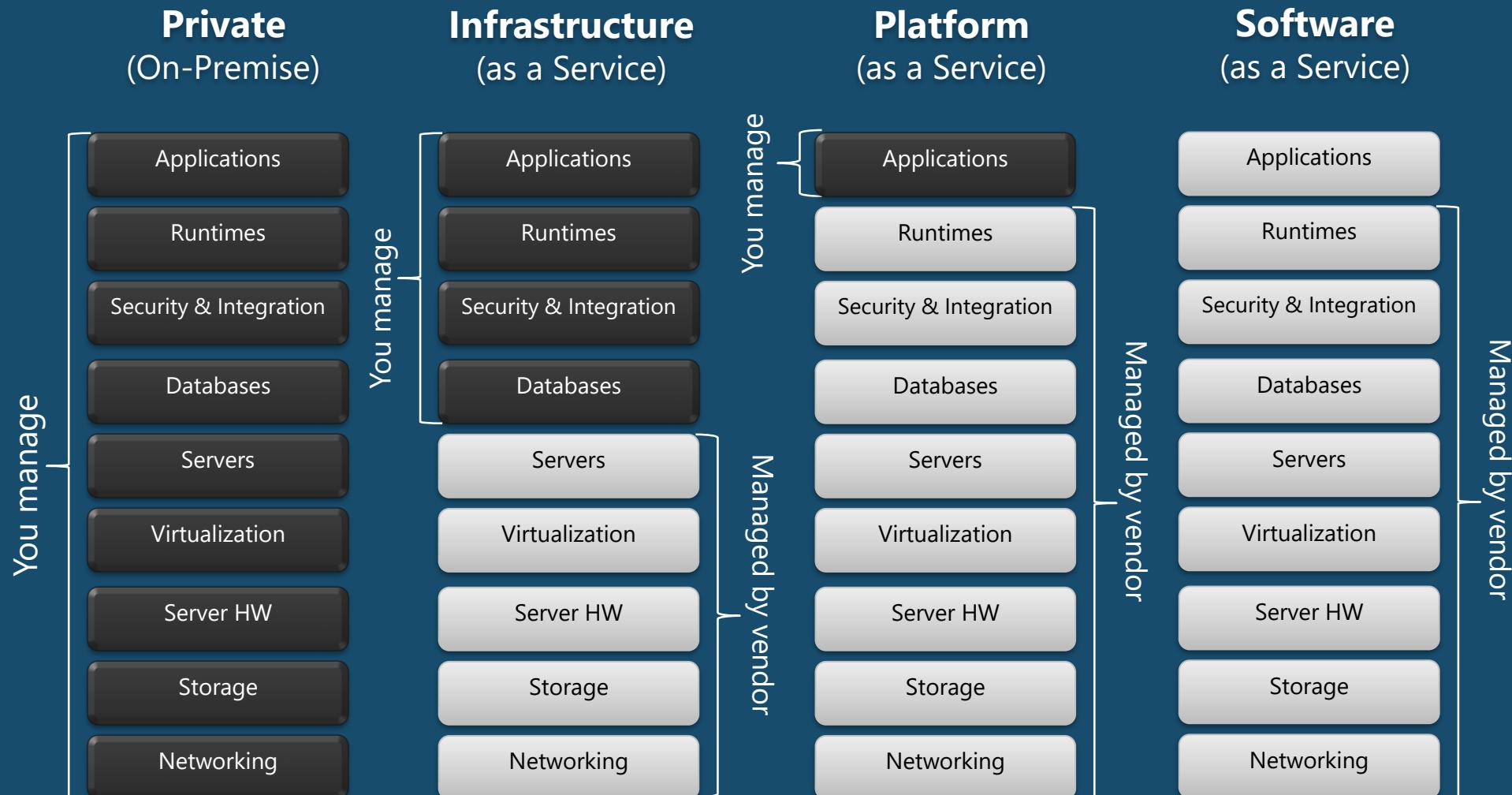
## Voordelen

- Lagere opstart-, en infrastructuur kosten
- Applicaties kunnen makkelijk groeien
- Het is makkelijk en snel om te schalen (scale-up of scale-down)
- Betaal alleen voor wat je gebruikt
- Alles heeft een Service Level Agreements (SLA)
- Ecologisch voordeel (lagere uitstoot van koolstof) omdat veel gebruikers een groot systeem efficiënt delen

## Nadelen

- Hogere lopende bedrijfskosten. Het werken op cloud-systemen kan duurder uitvallen
- Grote afhankelijkheid van dienstverleners. Kunt u problemen snel opgelost krijgen, zelfs met SLA's?
  - Vendor Lock-in? Hoe gemakkelijk kunt u migreren naar een ander systeem of service provider als dat nodig is?
  - Wat gebeurt er als uw leverancier plots beslist om te stoppen met het ondersteunen van een product of systeem wat wordt gebruikt?
- Potentiële privacy en veiligheidsrisico's door waardevolle gegevens op het systeem van iemand anders op een onbekende locatie te plaatsen?
- Als veel mensen migreren naar de cloud, waar ze niet langer vrij zijn om nieuwe dingen te ontwikkelen, wat betekent dat voor de toekomstige ontwikkeling van het internet?
- Afhankelijkheid van een betrouwbare internetverbinding.

# Cloud Service Types

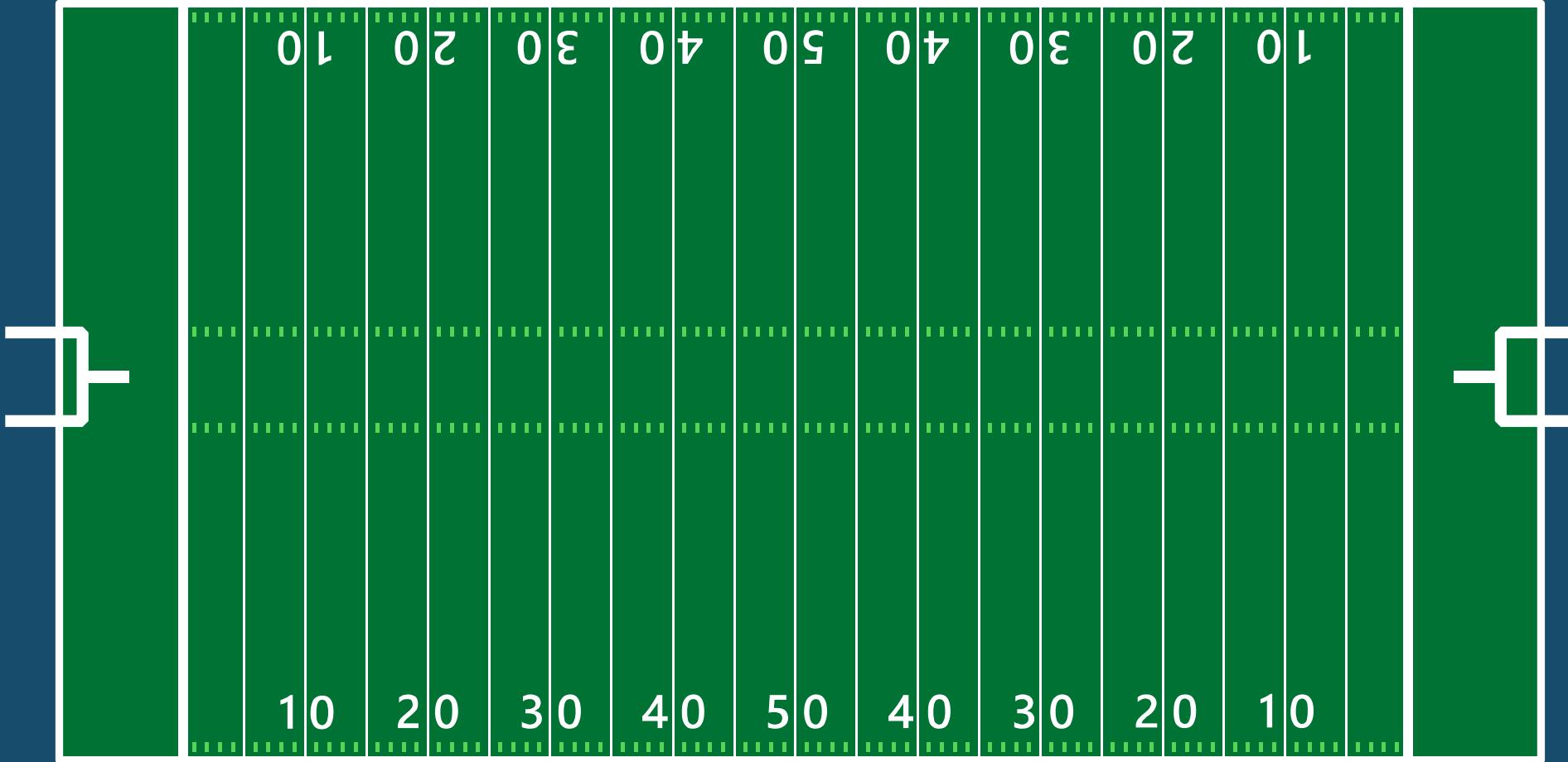


The background of the slide is a photograph of a server room. The room is packed with server racks, their front panels glowing with various colored lights (blue, green, yellow, red) from hard drives and other internal components. The racks are arranged in a grid-like pattern, filling the frame. The overall atmosphere is one of a high-tech, data-intensive environment.

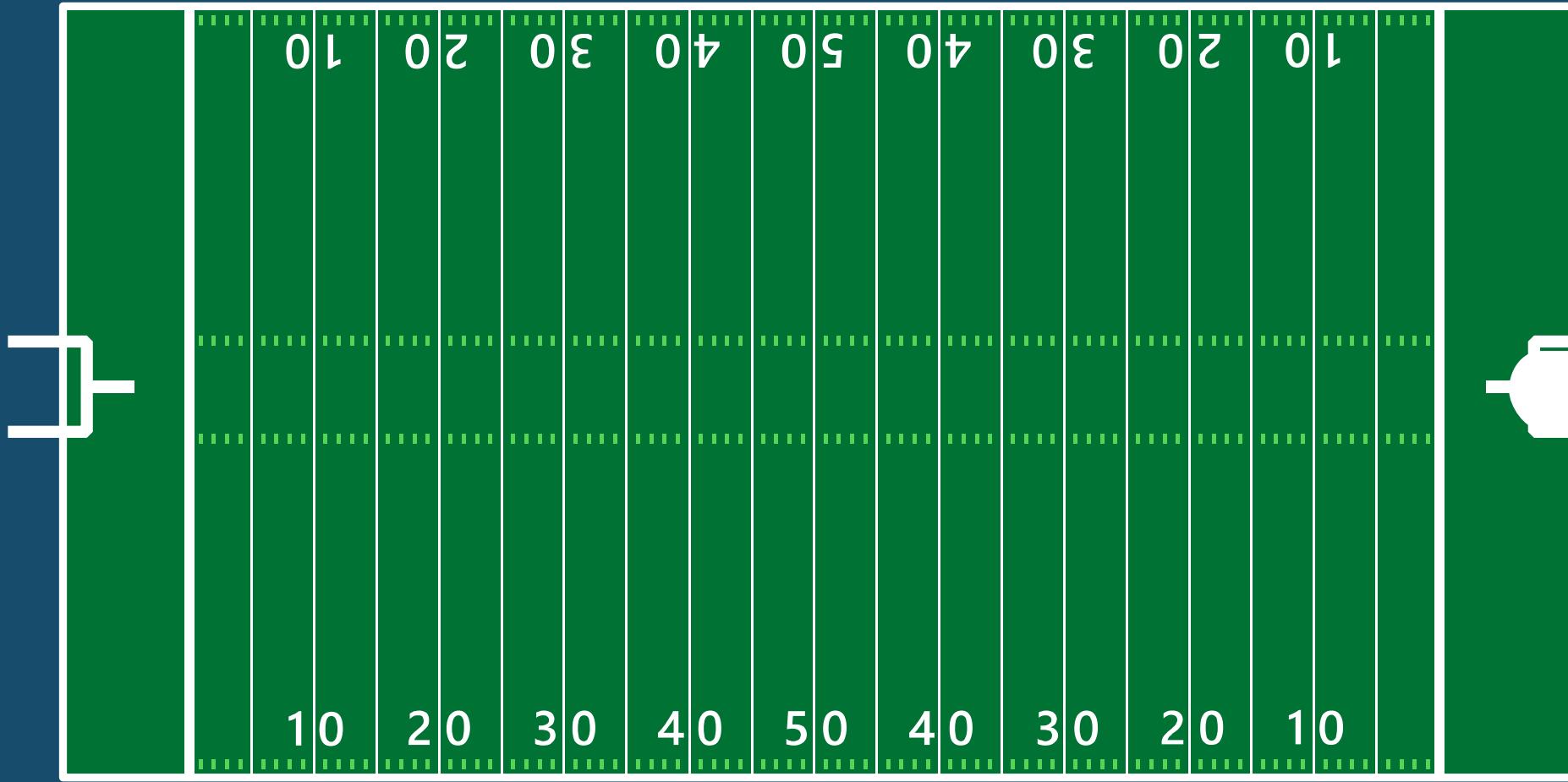
# Overview of Azure



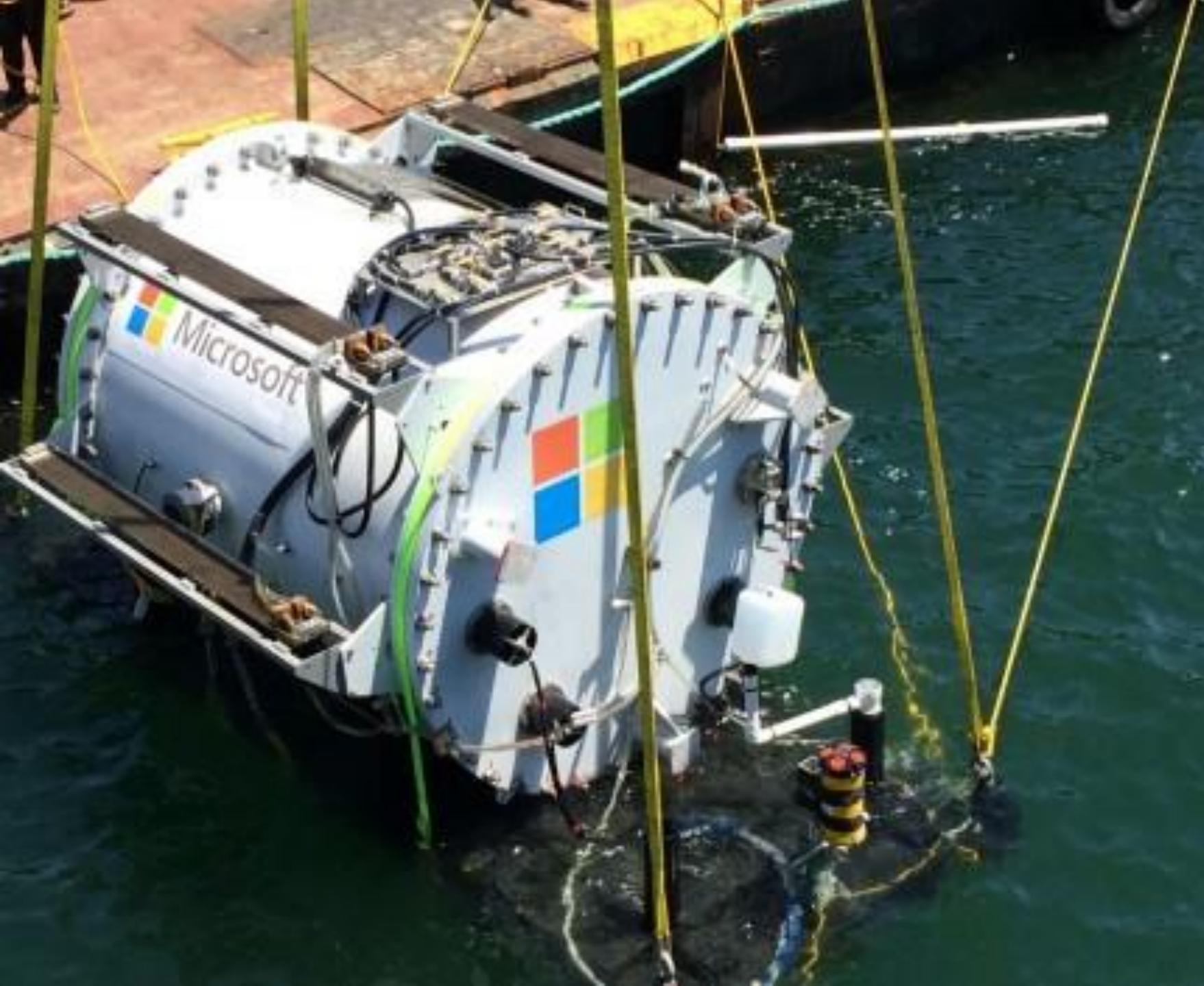




Datacenter buildings are about  
one football field in size



...large enough to hold two jumbo  
jets



# Azure regions

Azure is generally available in 30 regions around the world, and has announced plans for 8 additional regions. Geographic expansion is a priority for Azure because it enables our customers to achieve higher performance and it supports their requirements and preferences regarding data location.

Explore products per region ►



## Platform Services

### Security & Management

- Portal
- Azure Active Directory
- Azure AD B2C
- Multi-Factor Authentication
- Automation
- Scheduler
- Key Vault
- Store/ Marketplace
- VM Image Gallery & VM Depot

### Services Compute

- Cloud Services
- Service Fabric
- Batch
- RemoteApp

### Integration

- Storage Queues
- BizTalk Services
- Hybrid Connections
- Service Bus

### Media & CDN

- Media Services
- Content Delivery Network (CDN)

### Web and Mobile

- Web Apps
- API Apps
- Mobile Apps
- Logic Apps
- API Management
- Notification Hubs

### Developer Services

- Visual Studio
- Azure SDK
- VS Online
- App Insights

### Data

- SQL Database
- Data Warehouse
- DocumentDB
- Redis Cache
- Azure Search
- Storage Tables

### Analytics & IoT

- HDInsight
- Machine Learning
- Stream Analytics
- Data Lake
- Data Factory
- Event Hubs
- Data Catalog
- IoT Hub
- Mobile Engagement

### Hybrid Operations

- Azure AD Health Monitoring
- AD Privileged Identity Management
- Domain Services
- Backup
- Operational Analytics
- Import/Export
- Azure Site Recovery
- StorSimple

### OS/Server Compute

- Virtual Machines
- Container Service

### Storage

- BLOB Storage
- Azure Files
- Premium Storage

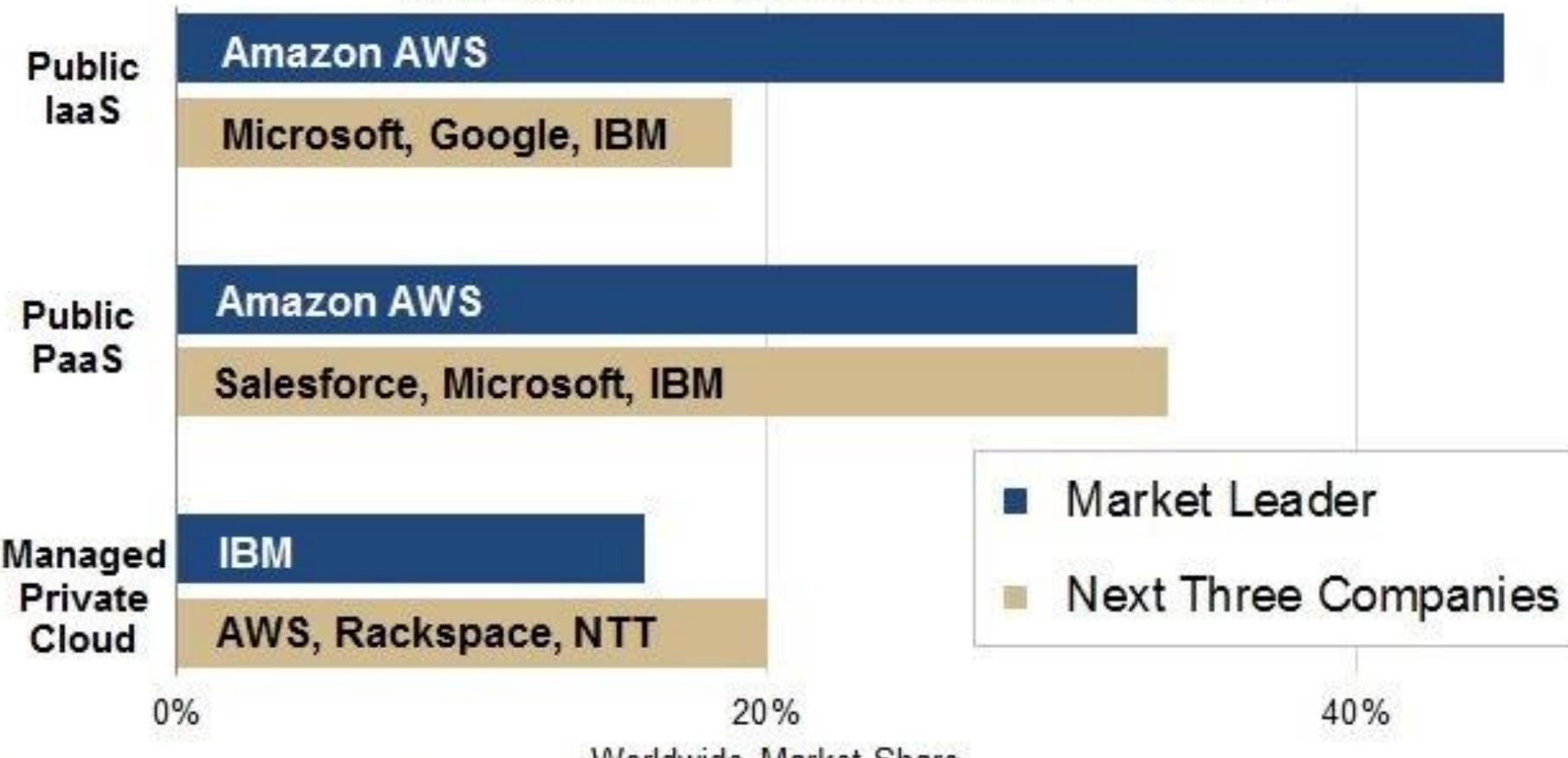
### Networking

- Virtual Network
- Load Balancer
- DNS
- Express Route
- Traffic Manager
- VPN Gateway
- App Gateway

## Datacenter Infrastructure (38 Regions, 30 Online)

## Cloud Market Leadership

Cloud Infrastructure Service Revenues - Q3 2016



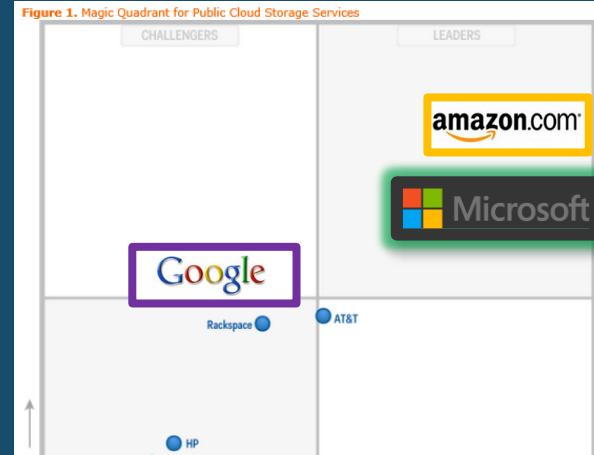
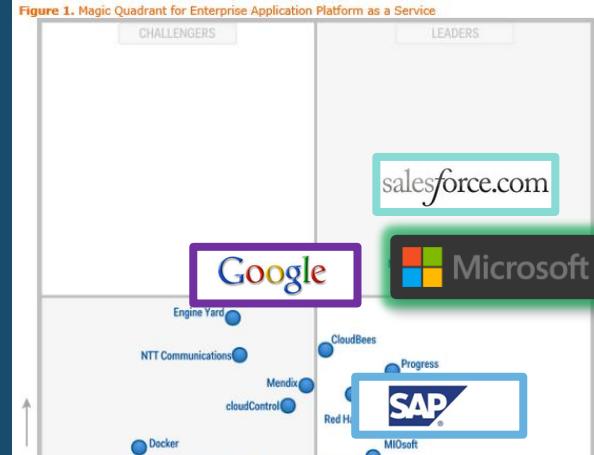
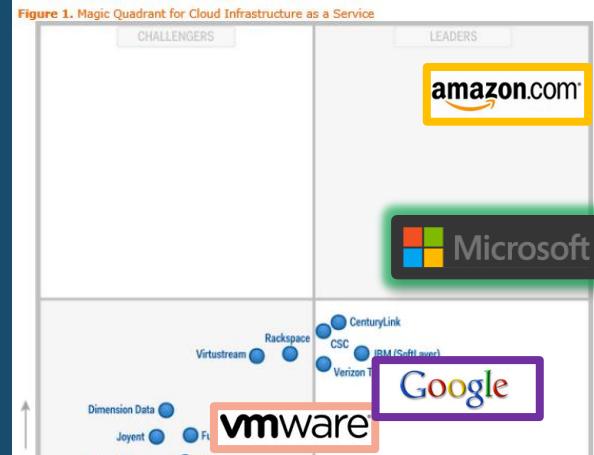
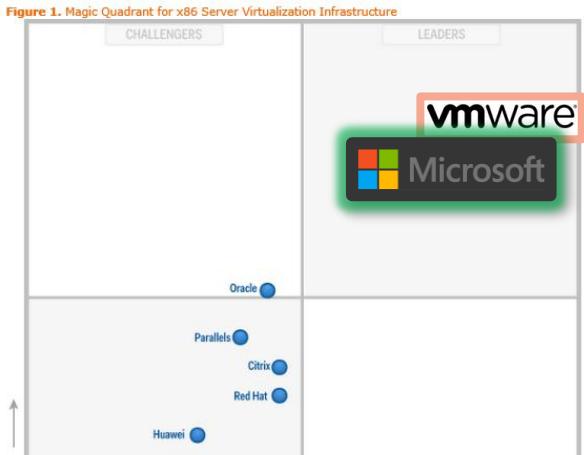
Source: Synergy Research Group

## Virtualization

## Cloud IAAS

## Enterprise PaaS

## Cloud Storage Service



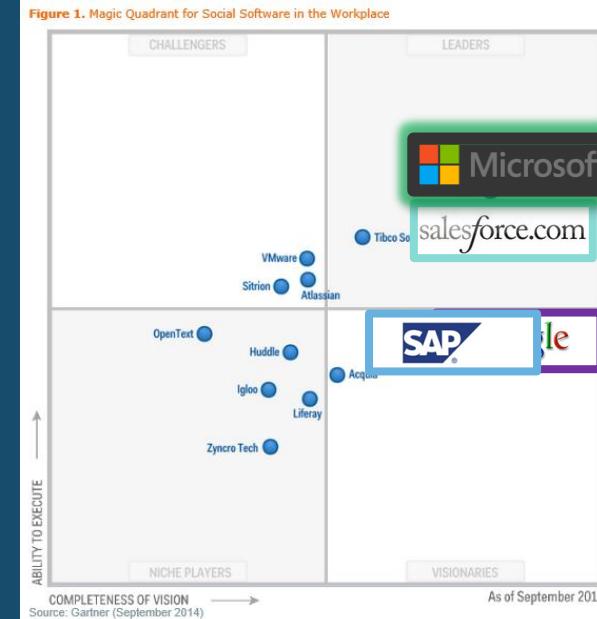
**The only company in all 7 Magic Quadrants and a Leader across all 7**

Virtualization | IaaS | SaaS (Unified Comm, BI, Sales Force Automation) | PaaS

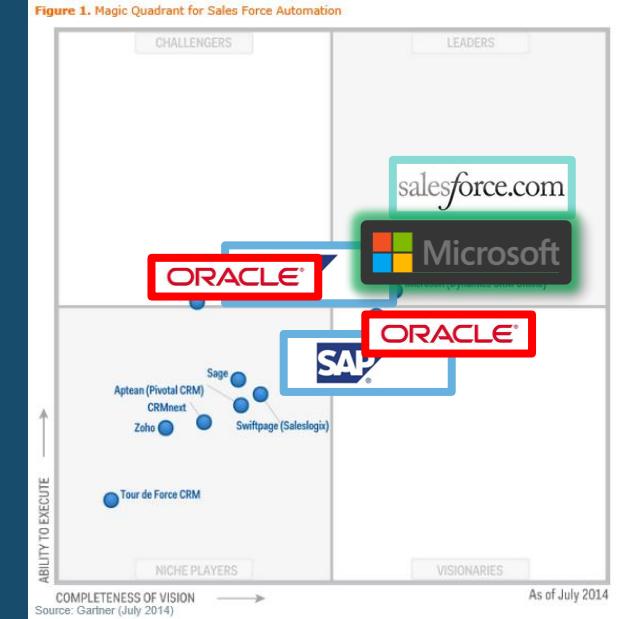
## Business Intelligence



## Social Software



## Sales Force Automation

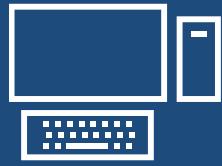




# Infrastructure as a Service



# Core services of Azure IaaS



## Compute

Virtual machines

Availability sets

VM Scale Sets

Etc.



## Storage

Disks  
(Standard, premium)

Blob storage  
(Hot, cool)

Files

Etc.



## Networking

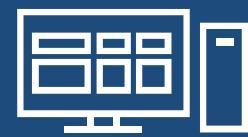
Virtual networks

VPN, ExpressRoute

Load Balancer

DNS, Traffic Manager

Etc



## Management

Azure Resource Manager (ARM)

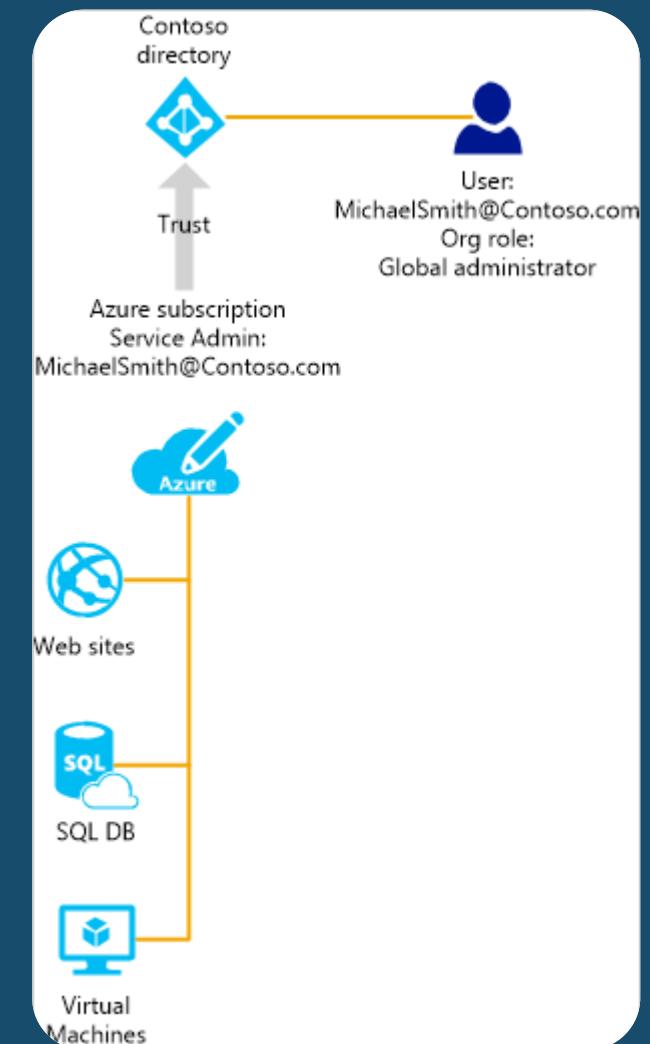
Azure Active Directory

Portal

KeyVault etc.

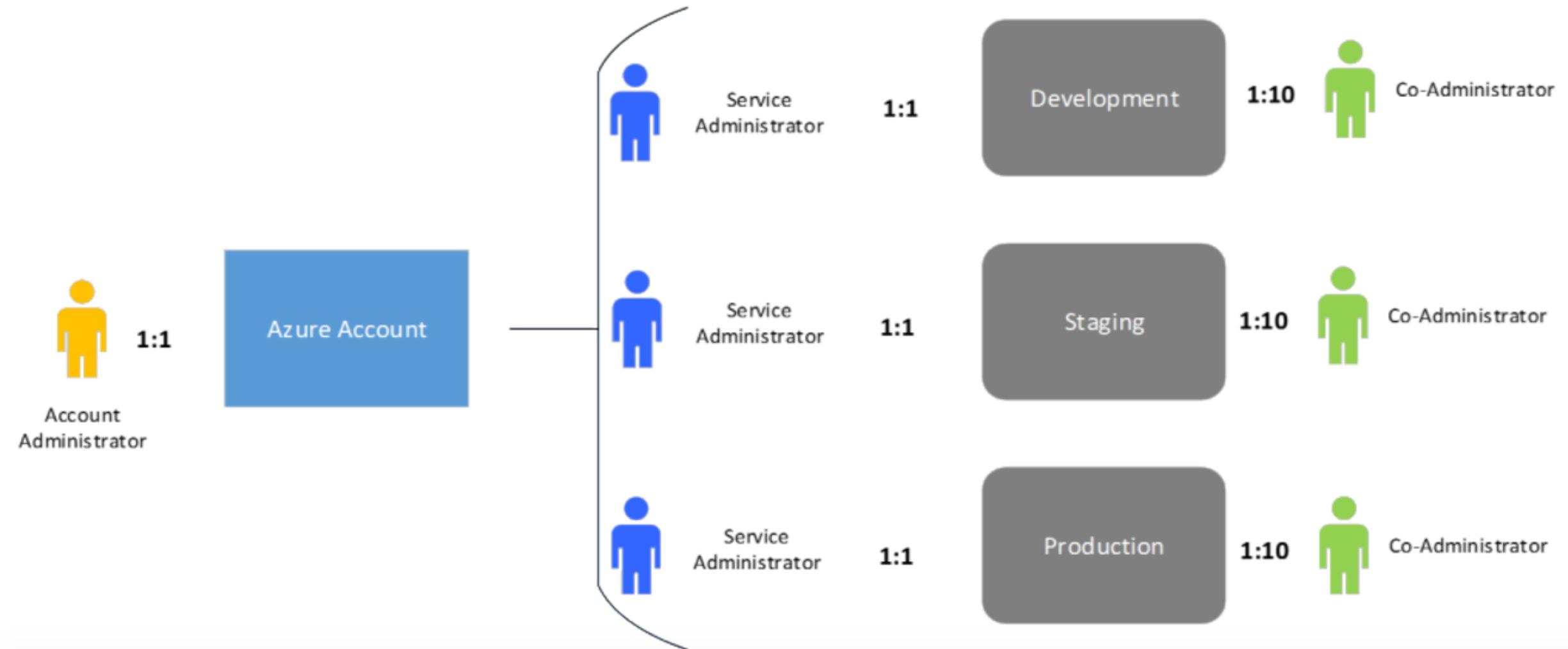
# But first...

- ⌚ Sign up for Azure (account owner)
- ⌚ Create Subscription (s)
  - ⌚ Why multiple?
    - ⌚ Strict billing segregation
    - ⌚ Running out of subscription limits
    - ⌚ Security Boundary
- ⌚ Setup IaaS networking Infrastructure



<https://docs.microsoft.com/en-us/azure/azure-subscription-service-limits>

# Subscriptions

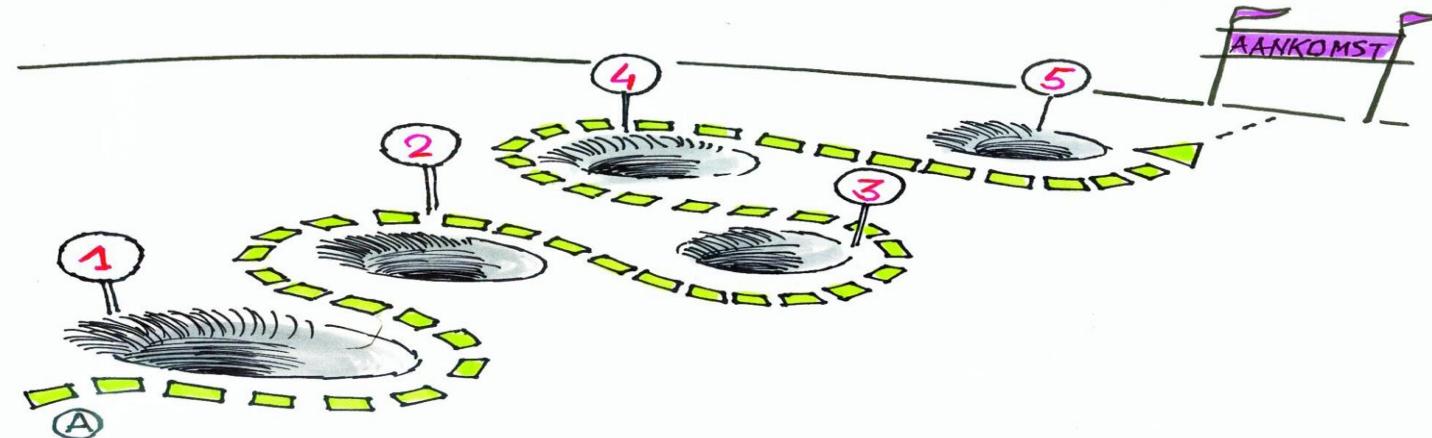
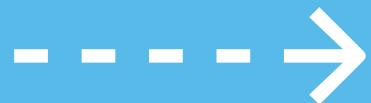
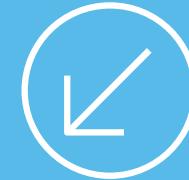


# infrastructure as a code





# Valkuilen



© samurai@work

Ben je eigenlijk wel bij vanaf  
de start?



## RSA Conference 2017 Podcasts

DevSecOps: Building continuous security into IT and app infrastructures

Why cyber hygiene is vital for the security of your organization

Fighting attackers in the era of data jacking

The power of Big Data for security, operations and DDoS protection

Enable self-healing endpoint security with Application Persistence

Automating PKI for the IoT platform

Protecting data isn't optional: What frustrates CIOs and CISOs?

AlienVault USM Anywhere: Security in the cloud, for the cloud

The evolution of cloud and mobile security



Help Net Security  
February 13, 2017



# 40% of cloud services are commissioned without the involvement of IT

Free tool download: [Netwrix Change Notifier for Active Directory](#)

Intel Security released its second annual cloud security report, "Building Trust in a Cloudy Sky," at [RSA Conference 2017](#). The report outlines the current state of cloud adoption, the primary concerns with private and public cloud services, security implications, and the evolving impact of Shadow IT of the more than 2,000 IT professionals surveyed.



Apache servers under attack through easily exploitable Struts 2 flaw

The HTTPS interception dilemma: Pros and cons

Why cyber hygiene is vital for the security of your organization

Leaked: Docs cataloguing CIA's frightening hacking capabilities

Machine learning in information security: Getting started

**Spot light** Machine learning in information security: Getting started

Are you wasting **73%** of your pen testing budget?

Learn metrics lessons and fails forged from hundreds of pen tests

eBook Download



Zonder een goed doordacht  
netwerkconcept hangen je  
VM's aan het internet



rdp vulnerability overview



Alle Afbeeldingen Video's Nieuws Shopping Meer Instellingen Tools

Elk land ▾ Elke taal ▾ Afgelopen jaar ▾ Gesorteerd op relevantie ▾ Alle resultaten ▾ Wissen

### CVE-2012-0002 : The Remote Desktop Protocol (RDP) ... - CVE Details

[www.cvedetails.com/cve/CVE-2012-0002/](http://www.cvedetails.com/cve/CVE-2012-0002/) ▾ Vertaal deze pagina

2 jan. 2017 - Remote Desktop Protocol Vulnerability, oval:org.mitre.oval:def:14623, windows ...

Summary: This security update resolves two privately reported vulnerabilities ...

### Microsoft Security Bulletin Summary for May 2016

<https://technet.microsoft.com/en-us/library/.../ms16-may.aspx> ▾ Vertaal deze pagina

10 mei 2016 - This bulletin summary lists security bulletins released for May 2016. ... This security update resolves a vulnerability in Microsoft Windows. ... over Remote Desktop Protocol (RDP) via Microsoft RemoteFX is not correctly tied to the session of the ...

### windows server - How secure is RDP? - Information Security Stack ...

<https://security.stackexchange.com/questions/.../how-secure-is-rdp> ▾ Vertaal deze pagina

9 aug. 2016 - He says that Remote Desktop Protocol (RDP) is not secure enough and we should be using .... And all of this only in the case that there is an RDP vulnerability.

### What you need to know about Remote Desktop Protocol - Webroot

<https://www.webroot.com/.../remote-desktop-protocol-attacks-nee...> ▾ Vertaal deze pagina

23 nov. 2016 - Threat Researcher Kelvin Murray explains Remote Desktop Protocol and how to protect yourself. When in doubt, contact our team and we can help you.

### CVE-2016-0190 - National Vulnerability Database - NIST

<https://web.nvd.nist.gov/view/vuln/detail?vulnId=CVE-2016...> ▾ Vertaal deze pagina

10 mei 2016 - Vulnerability Summary for CVE-2016-0190 ... and Windows RT 8.1 does not properly check whether RemoteFX RDP USB disk accesses originate from the user ...

### Protecting Remote Access to Your Computer: RDP Attacks and Server ...

<https://duo.com/.../protecting-remote-access-to-your-computer-rd...> ▾ Vertaal deze pagina

30 jun. 2016 - Recently, attacks against Remote Desktop Protocol (RDP) have led to the sale of ... a vulnerability in how they implemented their remote desktop protocol (RDP) ... According to their analysis, the type of software found on these servers are ...

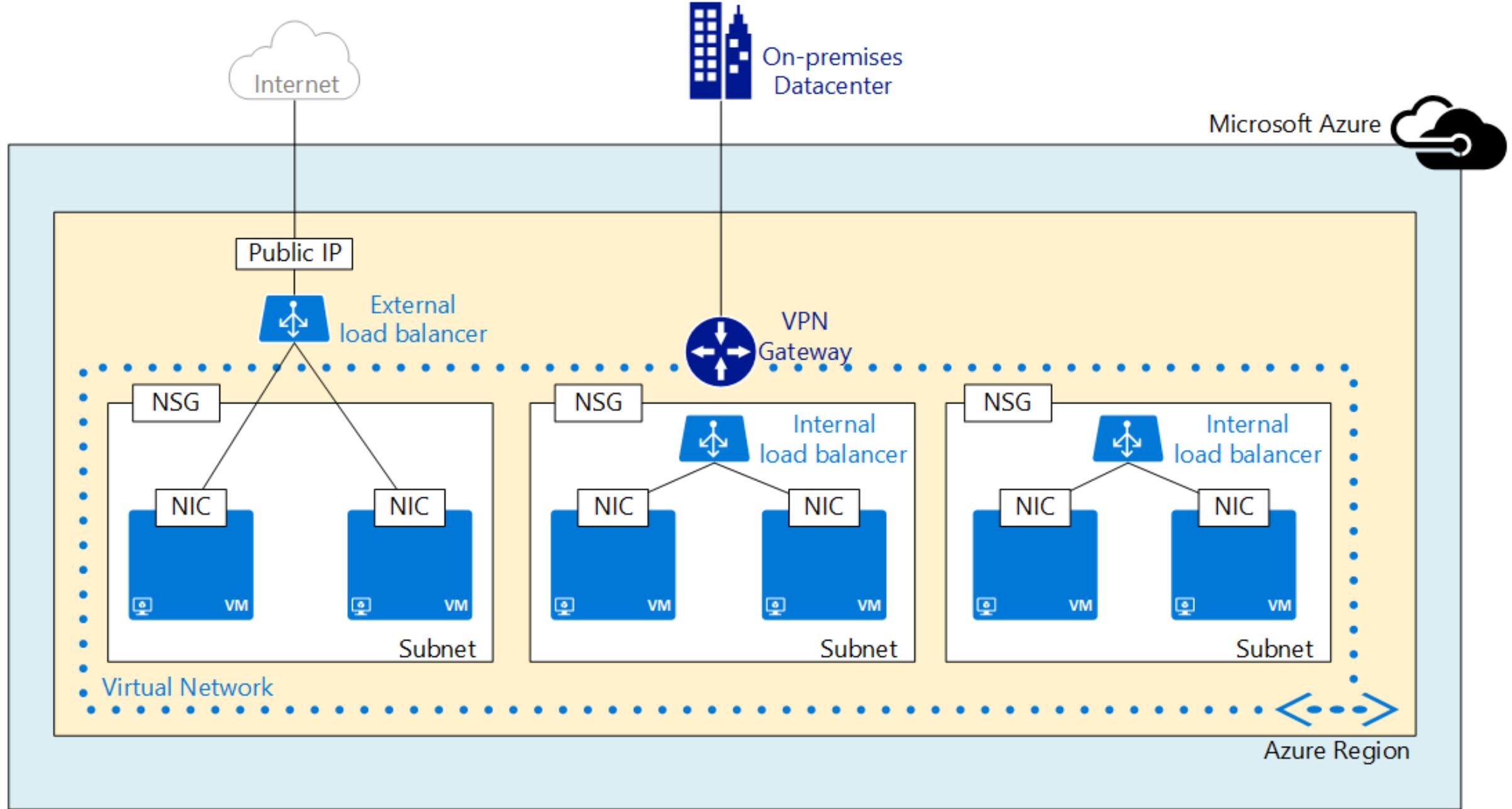
### Demo of MS12-020 RDP Vulnerability - YouTube



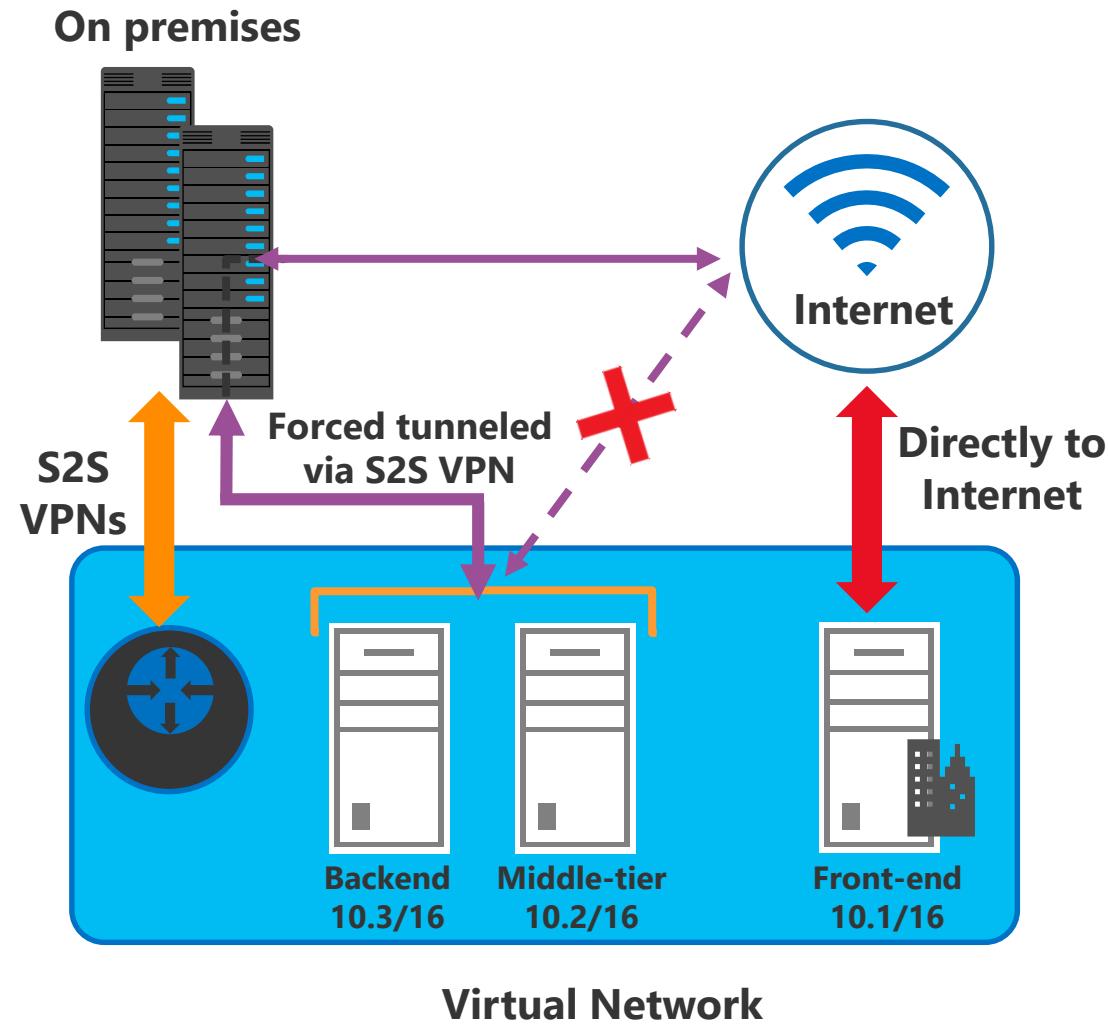
<https://www.youtube.com/watch?v=FyspAfH9h-A>

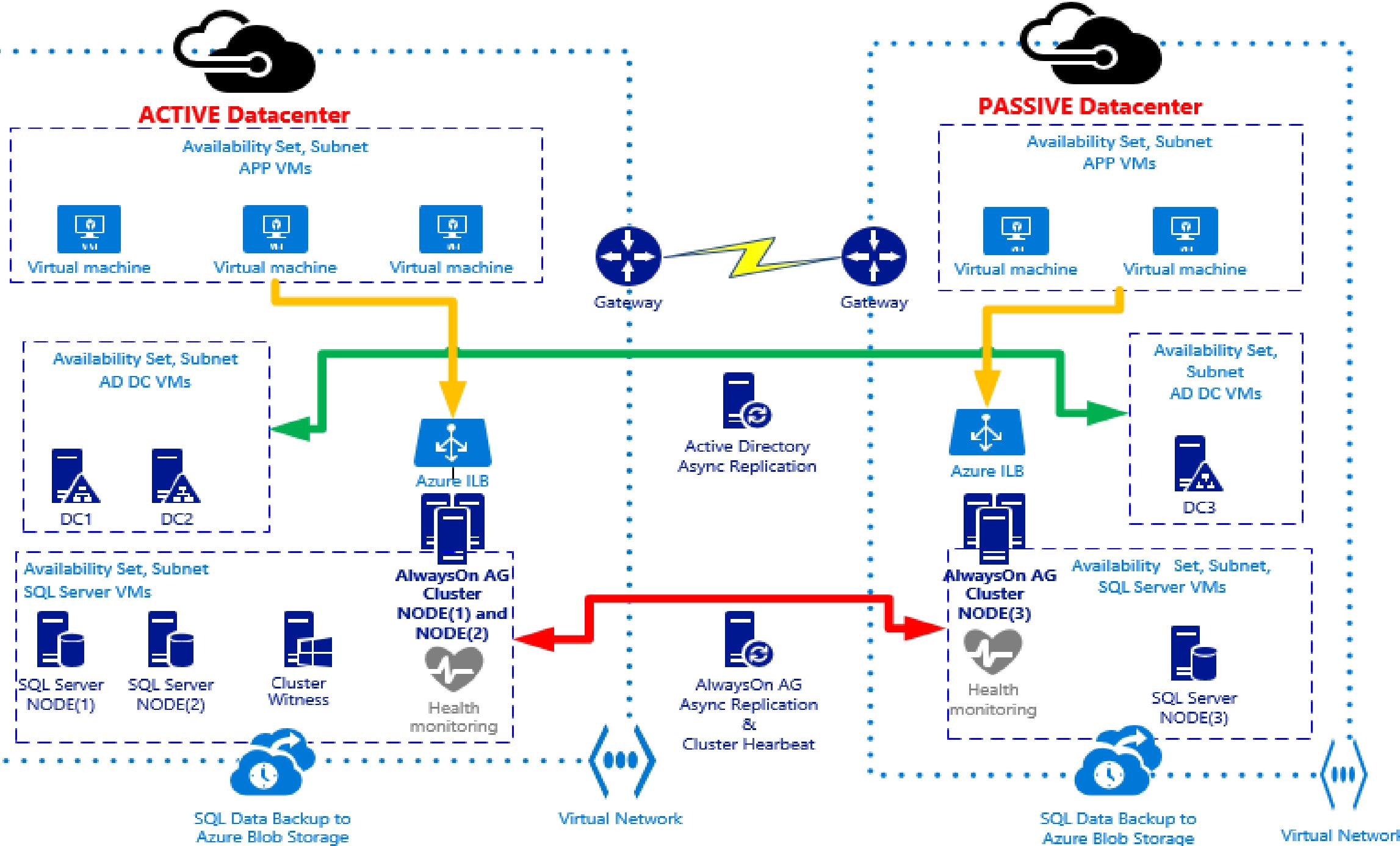
16 sep. 2016 - Geüpload door Matthew Chapman

In this demo of MS12-020 RDP Vulnerability I will show how to quickly exploit it. I will also show you have ...



# Forced Tunneling



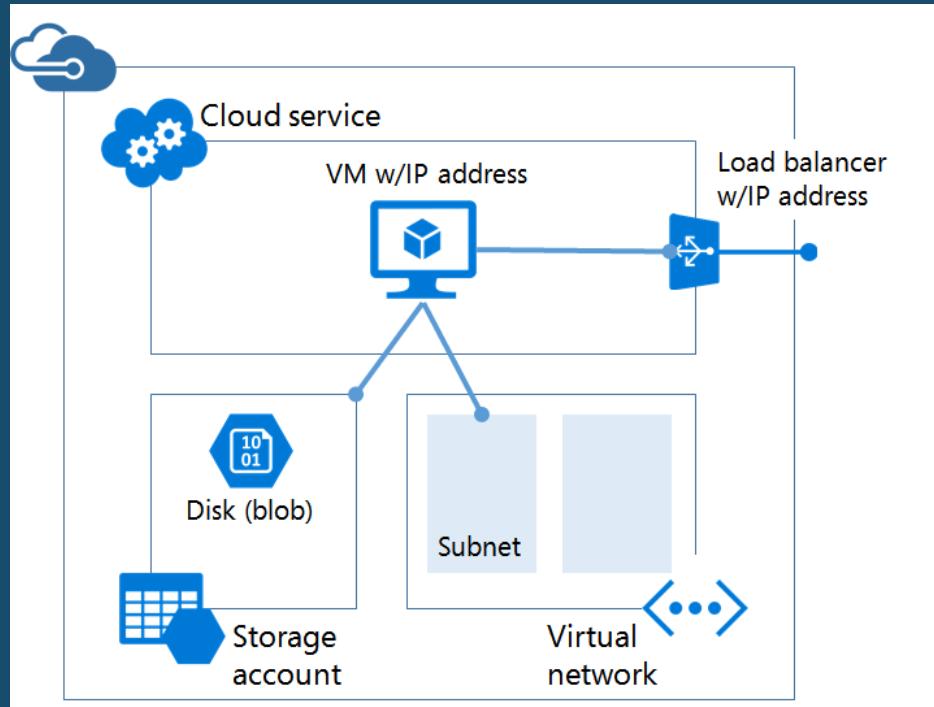


Wist je dat er niet 1 maar eigenlijk 2 Azure omgevingen zijn?

# The tale of 2 Azures

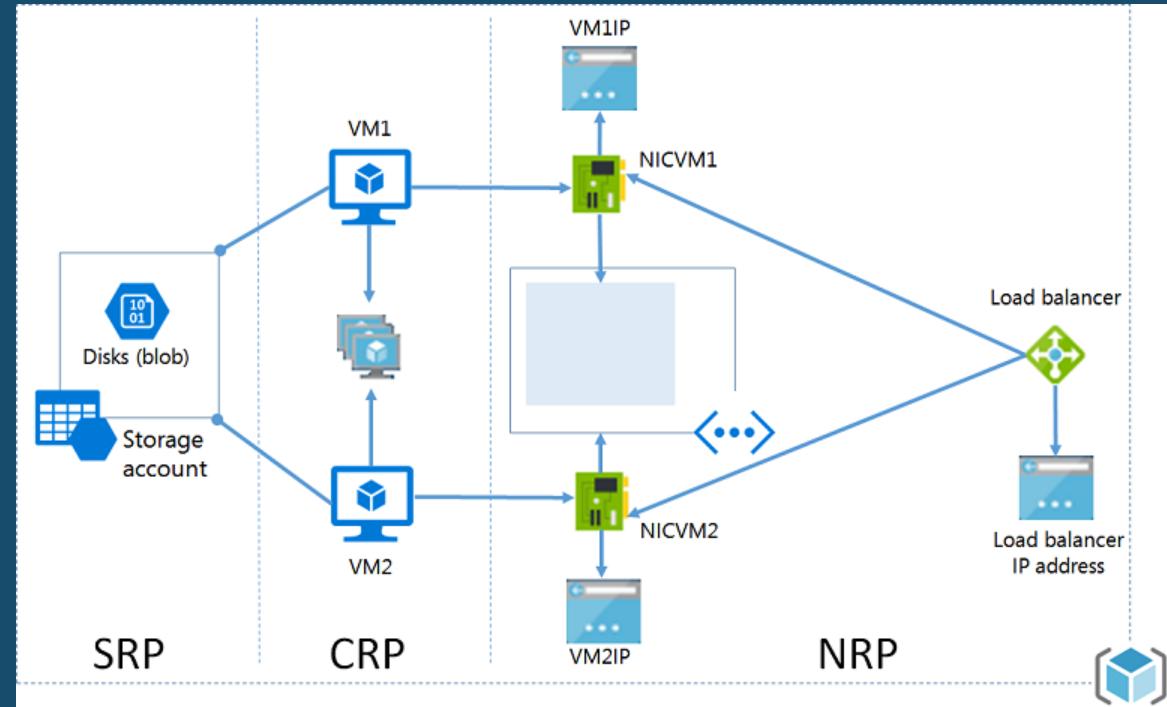
## ④ Azure Service Manager

- ④ Version 1
- ④ Referred to as ASM or Classic
- ④ Management via Old Portal en New Portal (some exceptions)



## ④ Azure Resource Manager

- ④ Version 2
- ④ Referred to as ARM
- ④ Management via New Portal



Heb je eigenlijk wel  
gecontroleerd of je Applicatie  
supported is als je dit in Azure  
neerzet?

# Support for Microsoft apps

---

SQL Server



Dynamics



SharePoint



Exchange



Microsoft BizTalk Server

Microsoft Dynamics AX

Microsoft Dynamics CRM

Microsoft Dynamics GP

Microsoft Dynamics NAV

Microsoft Exchange

Microsoft Forefront Identity Manager

Microsoft HPC Pack

Microsoft Project Server

Microsoft SharePoint Server

Microsoft SQL Server

Microsoft System Center

Microsoft Team Foundation Server

Microsoft Windows Server

---

Hoe hoog beschikbaar zijn  
mijn VM's eigenlijk

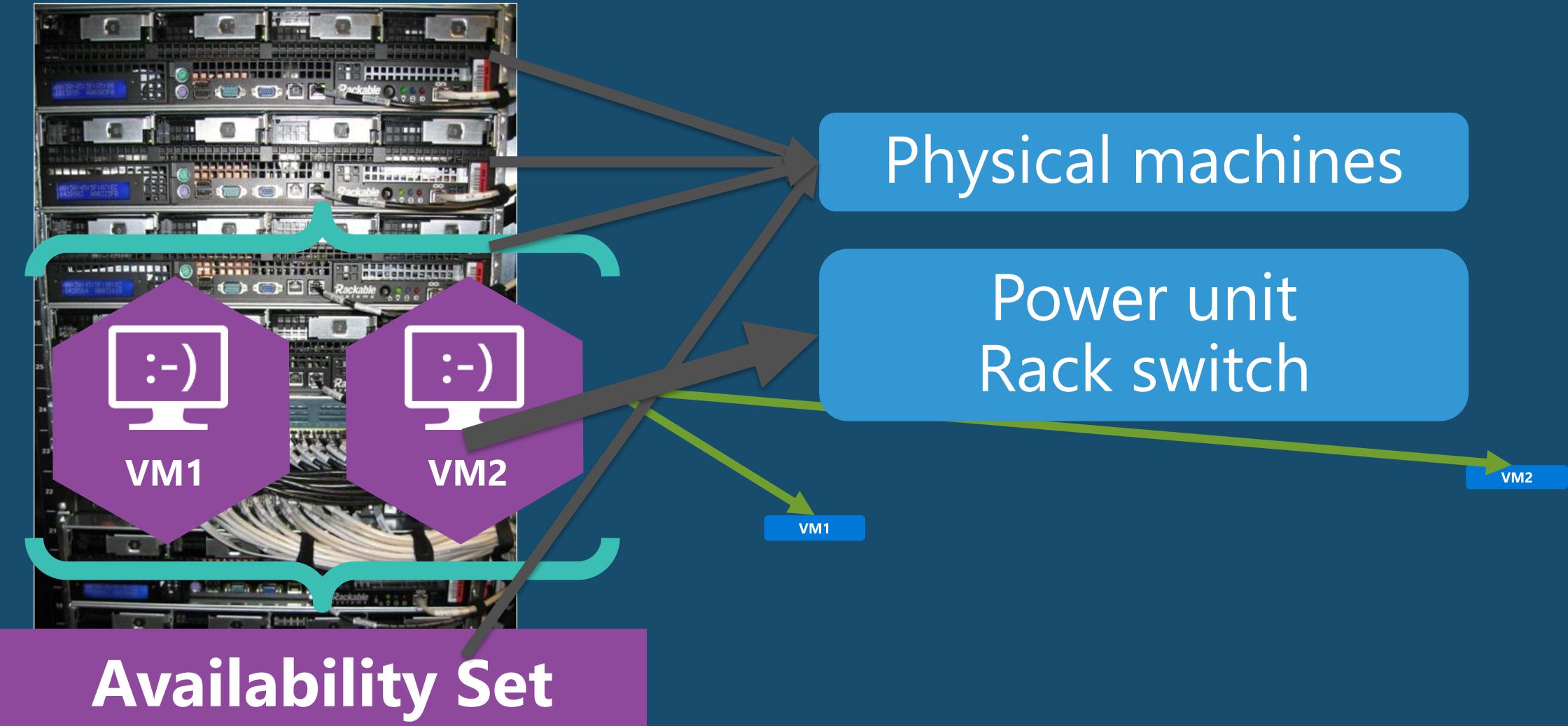
# Dienstovereenkomst voor Virtual Machines

Voor het laatst bijgewerkt: 2016 november

- Voor alle op internet gerichte Virtuele Machines waarbij twee of meer instances zijn geïmplementeerd binnen dezelfde Beschikbaarheidsset, garanderen we u ten minste 99,95% van de tijd connectiviteit met ten minste een instance van de Virtuele Machine hebt.
- Voor Single-Instance Virtuele Machines die gebruikmaken van premium opslag voor alle schijven, garanderen we u ten minste 99,9% van de tijd Connectiviteit van Virtuele Machines hebt.

- ⌚ 99,95% is dus 4,38 uur downtime
- ⌚ 99,9% is dus 8,76 uur downtime
- ⌚ Maak gebruik van Availability Sets
- ⌚ Kan jouw applicatie hier wel mee overweg?

# Availability sets





Uiteindelijk is het  
een kwestie van  
gezond verstand

snoep verstandig  
eet 'n appel

# Snoep verstandig !

- ⌚ Denk na over het netwerk
- ⌚ Denk na over welke workloads je wel of juist niet op Azure neer zou willen zetten
- ⌚ Zet je rechtenmodel van te voren goed op (RBAC)
- ⌚ Denk na over naamgevingsconventies
  - ⌚ Wat zijn de limieten?
  - ⌚ Global names (moeten uniek zijn in heel Azure)
- ⌚ Denk na over monitoring (OMS of SCOM?), hoe past dit in mijn huidige ITIL processen (Incident Management, Change, Release, Service Request etc..)
- ⌚ Denk na over automation
- ⌚ Become a Developer, and you might actually start to understand them

# Vragen?

