

NL VMUG UserCon – March 17 2016





USERCON

VMUG



← Pak je telefoon en scan de QR code of open <http://pollev.com/viktorious>

Opties voor DR binnen virtuele infrastructuren

Alles over DR en DRaaS – Viktor van den Berg, VCDX #121



viktorious.nl
virtualization & cloud management

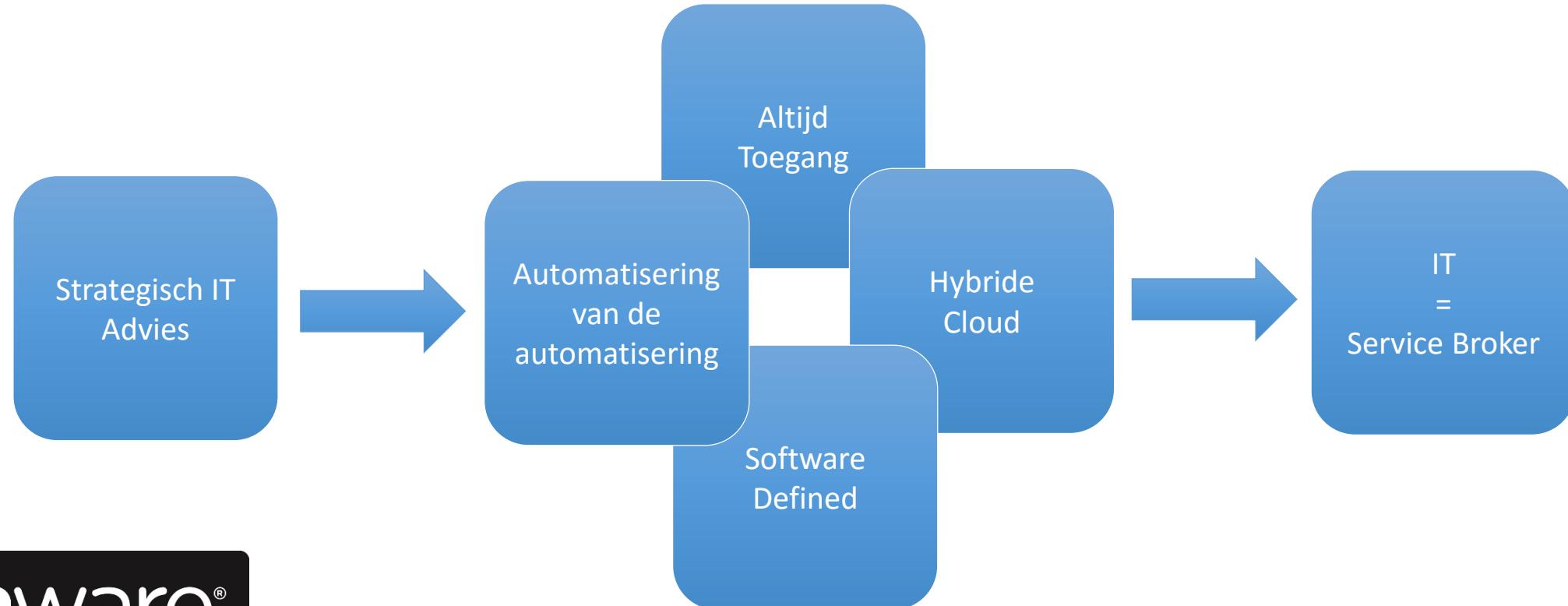


**What
Matrix**

The logo consists of a grid of nine squares in the top-left corner, with the word 'What' in a serif font above the word 'Matrix' in a bold sans-serif font.

TECH UNPLUGGED

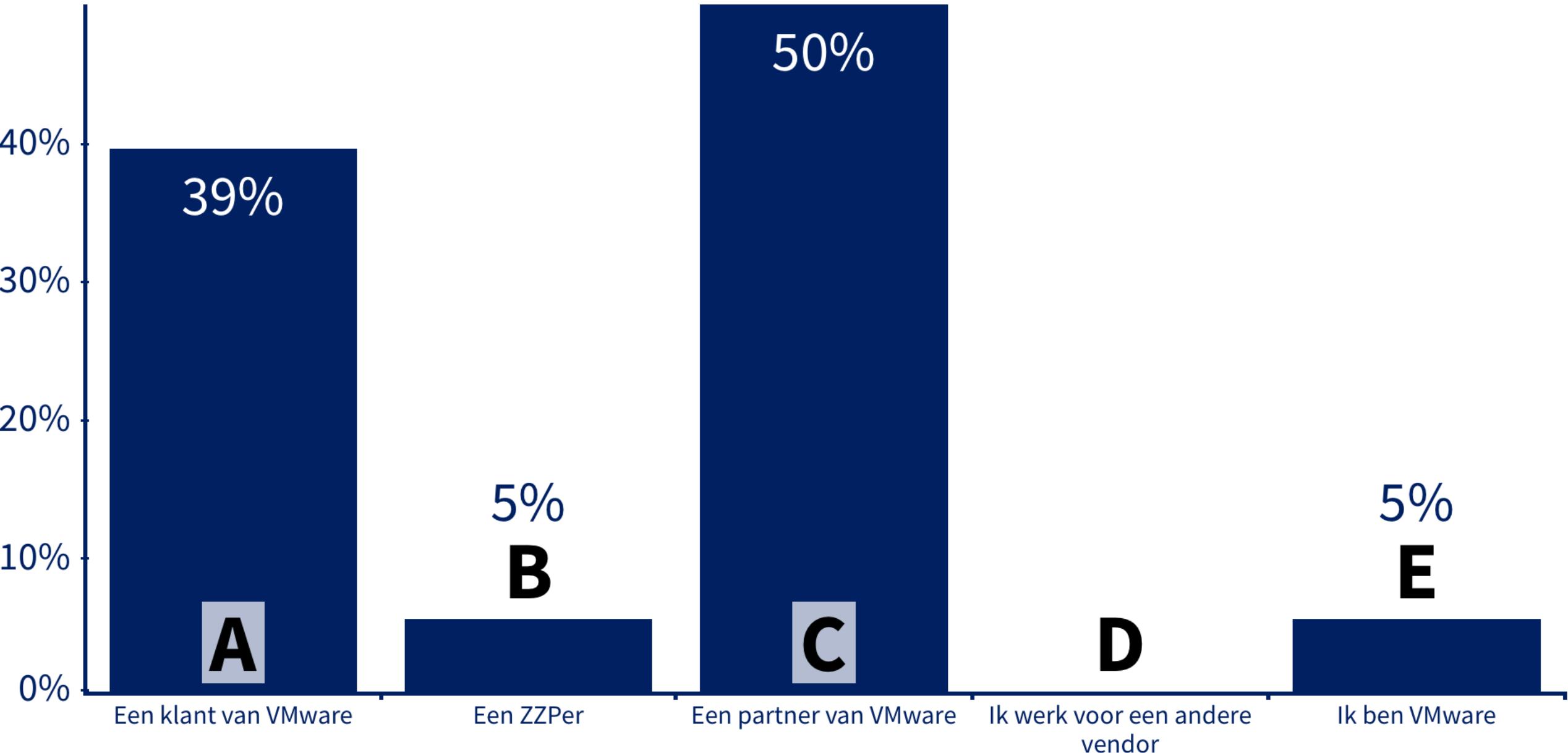
“Met eenvoud, kennis en vrijheid uw ICT altijd binnen bereik.”



Leuk kennis te maken! Wie bent u?



Respond at PollEv.com/viktorious





Disaster Recovery









When a disaster strikes...

- Stroomuitval
- Koelingsproblemen
- Brand
- Lekkage
- Uitval WAN
- Uitval SAN



vSPHERE: HOE IS UW DISASTER RECOVERY GEREGELD?

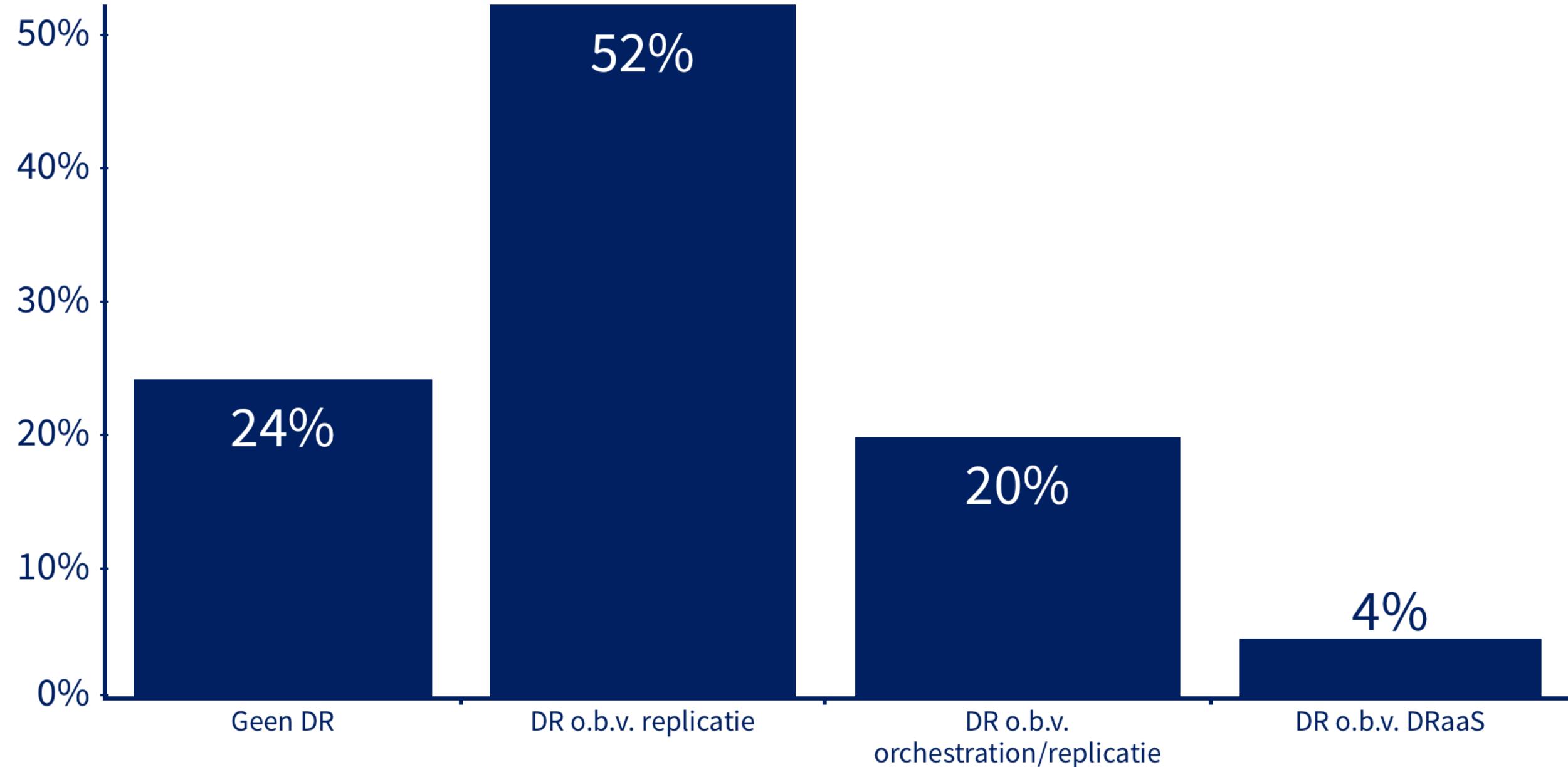
VIKTOR VAN DEN BERG
SENIOR CONSULTANT, PQR

the official dutch vmware user group

Hoe is uw Disaster Recovery geregeld?



Respond at **PollEv.com/viktorious**



Business
Continuity
Policy

Business
Impact
Analysis

Recovery
Strategy

Design
Build

Test

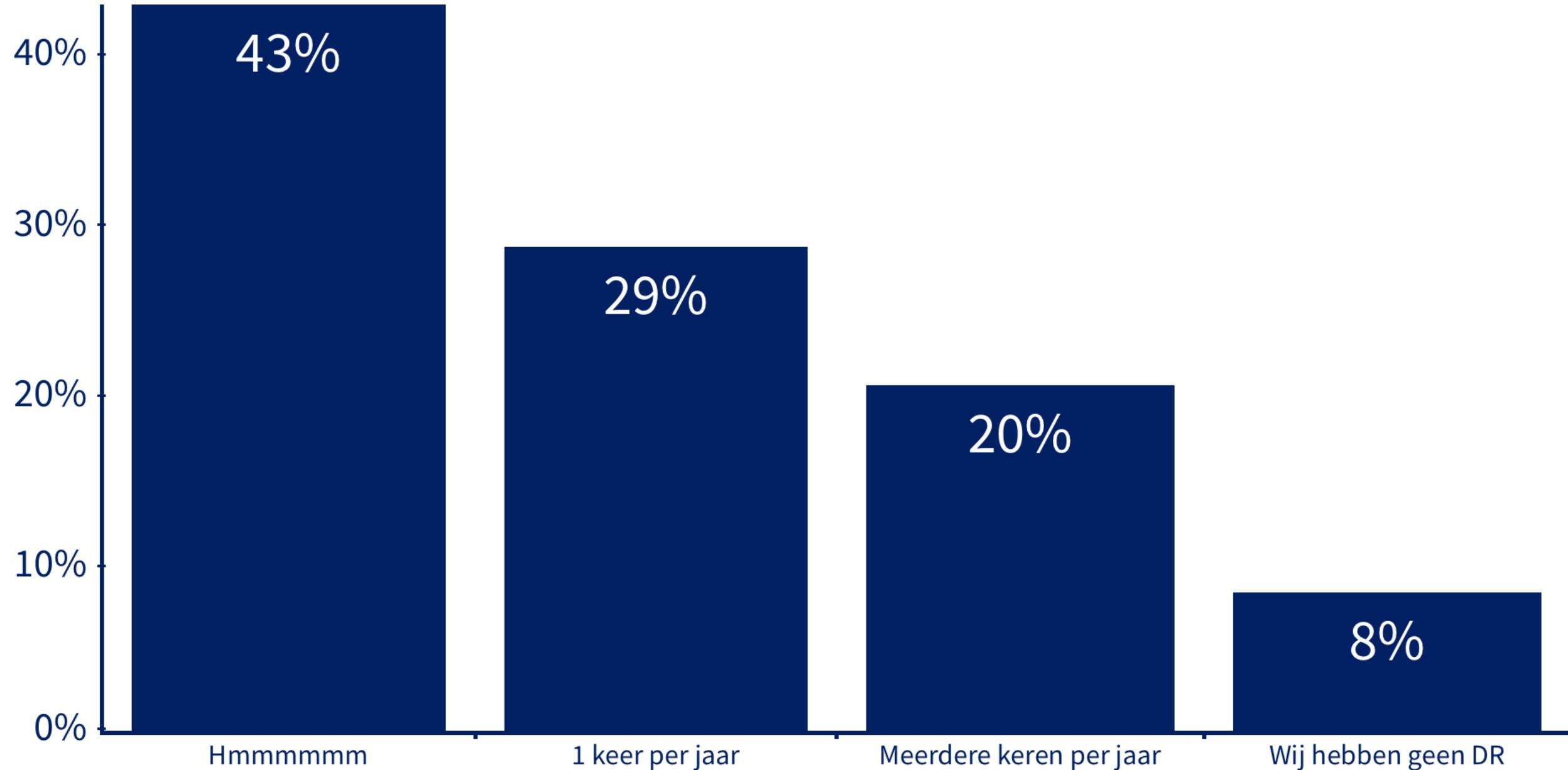
Maintain

Disaster Recovery Lifecycle

Hoe vaak test u uw DR oplossing?



Respond at **PollEv.com/viktorious**



Wat is uw belangrijkste uitdaging omtrent DR?

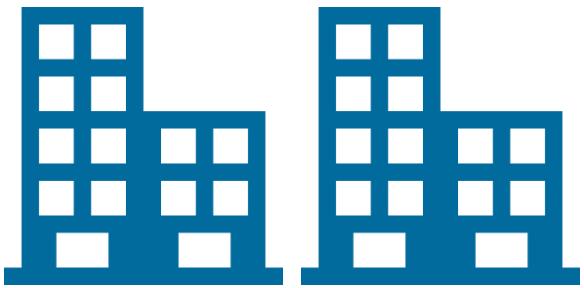
 Respond at **PollEv.com/viktorious**

toestemming
verbinding
planning
security
test
performance
alleslatency
business
brengen
downtime
testen
verbinding
netwerk
commitment
tijd
speed
stabiliteit
beheerder
bandbreedte
zonder
price
online
donald
app
blonkit
kennis
functioneel
duck
weinig
draagvlak
verstoring
procedure
resources
management
automation
geld
kosten

A close-up photograph of a person's hands. One hand is in the foreground, fingers slightly curled, while the other hand holds a smartphone. The background is blurred, showing what appears to be a garden or outdoor setting with greenery and a building.

Relevante vragen





Opties voor on-premises DR

- vSphere Replication
- vSphere Metro Storage Cluster (vMSC)
- Site Recovery Manager
- Veeam Backup & Replication
- Zerto Virtual Replication



ABR versus vSR

Array Based Replication

- Storage replicatie
- Een management server kan nodig zijn
- Afhankelijk van de storage
- Per volume/LUN (VVOLs!)
- $0 < \text{RPO} < 24\text{h}$
- Active/Standby - Active/Active - Stretched
- Consistency groups (write order fidelity)
- Afhankelijk van de vendor
- Meerdere points in time (vendor dependent)
- HA restart heeft geen volgen voor de sync

vSphere Replication

- Hypervisor replicatie
- Vereist extra virtual appliances
- Onafhankelijk van de storage
- Per virtual machine
- $15\text{min} < \text{RPO} < 24\text{h}$
- Active/Standby – Active/Active
- Geen consistency groups (write order fidelity)
- Application consistent (Linux/Windows)
- Meerdere points in time
- HA restart vraagt om full resync

Site Recovery Manager

Site Recovery Manager

- vSphere add-on
- Uitgebreide orchestration opties op basis van recovery plans
- Test, planned migration en disaster recovery opties
- Kost extra geld en introduceert een extra afhankelijkheid

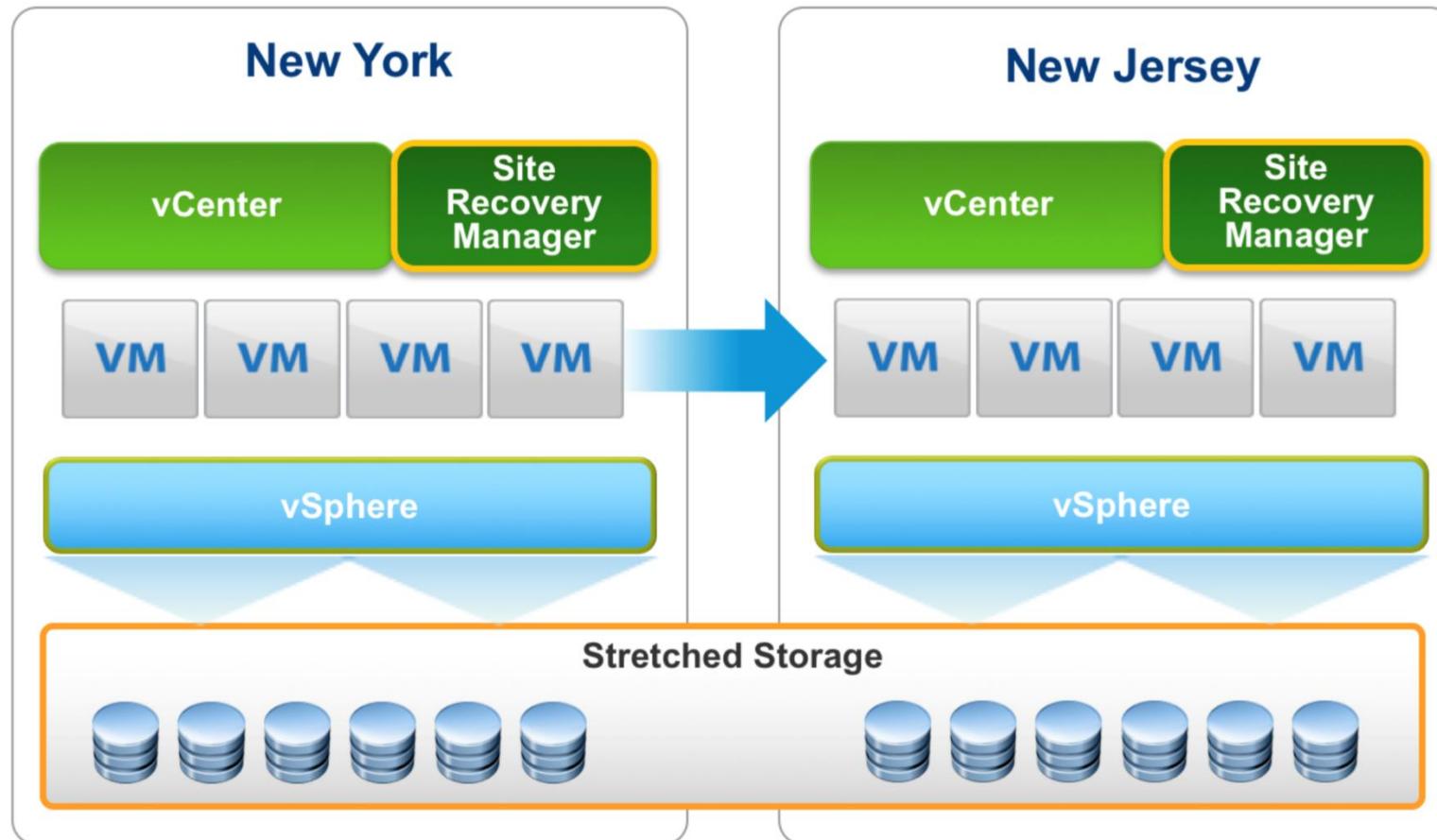
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SRM met vMSC



Verschillen met een “normaal” vMSC

- Orchestrated recovery
- Dual vCenter oplossing
- SRM is benodigd
- Site balancing wordt lastiger
- Introduceert de optie “Enable vMotion of Eligible VMs”

Zerto Virtual Replication

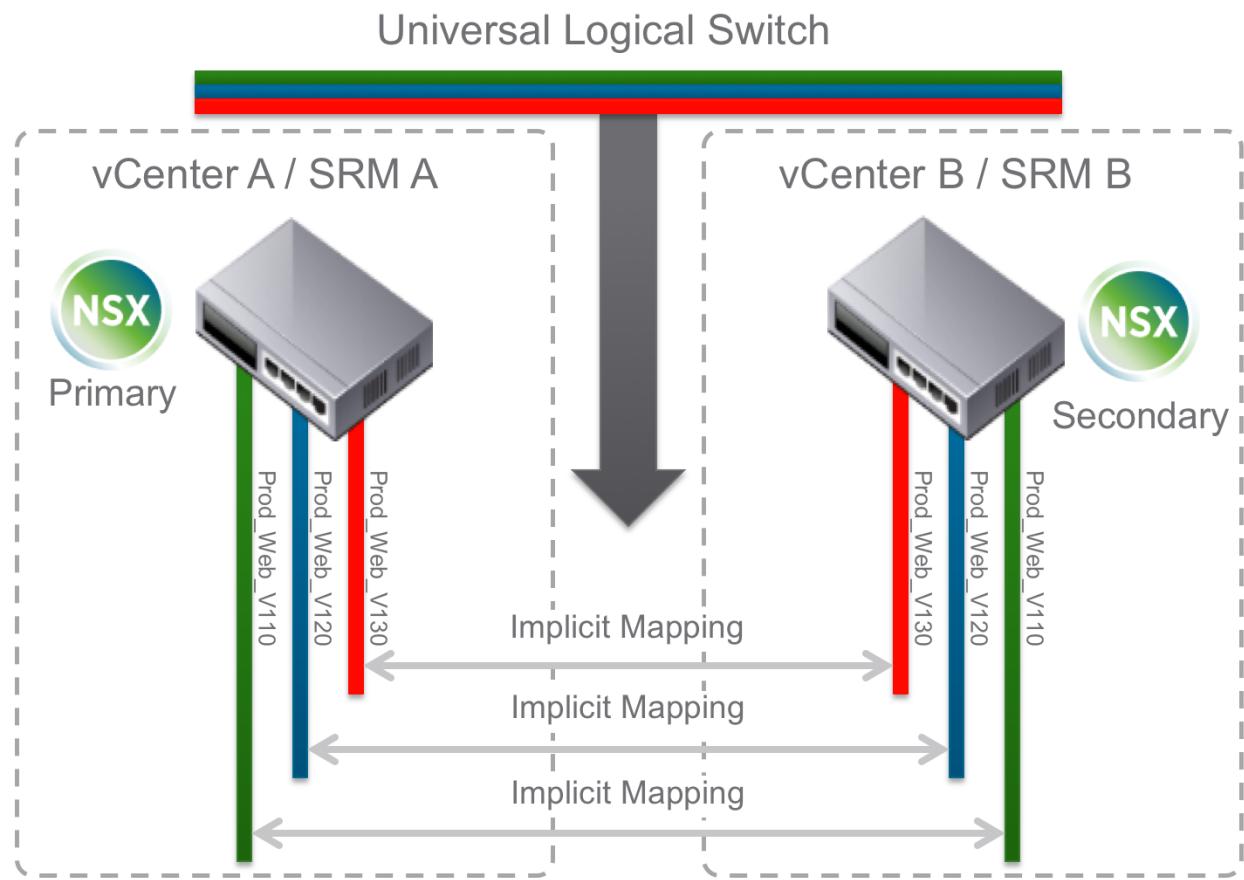
- ZVR = hypervisor replication
- Journal based versus snapshot based replication
- Cross hypervisor replicatie
- RPO ~ 0
- Storage independent
- Virtual Protection Groups
 - Consistent point in time
 - Recovery plan opties

DR netwerk aandachtspunten

- Stretched L2 netwerk (active/active – stretched)
 - Zeer flexibel
 - Spanning tree, broadcast verkeer
- Verplaatsen L2 netwerk (active/standby)
 - Subnet verhuizen
 - Handmatig aanpassen routing regels
 - Kleine(re) subnetten gewenst
- L3 routed netwerk (active/standby)
 - IP renumbering
 - DHCP
 - DNS update



SRM mét NSX



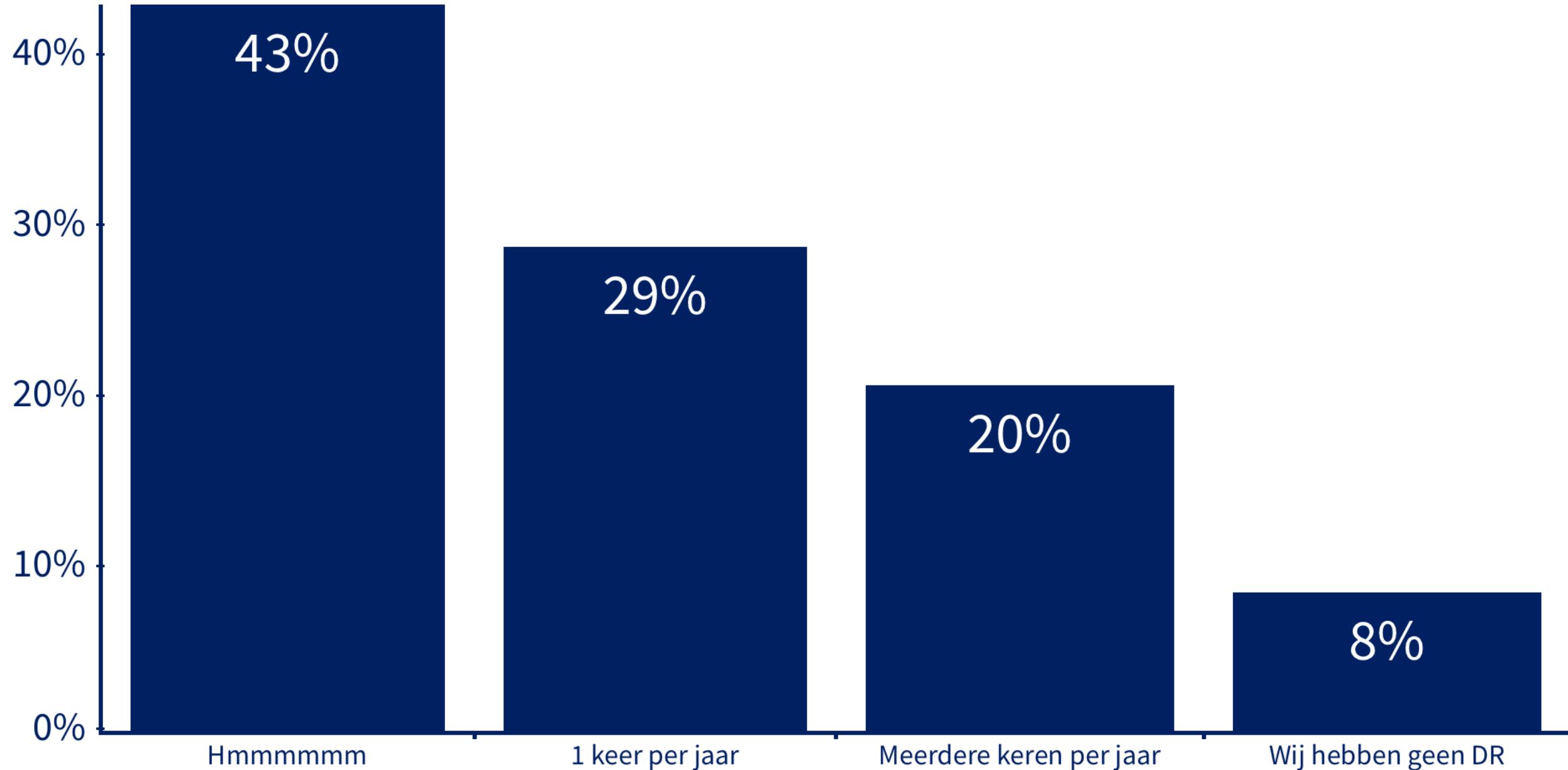
SRM mét NSX

- Vanaf NSX 6.2
- Universal logical switch
- Cross-vCenter NSX
- Geen spanning tree
- Geen broadcast verkeer
- Betere RTO

Hoe vaak test u uw DR oplossing?



Respond at **PollEv.com/viktorious**



DYODR

Voors

- Volledige controle
- Verschillende replicatie opties
- L2 stretched / L3 routed networking
- Keuze in te gebruiken software
- Keuze locatie

Tegens

- Initiële investering vereist
 - Hardware
 - Software
- Complex
- Beheer inspanning



VEEAM



vmware[®]
vCloud Air[™]



uniserver

proserve[®]
we keep your company online

vmware[®]

vCloud Air[™] Network

Zerto

Hoe is het met vCloud Air?

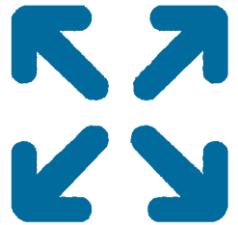
VMworld 2015: Merger EMC/VMware/VirtuStream

Maart 2016: Hernieuwde focus

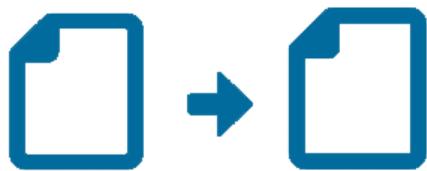


December 2015: samenwerking ketst af

VMware vCloud Air - focus



Extend your infrastructure

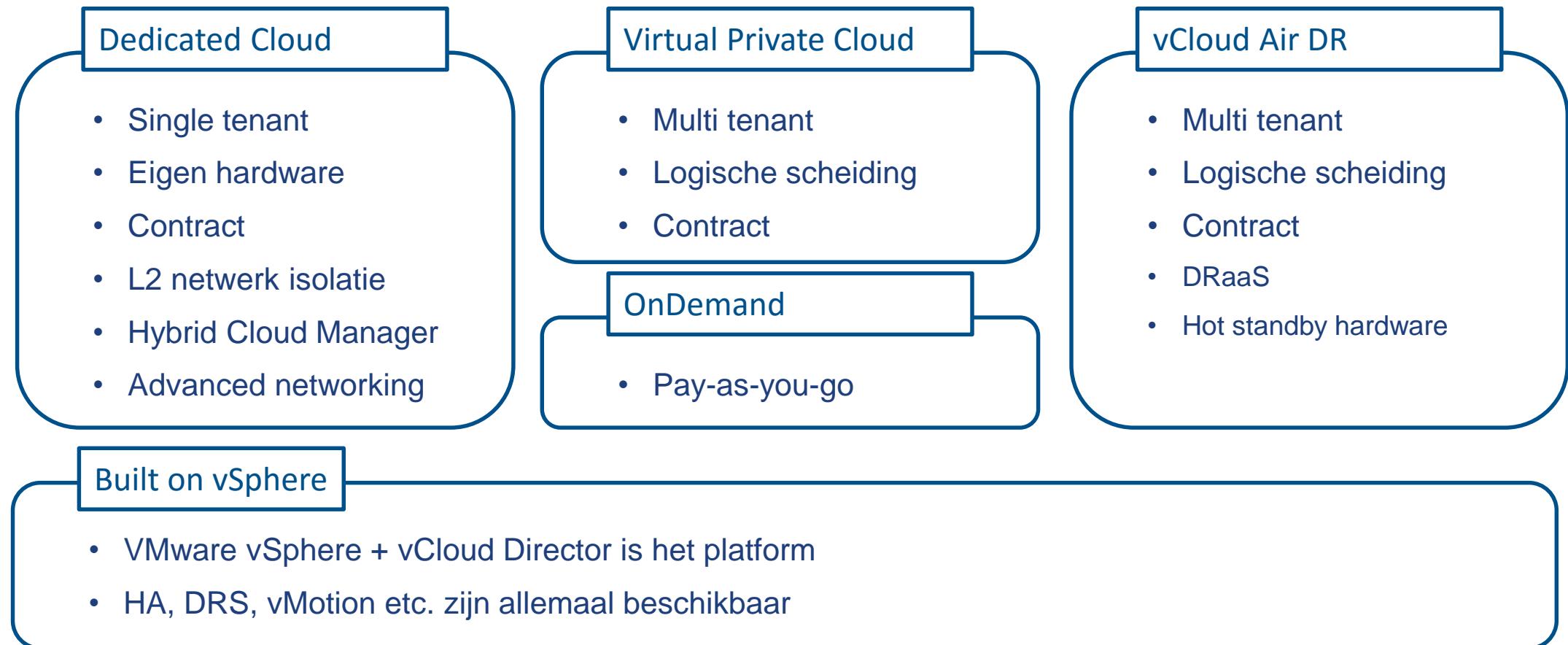


Migrate your datacenter



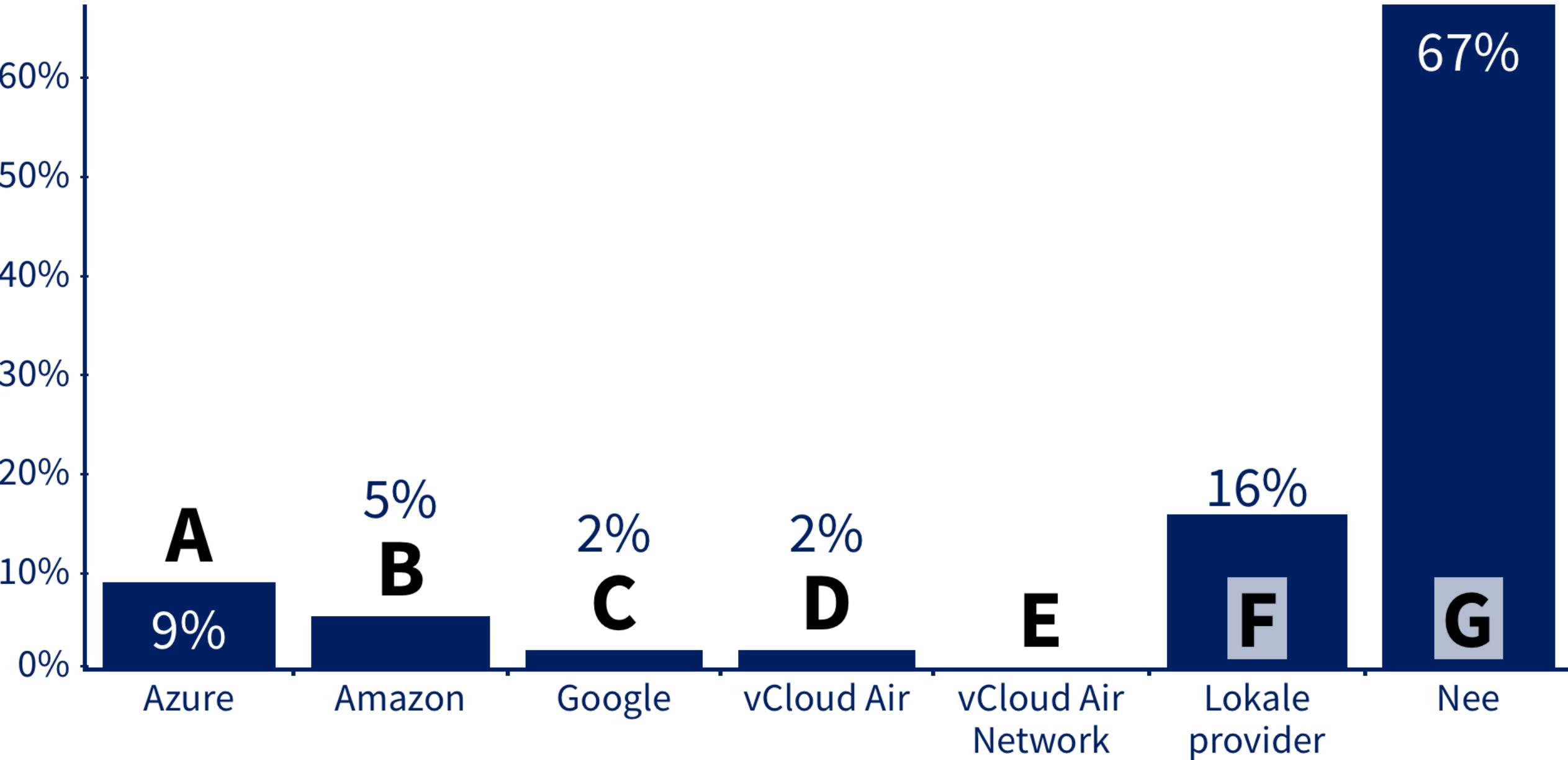
Disaster Recovery as a Service

VMware vCloud Air - propositie



Maakt u gebruik van public IaaS?

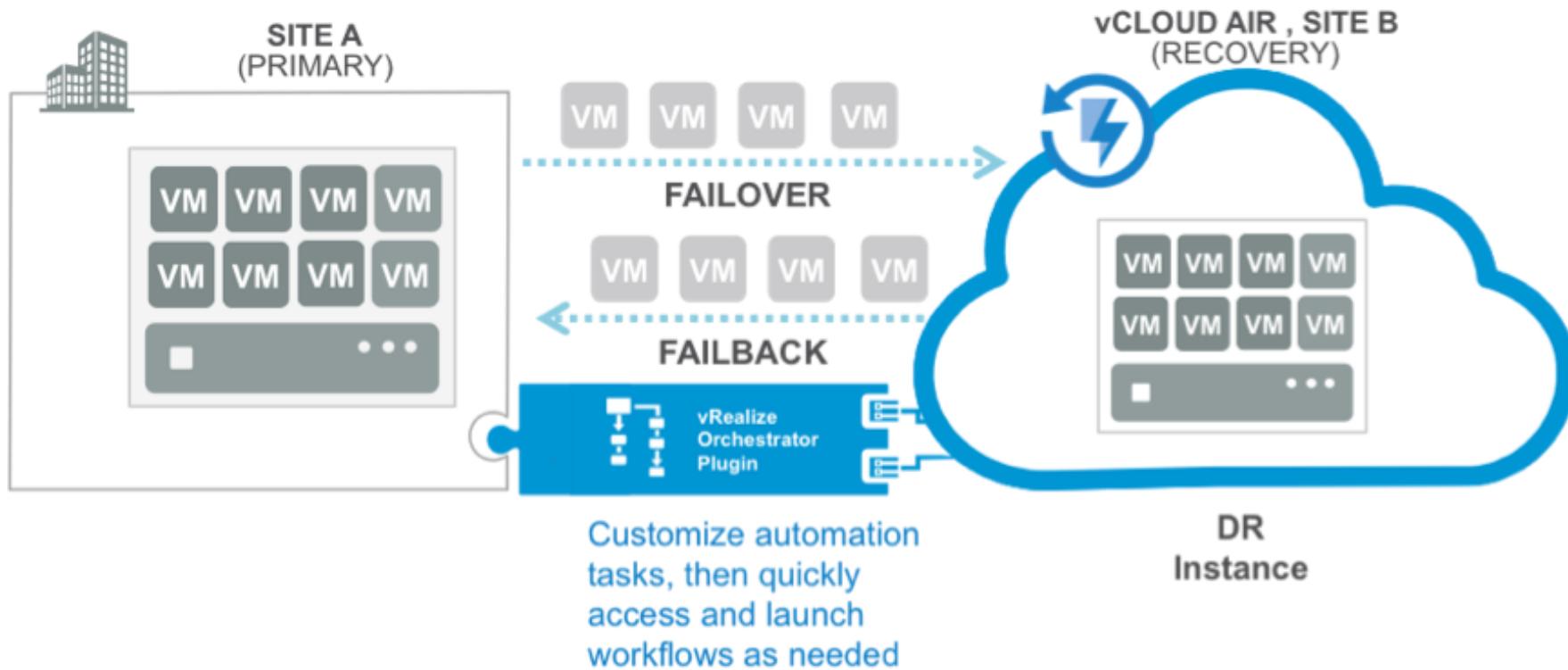
💻 Respond at PollEv.com/viktorious



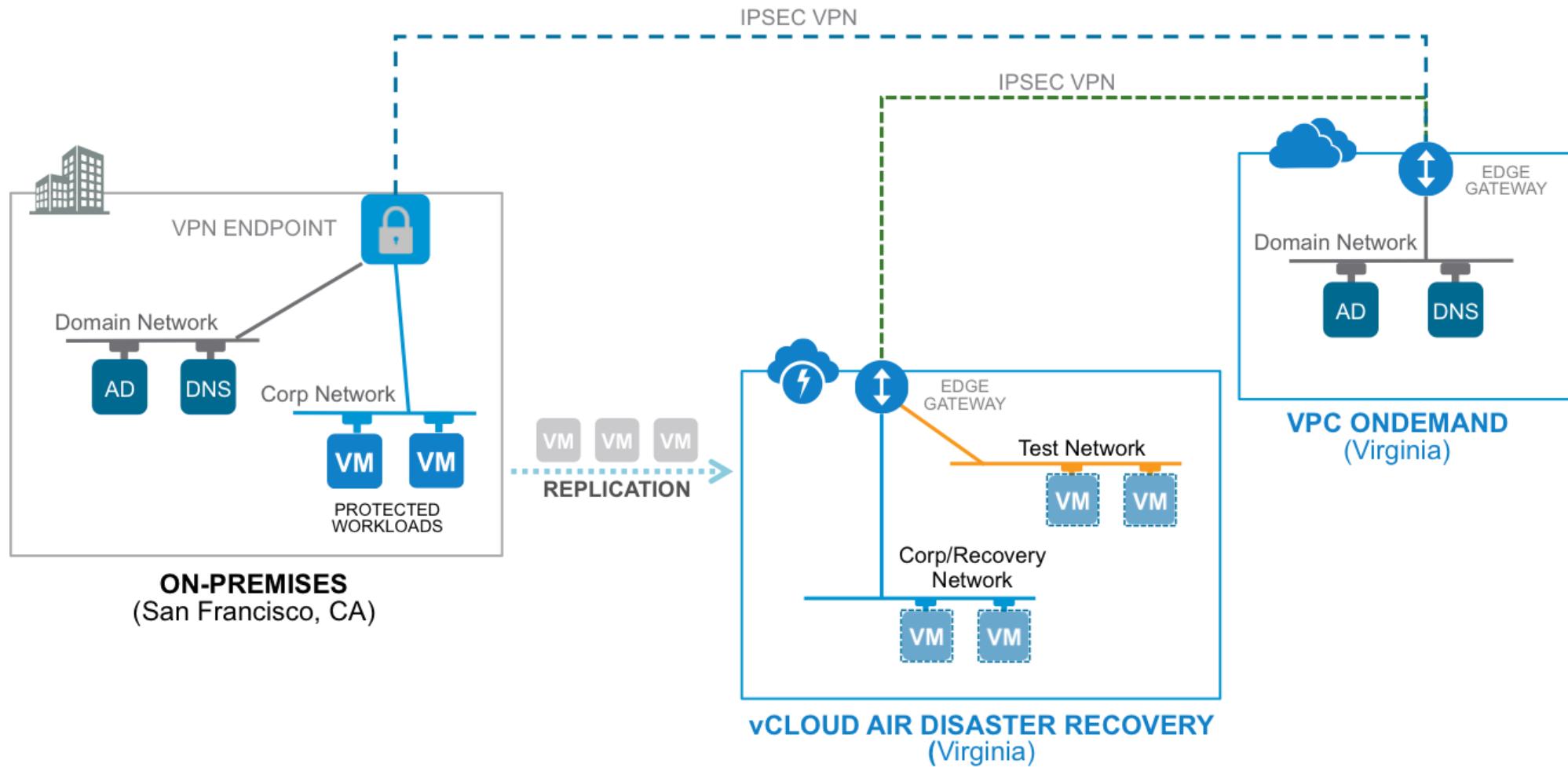
VMware vCloud Air DR

- Gebaseerd op vSphere Replication
- $15\text{min} < \text{RPO} < 24 \text{ uur}$
- Per virtuele machine replicatie
- Management vanuit vCenter WebClient
- Automation via vRealize Orchestrator plugin
- Test, DR en fallback opties beschikbaar
- Datacenter locaties: Duitsland, UK

vCloud Air DR



VMware vCloud Air DR



VMware vCloud Air DR - pricing

Select a Service: Disaster Recovery ▾

Currency: EUR ▾

Service	Included Resources	Price Per Month	Price Per Unit
Compute	20GB vRAM, 10GHz CPU	€216	€0.01 /GB/hr
Storage & Support	1TB Storage	€255	€0.26 /GB/mo
Bandwidth	10Mbps	€223	€0.03 /Mbps/hr
Public IPs	Priced per IP (2 included with base)	€58	€29 each
Optional Services			
Direct Connect - Cross Connect	1Gbps	€ 1,162	€1.59/port/hr
Offline Data Transfer	11TB One time Data Transfer	€ 238 each	€ 238 each

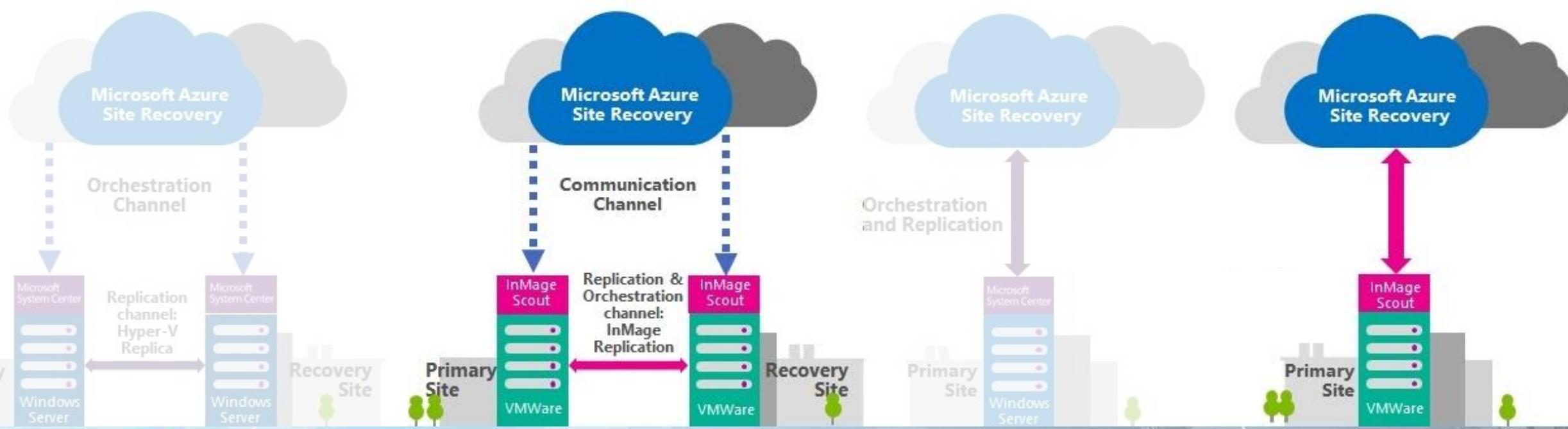
Hoe is het met SRM Air?

- Nieuw product, geen relatie met SRM
- Add-on voor vCloud Air DR
- SaaS offering - SRM as a Service
- Zelfde feature set als SRM
- Wellicht in de toekomst support voor on-premises scenario's

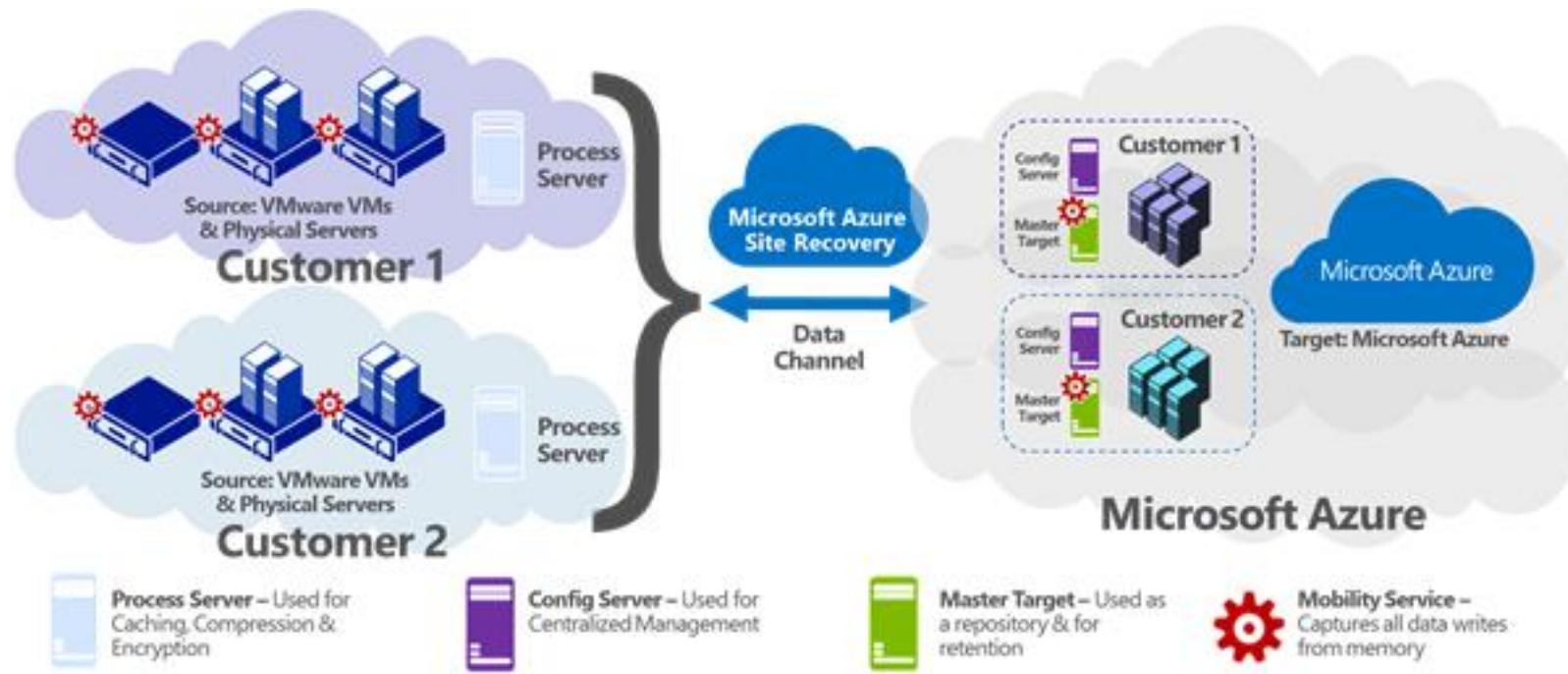
Microsoft Azure Site Recovery

- “Enhanced” ASR beschikbaar sinds begin 2016
- Maakt gebruik van in guest replicatie
- RPO ~ 0 minuten
- Per virtuele machine replicatie
- Management vanuit de Azure interface
- Orchestration engine + replication target
- On-premises ↔ on-premises + on-premises ↔ Azure
- Test, DR en fallback opties beschikbaar

Microsoft Azure Site Recovery



Microsoft Azure Site Recovery



Microsoft Azure Site Recovery - Pricing

		PRICE FOR FIRST 31 DAYS	PRICE AFTER 31 DAYS		
Azure Site Recovery to customer owned sites	Free		General purpose compute: Standard tier Offers the most flexibility. Supports all virtual machine configurations and features.		
Azure Site Recovery to Azure	Free				
	INSTANCE	CORES	RAM	DISK SIZES	PRICE
First 1 TB / Month	A0	1	0.75 GB	20 GB	€0.0169/hr (~€13/mo)
Next 49 TB (1 to 50 TB) / Month	A1	1	1.75 GB	70 GB	€0.0759/hr (~€56/mo)
Next 450 TB (50 to 500 TB) / Month	A2	2	3.5 GB	135 GB	€0.1518/hr (~€113/mo)
Next 500 TB (500 to 1,000 TB) / Month	A3	4	7 GB	285 GB	€0.3036/hr (~€226/mo)
Next 4,000 TB (1,000 to 5,000 TB) / Month	A4	8	14 GB	605 GB	€0.6072/hr (~€452/mo)
Over 5,000 TB / Month	A5	2	14 GB	135 GB	€0.2867/hr (~€213/mo)
	A6	4	28 GB	285 GB	€0.5734/hr (~€427/mo)
	A7	8	56 GB	605 GB	€1.1469/hr (~€853/mo)
			Contact us	Contact us	Contact us



Microsoft Azure VM SLA

“For all Internet facing Virtual Machines that have two or more instances deployed in the same Availability Set, we guarantee you will have external connectivity at least 99.95% of the time.”

"Availability Set" refers to two or more Virtual Machines deployed across different Fault Domains to avoid a single point of failure.

"Fault Domain" is a collection of servers that share common resources such as power and network connectivity.

Why is there no Live Migration before host maintenance like we can implement with Hyper-V's Failover Clustering [Cluster Aware Updating](#) (CAU)? Believe it or not, Azure doesn't perform Live Migration. In Microsoft's opinion, no single virtual machine should be so important when you're working in Azure; it's all a part of Jeffrey Snover's outlook on “treating your servers like cattle, not as pets.” This can prove to be incompatible with some workloads, as you will find out.

DRaaS

Voors

- Geen initiële investering
- Standaard dienst
- Simpel
- OpEx model
- Ontzorging

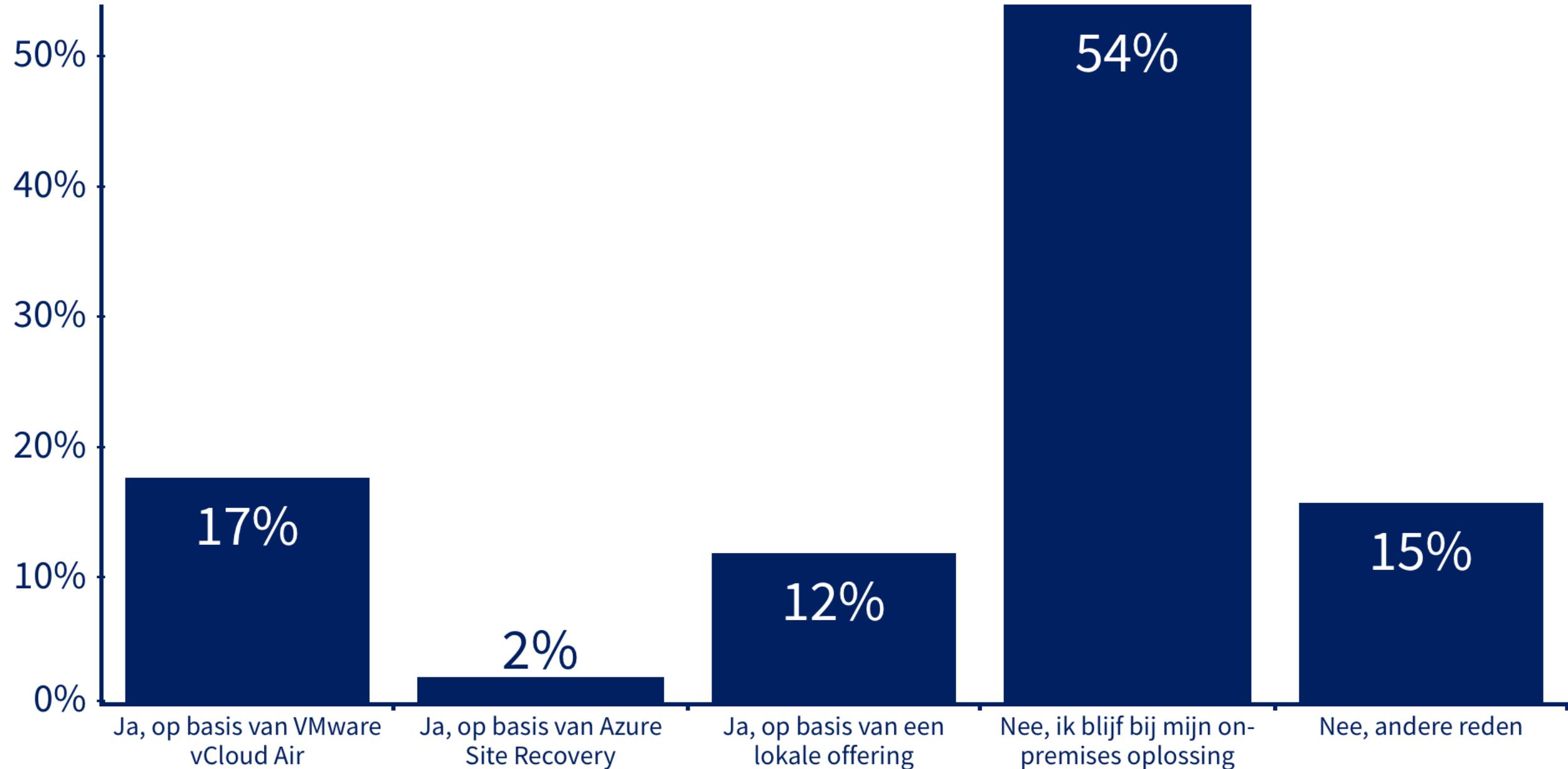
Tegens

- Beperkte locatie keuze
- Geen totale controle
- Afhankelijk van de offering
- Ondoordringende kosten

Is DRaaS wellicht voor u een geschikte oplossing?



Respond at PollEv.com/viktorious



WhatMatrix.com

The screenshot displays the WhatMatrix.com interface for comparing three virtual replication products: Zerto, VMware, and Microsoft Hyper-V Replica.

Header: Features a navigation bar with links for Log In, Join Now, HOME, COMPARISON (which is highlighted), COLLABORATION, BLOG, and ABOUT. The WhatMatrix logo is also present.

Top Bar: A horizontal navigation bar with icons for Search (magnifying glass), Select (arrow), Review (eye), Improve (up arrow), Create Report! (printer), and Tour (person icon).

User Profile: Shows a profile picture of Viktor van den Berg and his name.

Content Header: "Content Provided by Viktor van den Berg" and "viktorious.nl". Includes a link to "DR for Virtual Environments" and the URL "http://www.viktorious.nl/".

Ratings: A section showing support levels: Fully Supported (+2), Limitation (+1), No/Min Support (0), and Information only (0). It lists specific features for each product.

Matrix Score: A bar chart comparing the scores of the three products: Zerto (46), VMware (47), and Microsoft (28).

Comparison Table: A grid comparing the three products across four categories: CONTENT CREATOR, OVERVIEW, MATURITY, and LICENSE MODEL (\$). Each cell contains a brief description and an information icon (i).

Call-to-Action: A "Select Improvement!" button with a placeholder for "Your PRODUCT", "Your Company", and a "Demo Widget" button.



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viktorious.nl
virtualization & cloud management

 **What
Matrix**

TECH UNPLUGGED

Een woord voor deze sessie...

Respond at PollEv.com/viktorious

A word cloud visualization where the size and color of each word represent its frequency or importance. The most prominent word is 'top' in a large, dark blue font. Other significant words include 'interesting' (large, dark purple), 'honger' (large, grey), 'super' (large, dark blue), 'high' (medium, dark grey), 'donald' (large, dark red), 'geweldig' (large, dark red), 'voorspelbaar' (large, dark grey), 'bedankt' (large, dark grey), 'dr' (medium, dark grey), 'jv|46' (medium, blue), 'azure' (small, light blue), 'mickey' (large, purple), 'rulez' (large, green), 'rule' (large, green), 'blonkit' (large, green), 'clear' (large, purple), 'informaticef' (large, red), 'gaaf' (large, blue), 'goed' (large, red), 'henk' (large, dark blue), 'hci' (large, grey), 'uitstekend' (large, red), 'duck' (large, dark grey), 'level' (large, green), 'viktoty' (large, green), 'disaster' (large, red), 'helder' (large, dark grey), 'lunch' (large, dark grey), 'best' (large, red), 'rete' (large, green), 'etu' (large, green), 'rules' (large, dark grey), 'vcloudair' (large, dark grey), 'interessant' (large, dark purple), 'awesone' (large, dark grey), and 'enthousiast' (large, dark grey).



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