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VMware vSphere 5

What's New!

Bram de Laat, Marek Zdrojewski, Jan van Leuken

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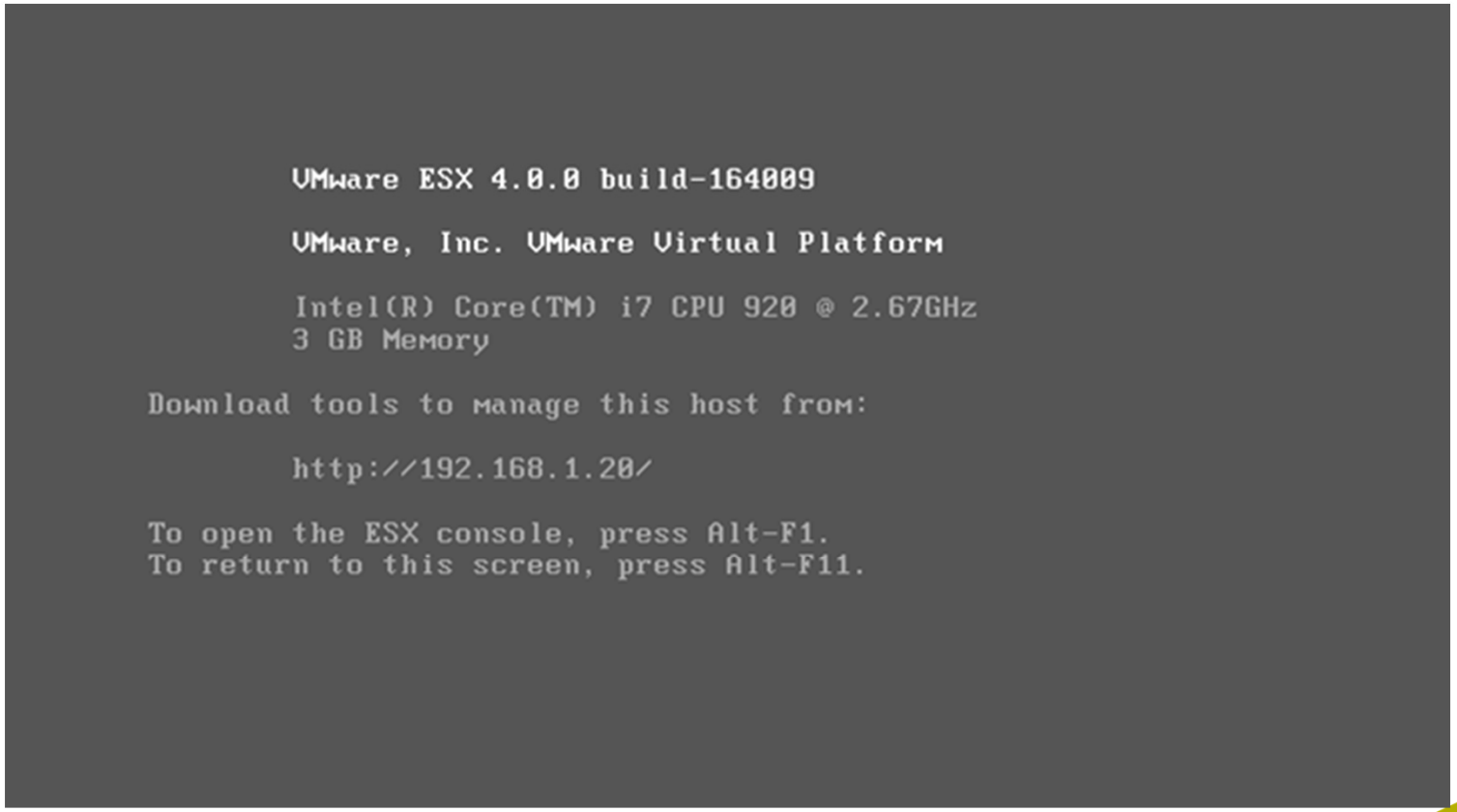

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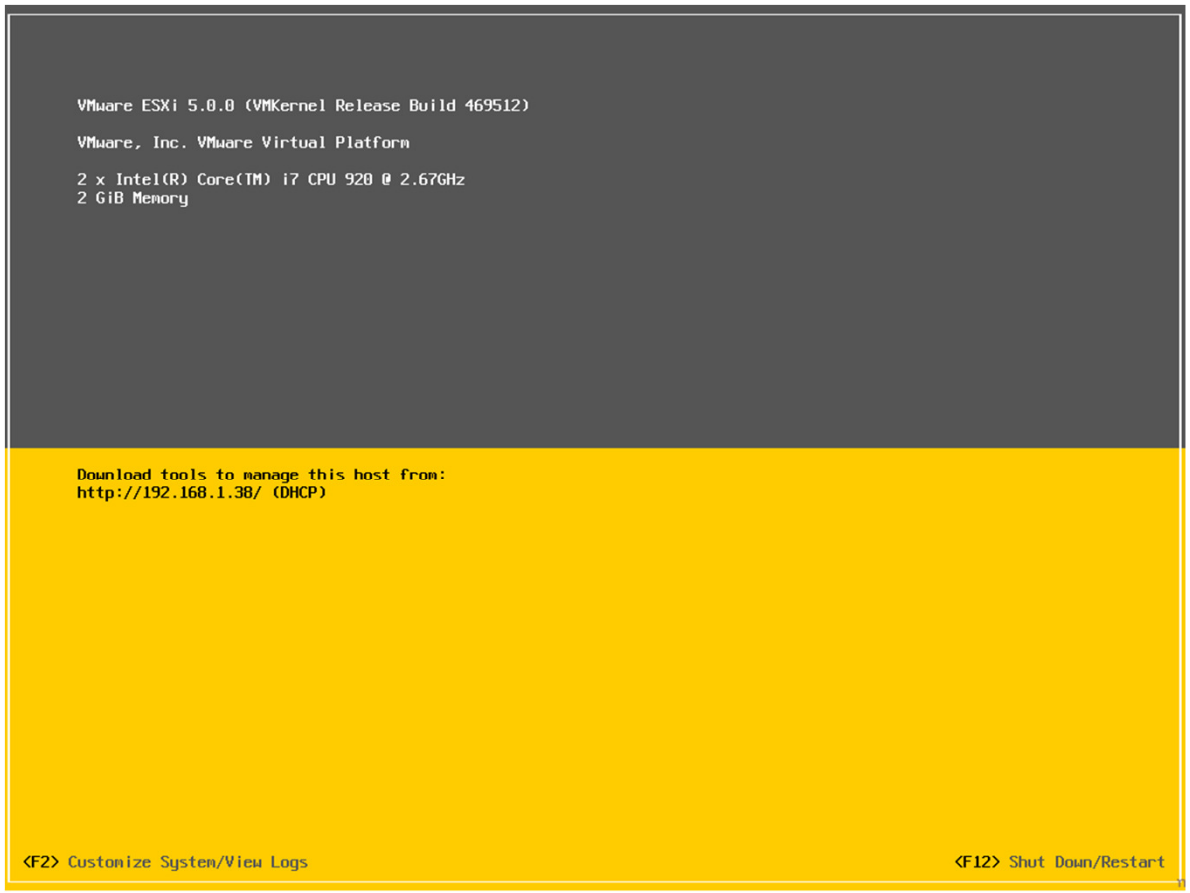
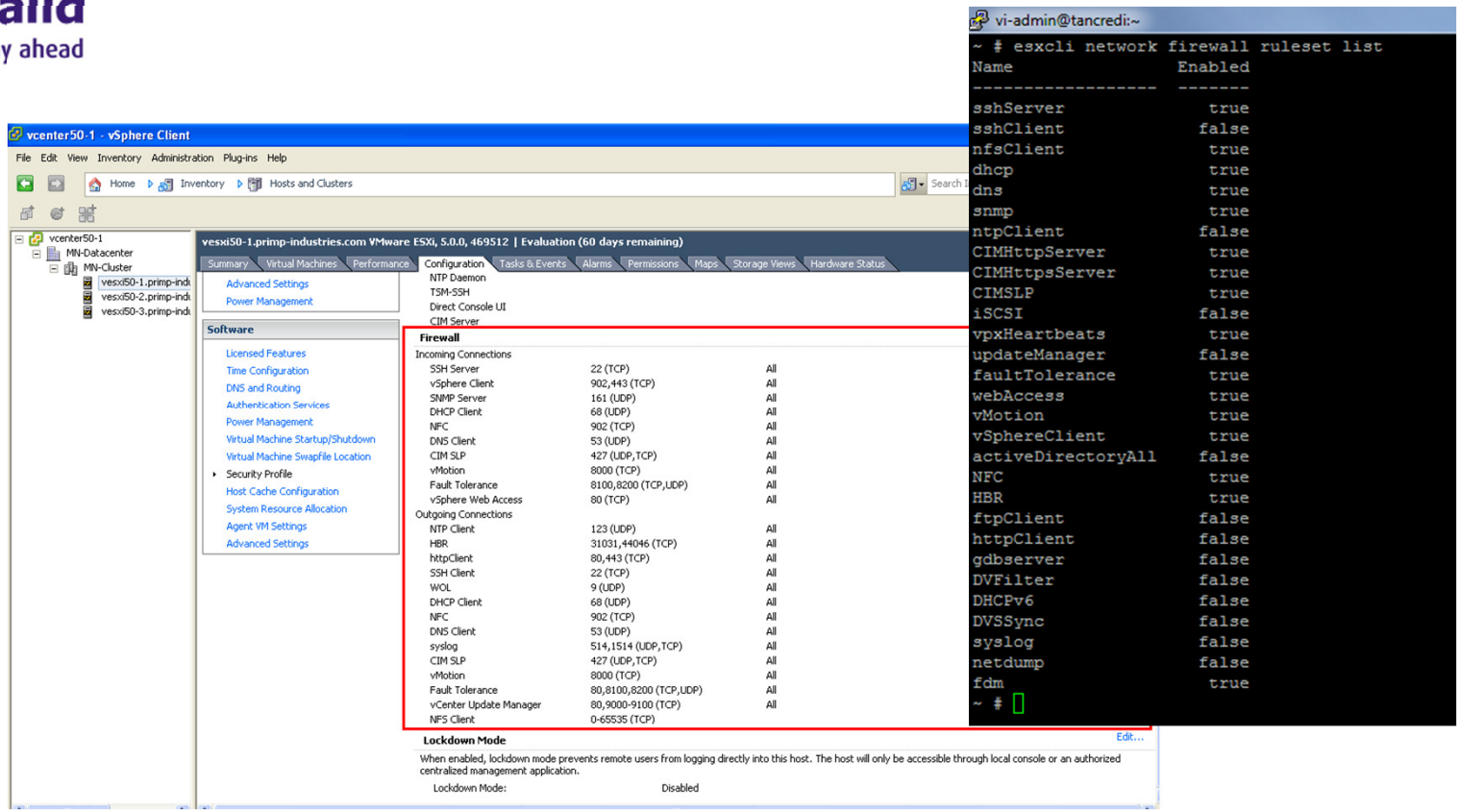


ESXi firewall



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Hardware versie 8

- Limieten weer hoger:
  - 32 vCPU's (Multi-core Virtual CPU Support)
  - Max 1TB ram
- HD Audio
- USB 3.0 support

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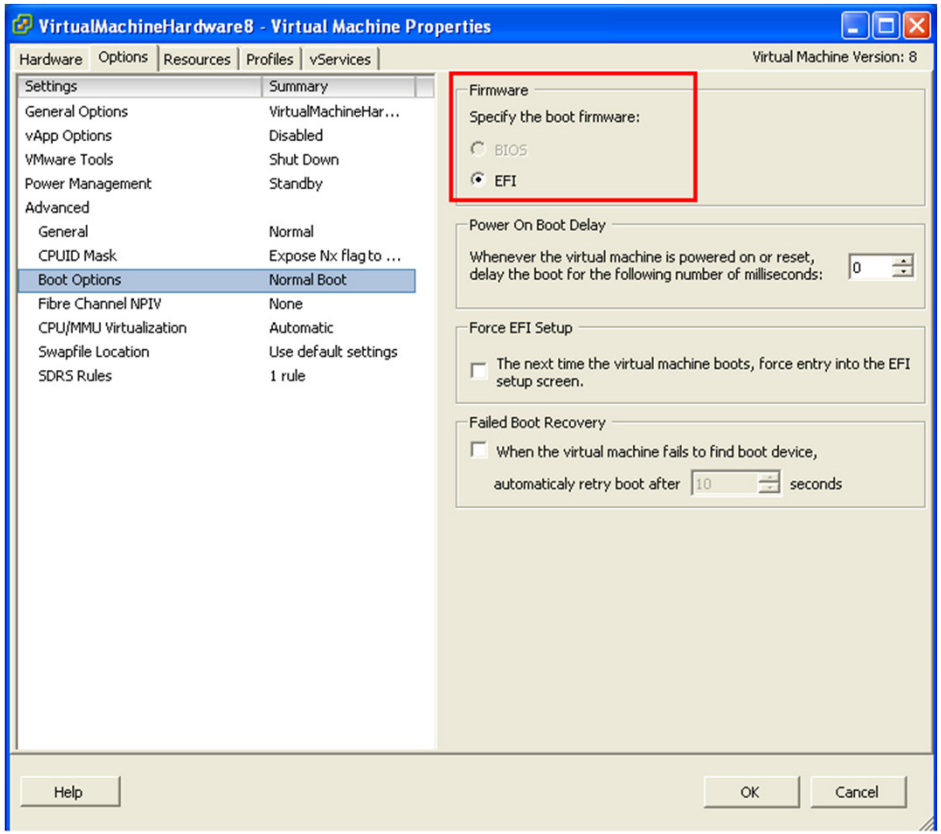
Hardware versie 8



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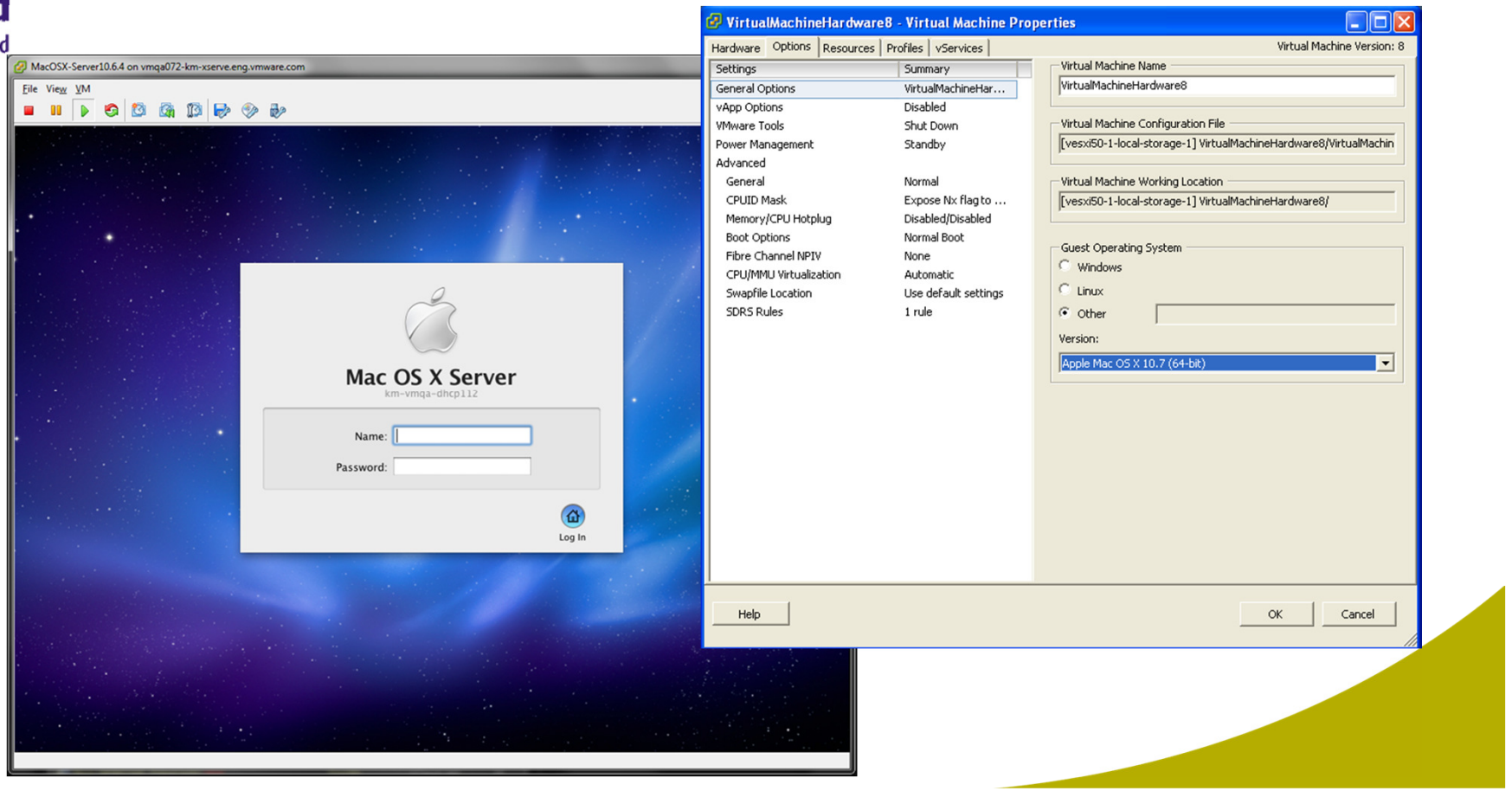
Hardware versie 8



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Data Object - HostHardwareInfo

Property of
HostSystem

Extends
DynamicData

See also
HostBIOSInfo, HostCpuIdInfo, HostCpuInfo, HostCpuPackage, HostCpuPowerManagementInfo, HostNumaInfo, HostPciDevice, HostSystemInfo

Data Object Description

The HardwareInfo data object type describes the hardware configuration of the host.

Properties

NAME	TYPE	DESCRIPTION
biosInfo*	HostBIOSInfo	Information about the system BIOS ***Since*** VI API 2.5
cpuFeature*	HostCpuIdInfo[]	CPU feature set that is supported by the hardware. This is the intersection of the feature sets supported by the individual CPU packages. This feature set is modified by the supportedCpuFeature array in the host capabilities to obtain the feature set supported by the virtualization platform.
cpuInfo	HostCpuInfo	Overall CPU information.
cpuPkg	HostCpuPackage[]	Information about each of the physical CPU packages on the host.
cpuPowerManagementInfo*	HostCpuPowerManagementInfo	***Since*** vSphere API 4.0
memorySize	xsd:long	Total amount of physical memory on the host in bytes.
numaInfo*	HostNumaInfo	Information about the NUMA (non-uniform memory access).
pciDevice*	HostPciDevice[]	The list of Peripheral Component Interconnect (PCI) devices available on this host.
smcPresent	xsd:boolean	Presence of System Management Controller, indicates the host is Apple hardware, and thus capable of running Mac OS guest as VM. ***Since*** vSphere API 5.0
systemInfo	HostSystemInfo	Information about the system as a whole.

pid=ha-host&doPath=hardware
marks now...

VALUE
biosInfo
cpuFeature
cpuInfo
cpuPkg
cpuPowerManagementInfo
Unset
Unset

memorySize	long	4294430720
numaInfo	HostNumaInfo	numaInfo
pciDevice	HostPciDevice[]	pciDevice
smcPresent	boolean	false
systemInfo	HostSystemInfo	systemInfo

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VMFS5

- Max volume size 64TB
- GPT in plaats van MBR
- Fixed blocksize: 1MB
- **Helaas: de MAX VMDK size is nog steeds 2TB**
- RDM’s MAX 64TB

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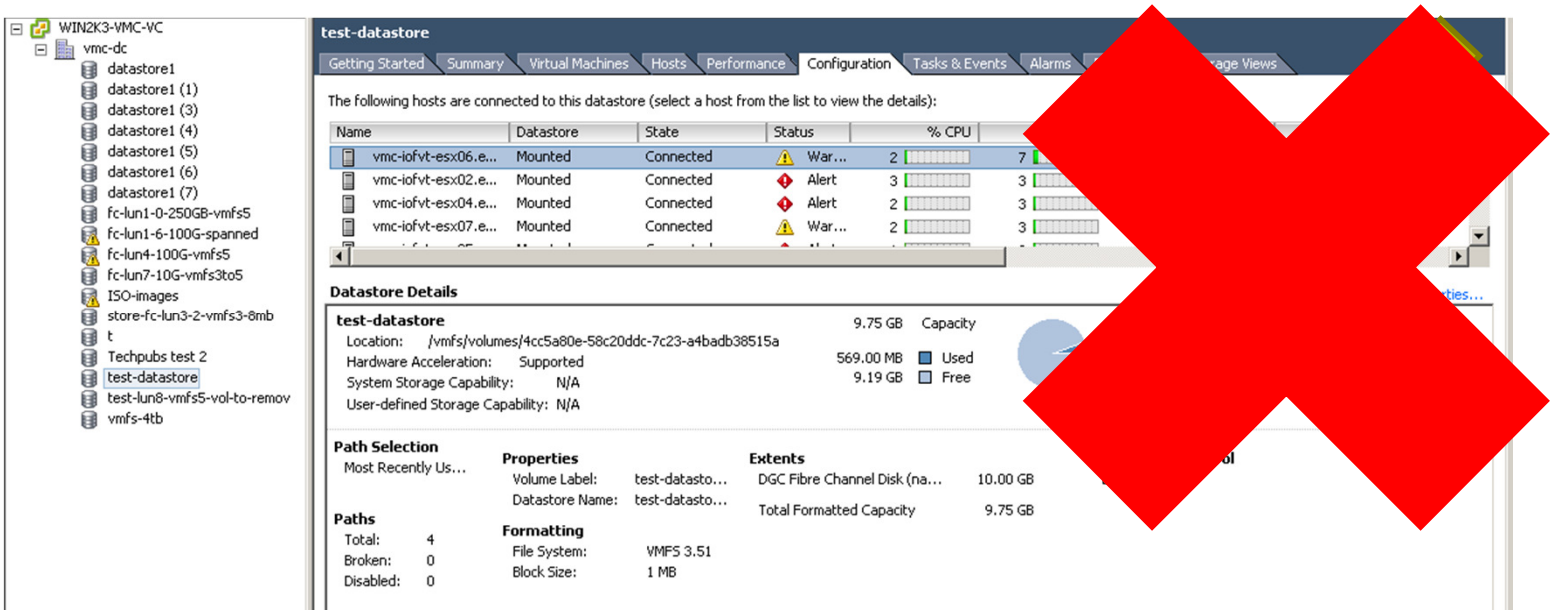
Upgraden naar VMFS5



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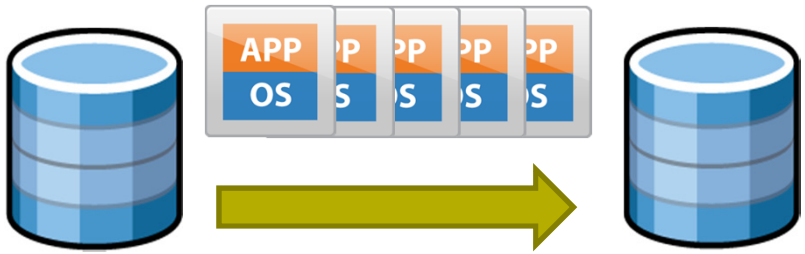
Storage vMotion

- Nieuwe mirroring architectuur ->sneller
- Snapshot support
- Linked clones support



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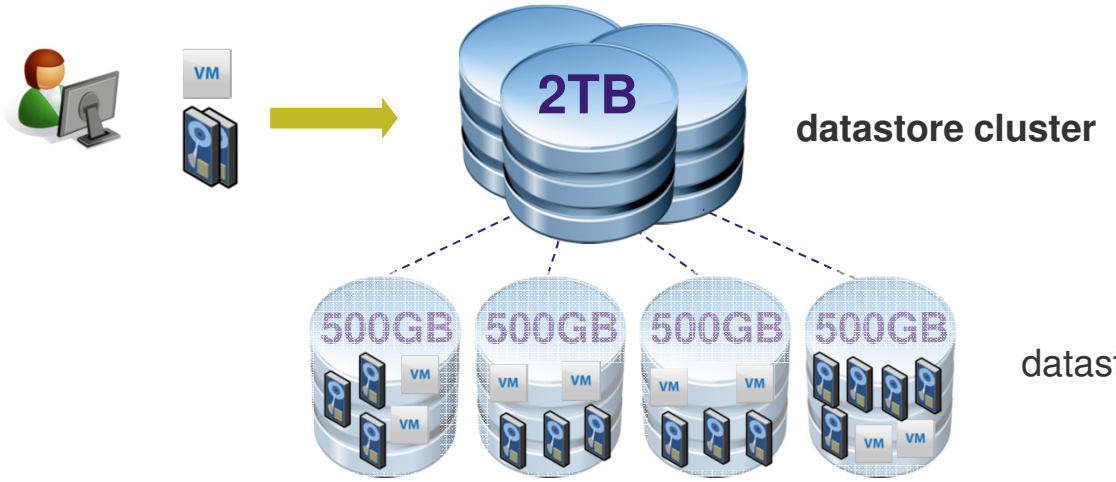
Storage DRS

- Initial placement
- Load balancing in datastore cluster
- Load balancing via storage vmotion



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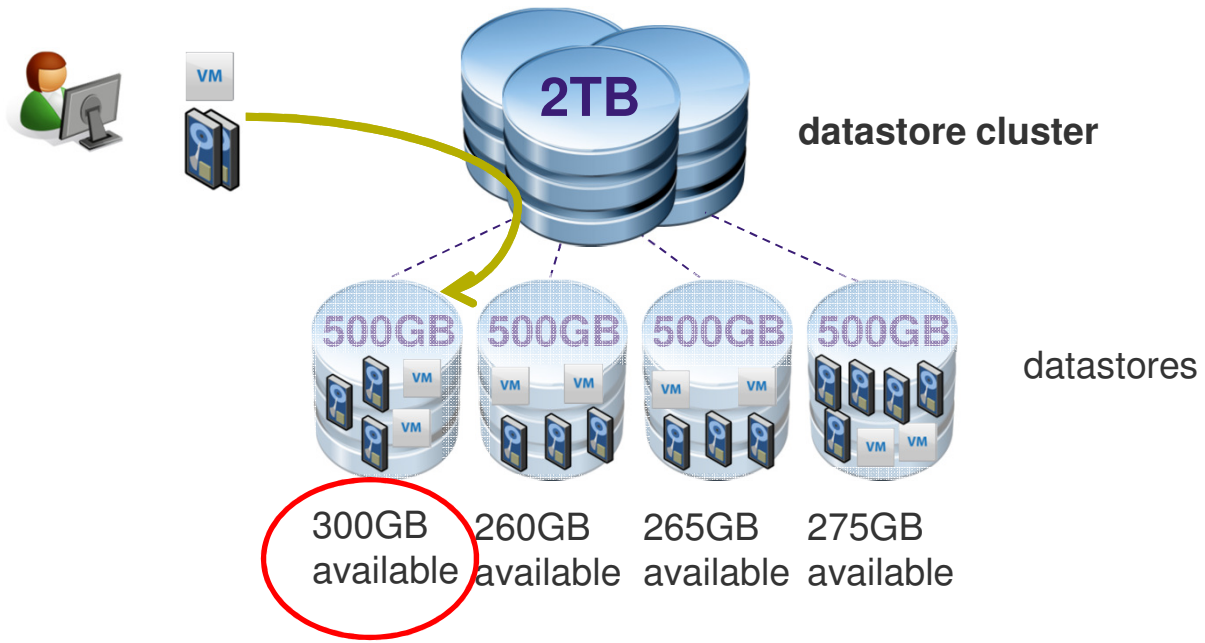
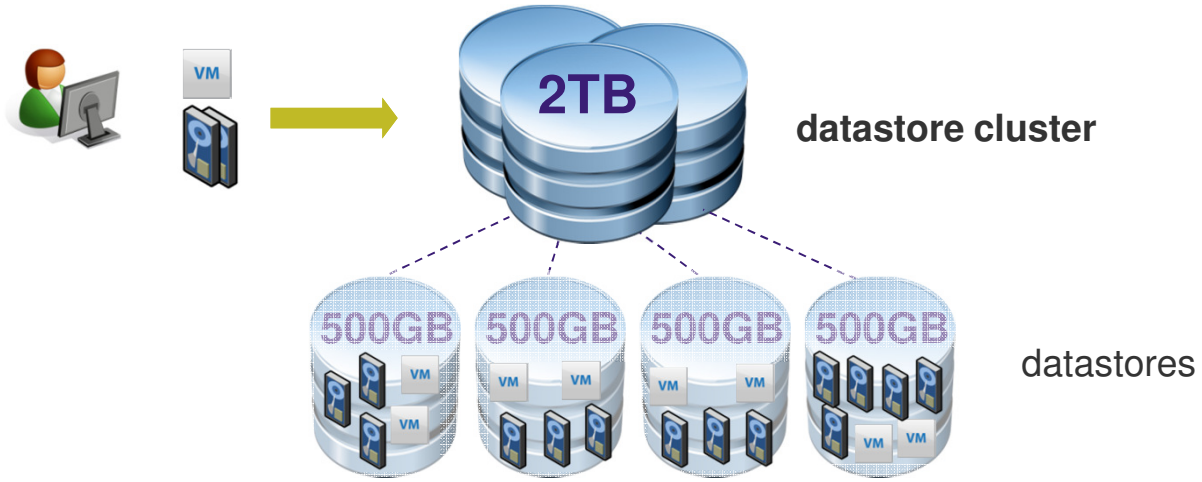
Storage DRS – Initial placement



Storage DRS – Datastore Maintenance

- Verplaatsen van alle VMs en VMDKs



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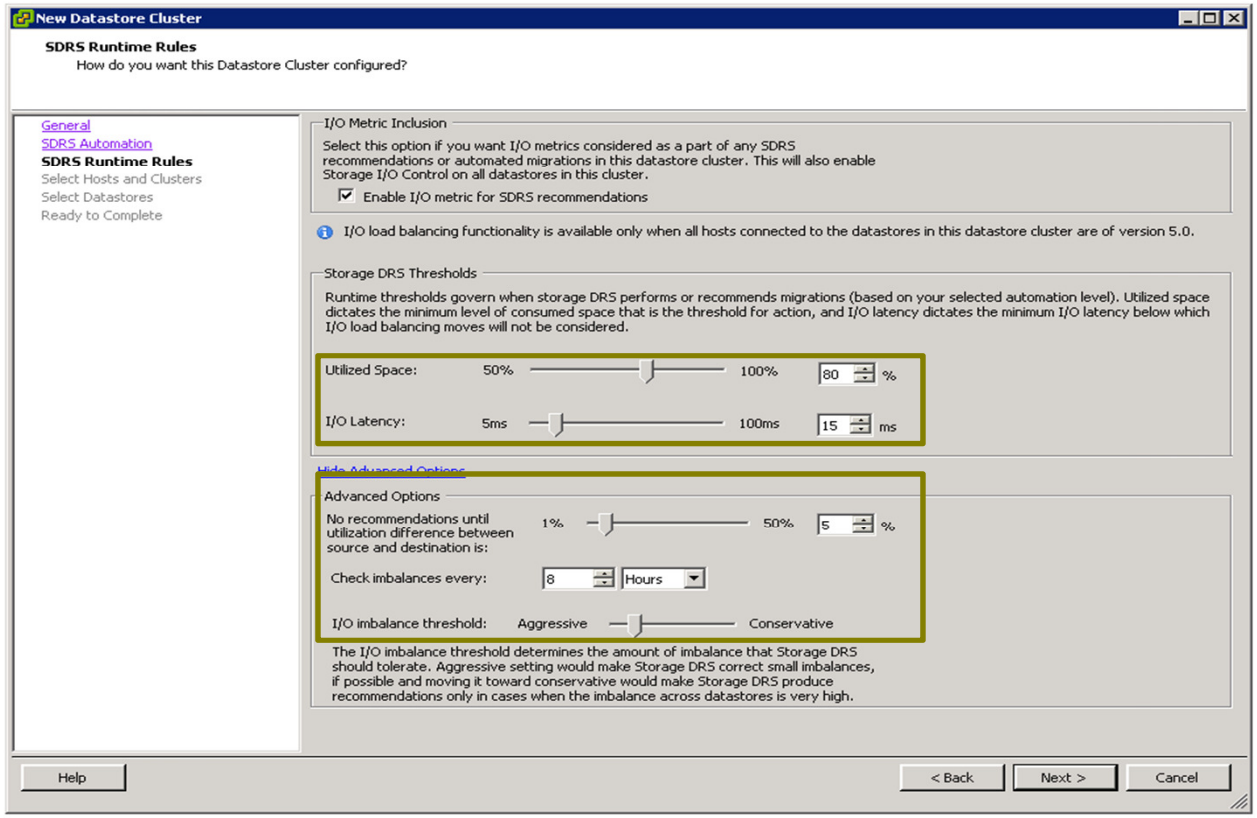
Storage DRS – Load balancing



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Storage DRS - in praktijk

Voor

Na

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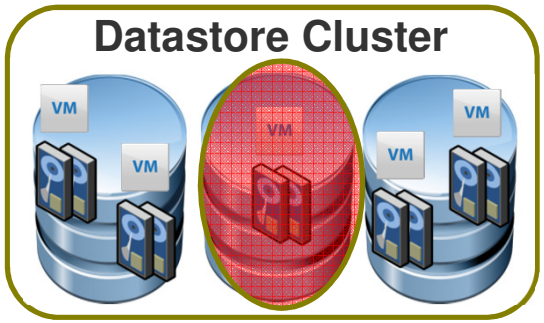
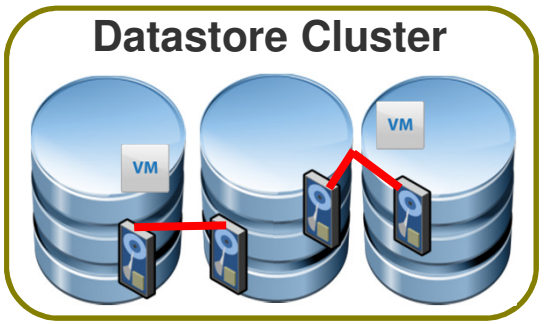
Storage DRS - Rules

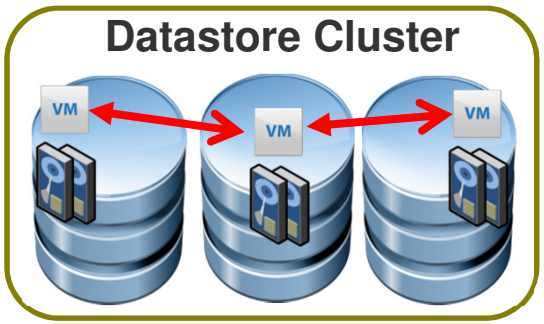
VMDK affinity



VMDK anti-affinity



VM anti-affinity



Storage Profile driven storage

- Goud-Zilver-Brons

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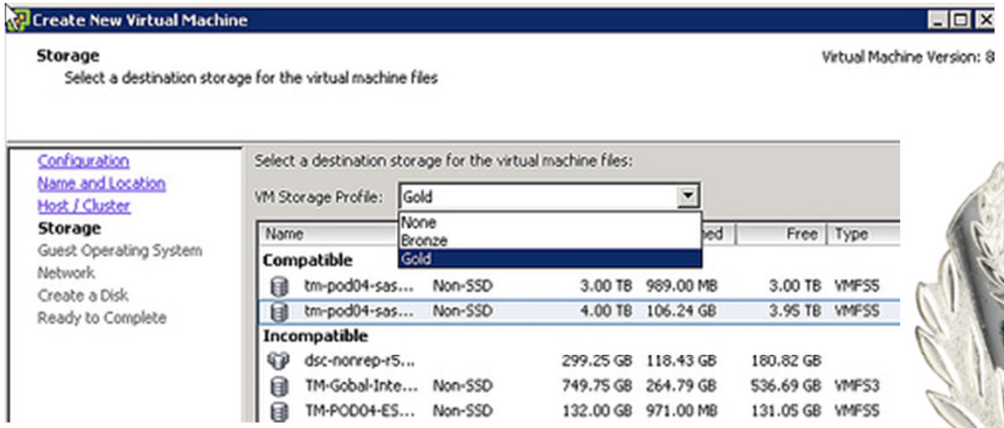
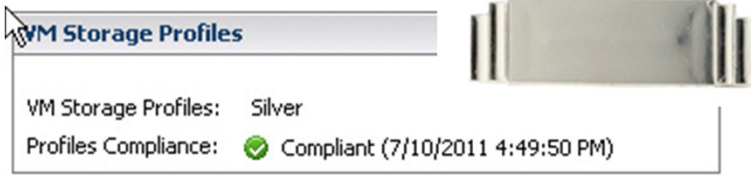
Storage Profile driven storage





Compliant aan profile/SLA.

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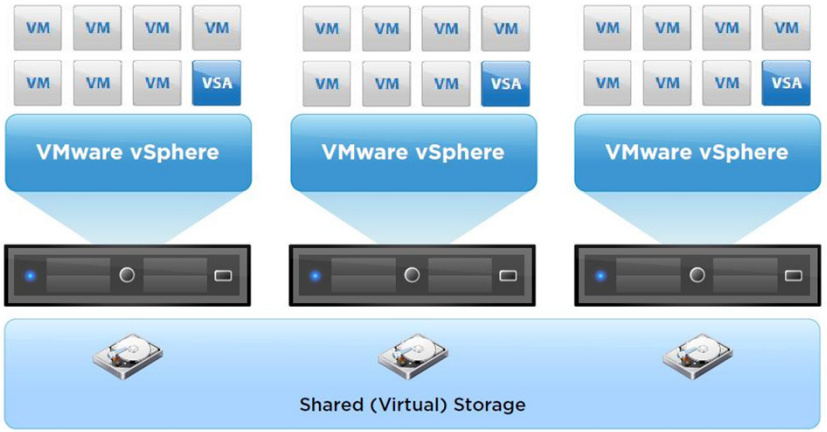
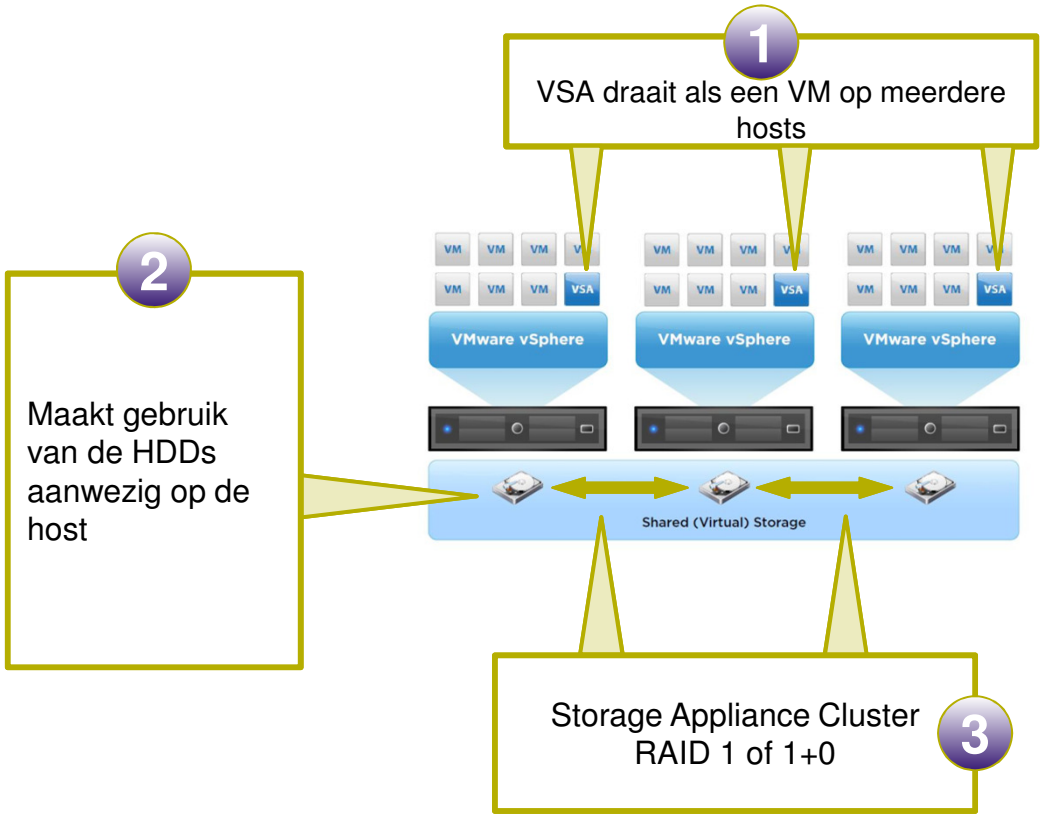
Virtual Storage Appliance

- Virtueel SAN op basis van SLES 11
- Storage Clustering Services
- Draait op meerdere ESXi hosts
- Vormt samen een Storage Appliance Cluster



Virtual Storage Appliance



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Virtual Storage Appliance

2 x ESXi 5.0 host en vCenter Server

- Cluster Service op de vCenter Server

3 x ESXi 5.0 host

- Cluster Service op de host

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Virtual Storage Appliance

- Wat zijn de voordelen?
  - Geen extra hardware nodig
  - Snelle uitrol
  - Beheer via vCenter Server

- Zijn er ook beperkingen?
  - Compatibel met vSphere 5
  - Schone installatie nodig

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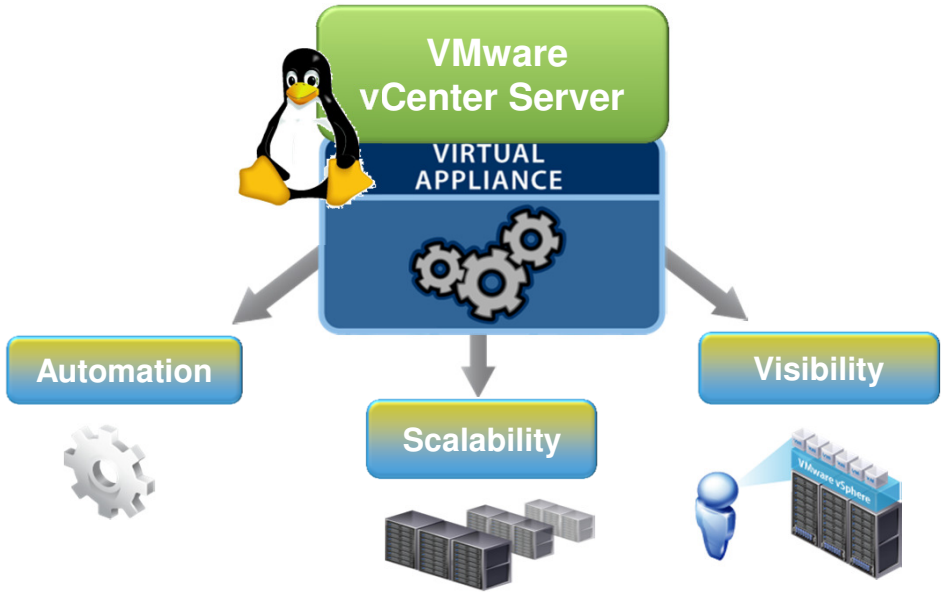
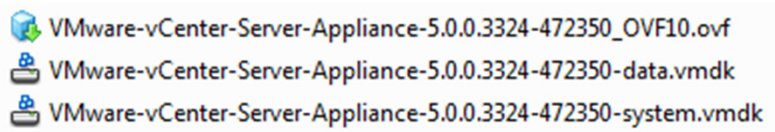
vCenter Server Appliance



vCenter Server Appliance

- Wat is vCenter Server Appliance (vCSA)?
  - Een pre-packaged 64-bit applicatie op SLES 11 in OVF, ZIP of VMX formaat



  - Benodigde disk ruimte

Distro	Minimaal	Maximaal
3.6 GB	~5 GB	~80 GB

  - Geheugen
    - Standaard installatie ongeveer 2 GB
    - Afhankelijk van de omgeving; 4 GB of meer

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vCenter Server Appliance

- Database
  - Maakt gebruik van een embedded DB2 Express DB
  - Limieten zijn gelijk aan de vCenter Server op Windows
    - Embedded DB2 Express:
      - 5 ESXi hosts / 50 VMs
    - Externe Oracle DB
      - 300 ESXi hosts / 3.000 VMs (64-bit)
- User Interface
  - Web browser
  - vSphere Client

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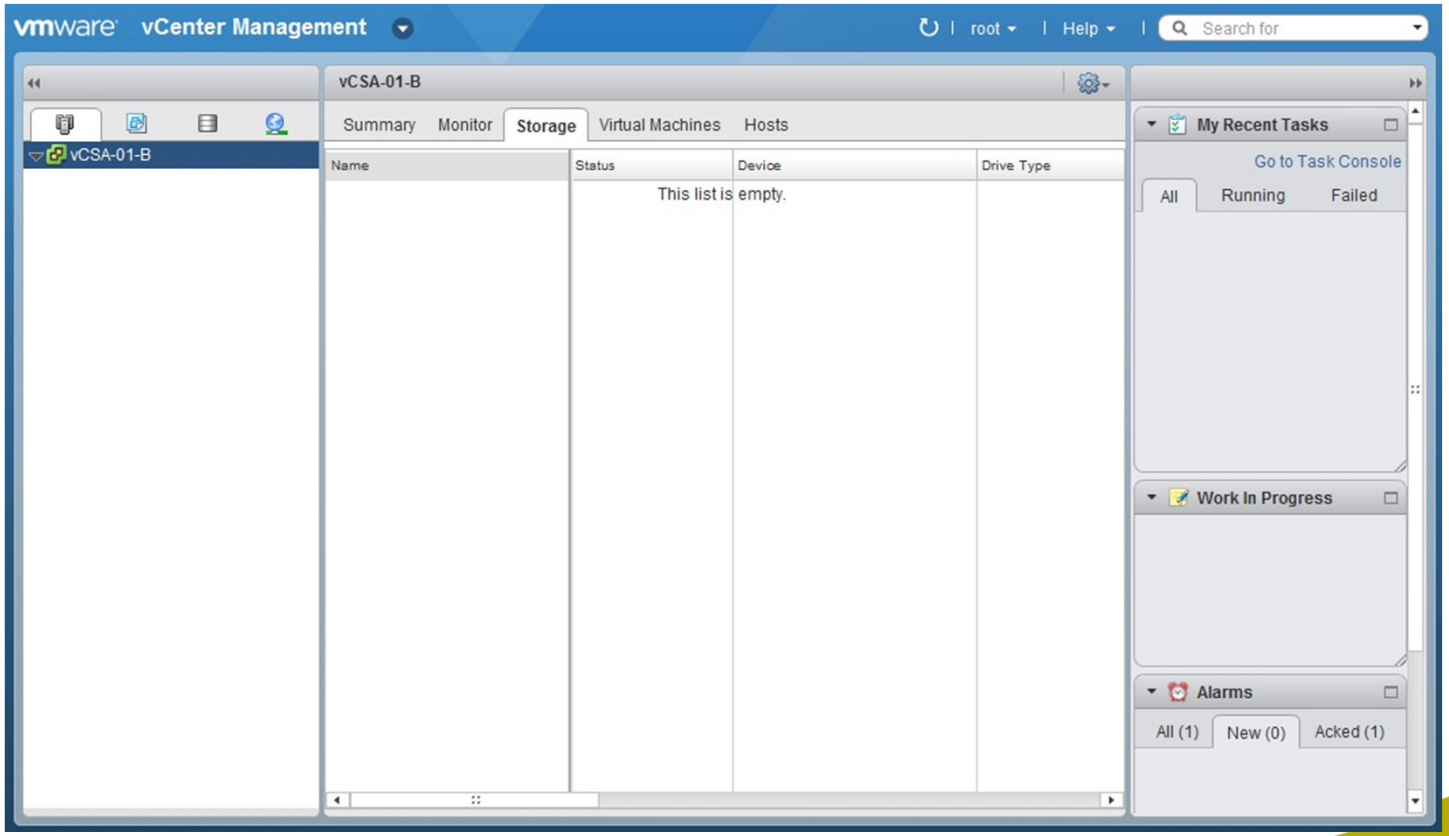
vCenter Server Appliance



vCenter Server Appliance

- Voordelen van vCSA
  - Snel uitrol (~5-10 minuten)
  - Authenticatie via AD of NIS
  - Ondersteund vSphere Web Client enz…
  - Geen Windows licentie nodig
  - Minder patches/upgrades dus makkelijker beheer

- Zijn er ook beperkingen?
  - Linked mode
  - IPv6
  - Externe database
    - Externe DB kan alleen Oracle zijn
  - vCenter Server Heartbeat support
    - HA wordt geregeld door vSphere HA

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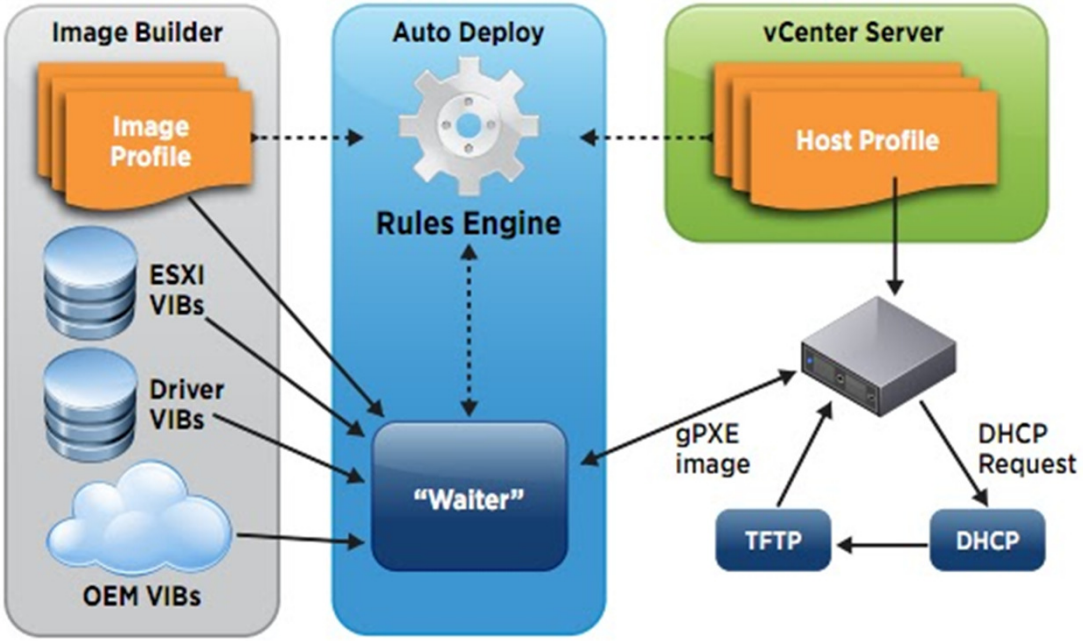
Autodeploy



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Autodeploy

- Wat is Autodeploy?
  - Een nieuwe methode om de ESXi hosts uit te rollen
  - Gebaseerd op PXE boot (DHCP/TFTP)
  - Maakt gebruik van:
    - Image Builder: Image Profiles
    - vCenter Server: Rules bestanden, Host Profiles, Answer files
    - Autodeploy Server: beheert Rules

- Voordelen:
  - Geen boot disk meer nodig (HDD, SD kaart of USB key)
  - Host image onafhankelijk van de server
  - Snelle uitrol
  - Geen pre/post installatie scripts nodig
  - Consistente reboot

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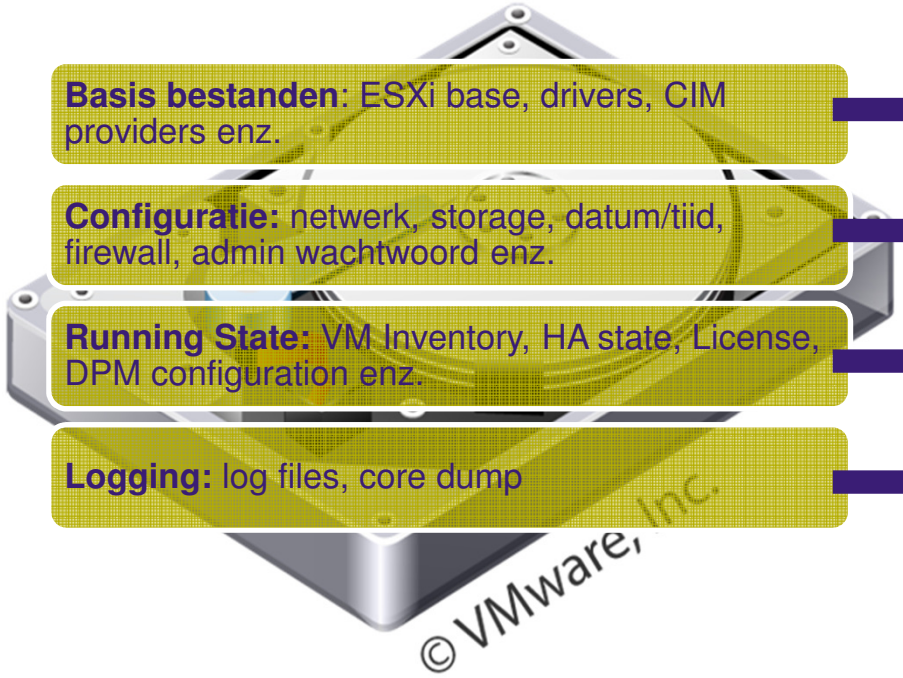
Autodeploy

- Geen boot disk? Okay… waar staat het dan?



Basis bestanden: ESXi base, drivers, CIM providers enz. → **Image Profile**

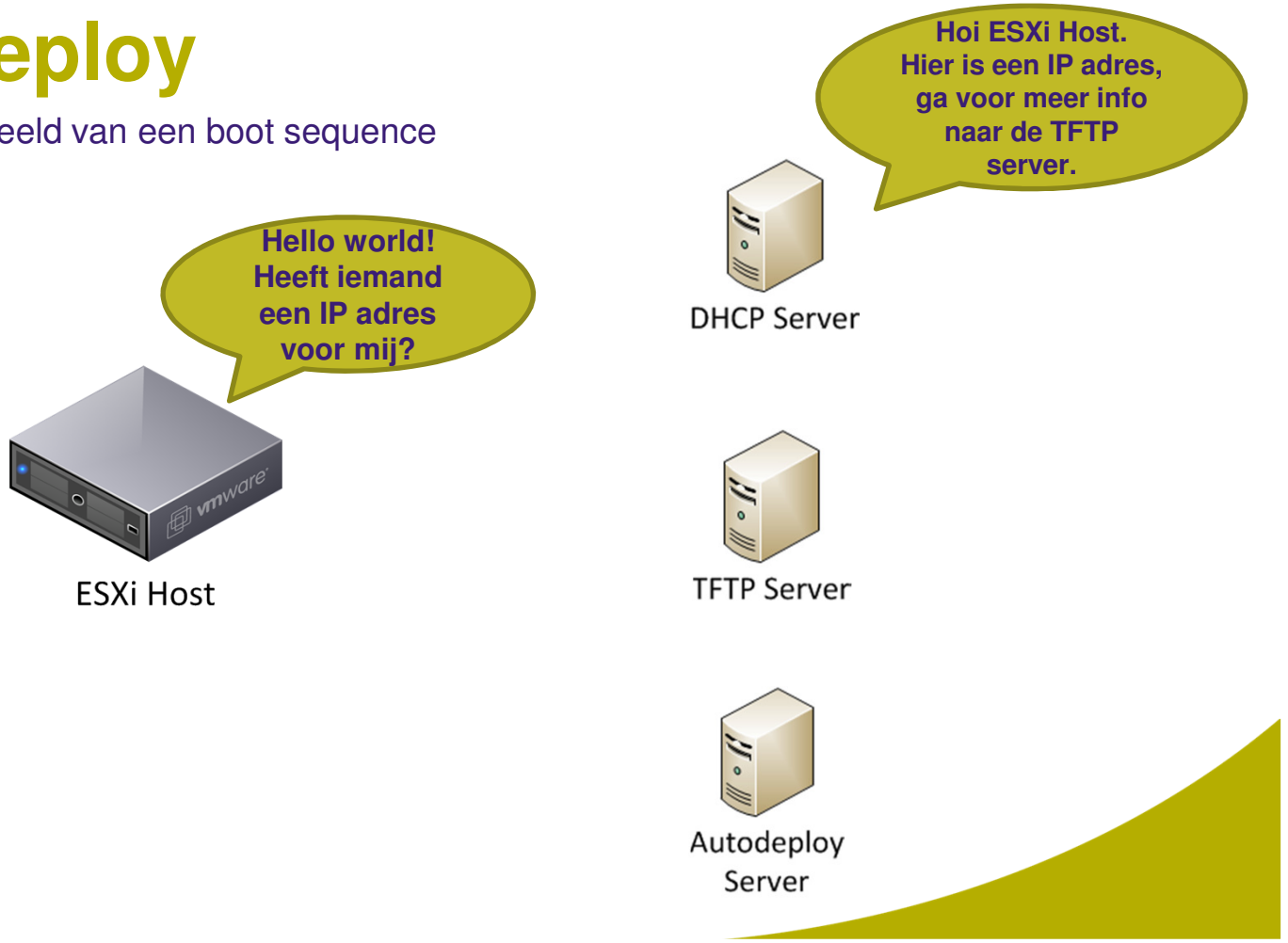
Configuratie: netwerk, storage, datum/tiid, firewall, admin wachtwoord enz. → **Host Profile**

Running State: VM Inventory, HA state, License, DPM configuration enz. → **vCenter Server**

Logging: log files, core dump → **Add-on Componenten**

Autodeploy

- Voorbeeld van een boot sequence



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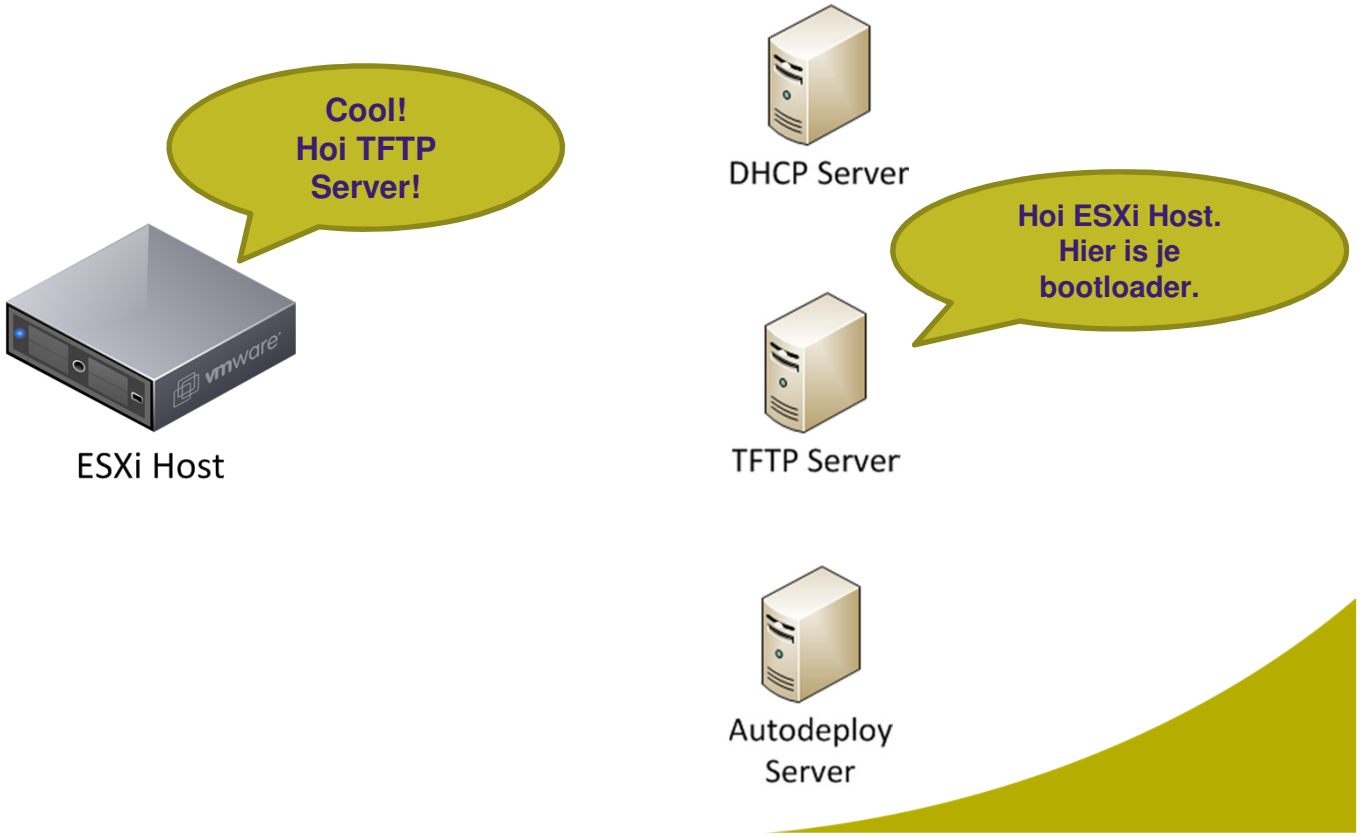
Autodeploy



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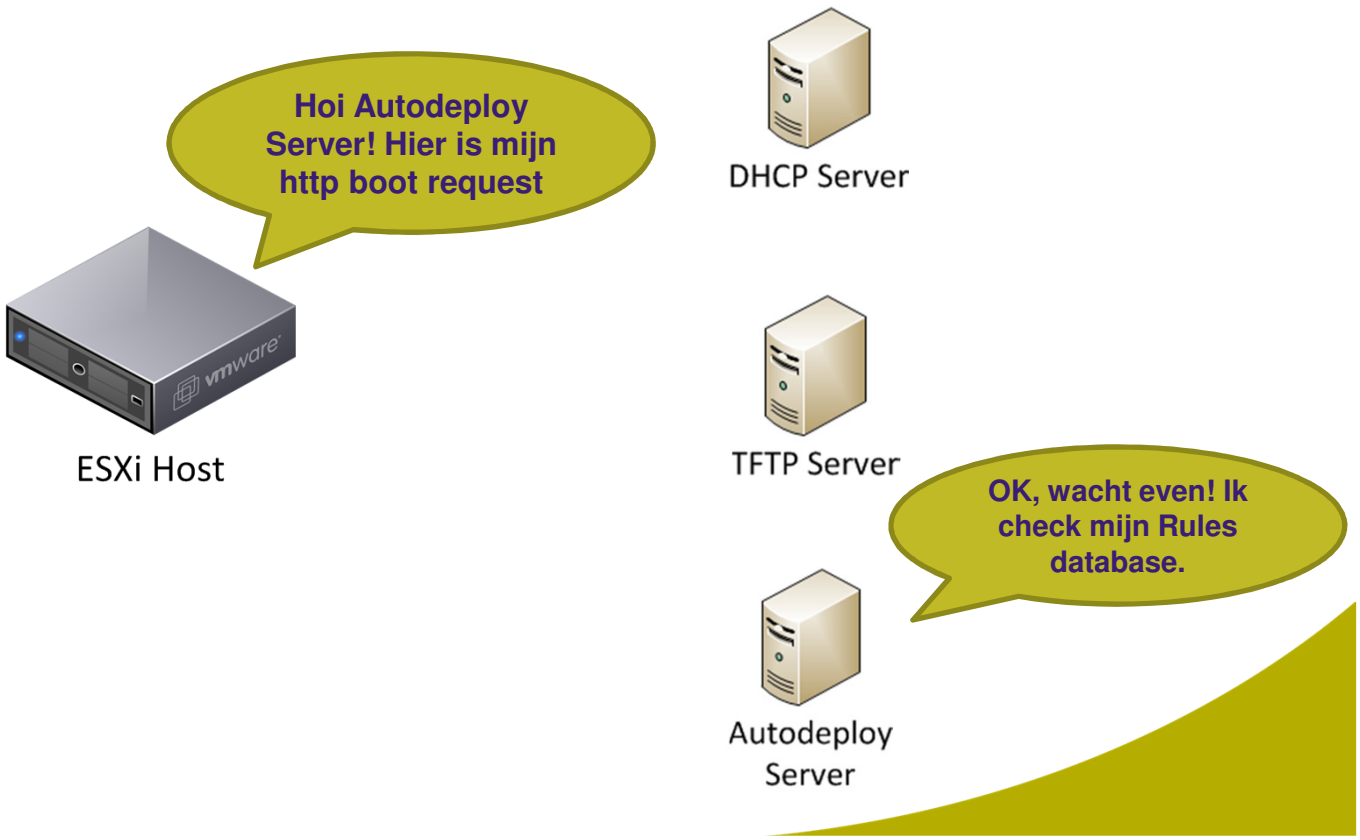
Autodeploy



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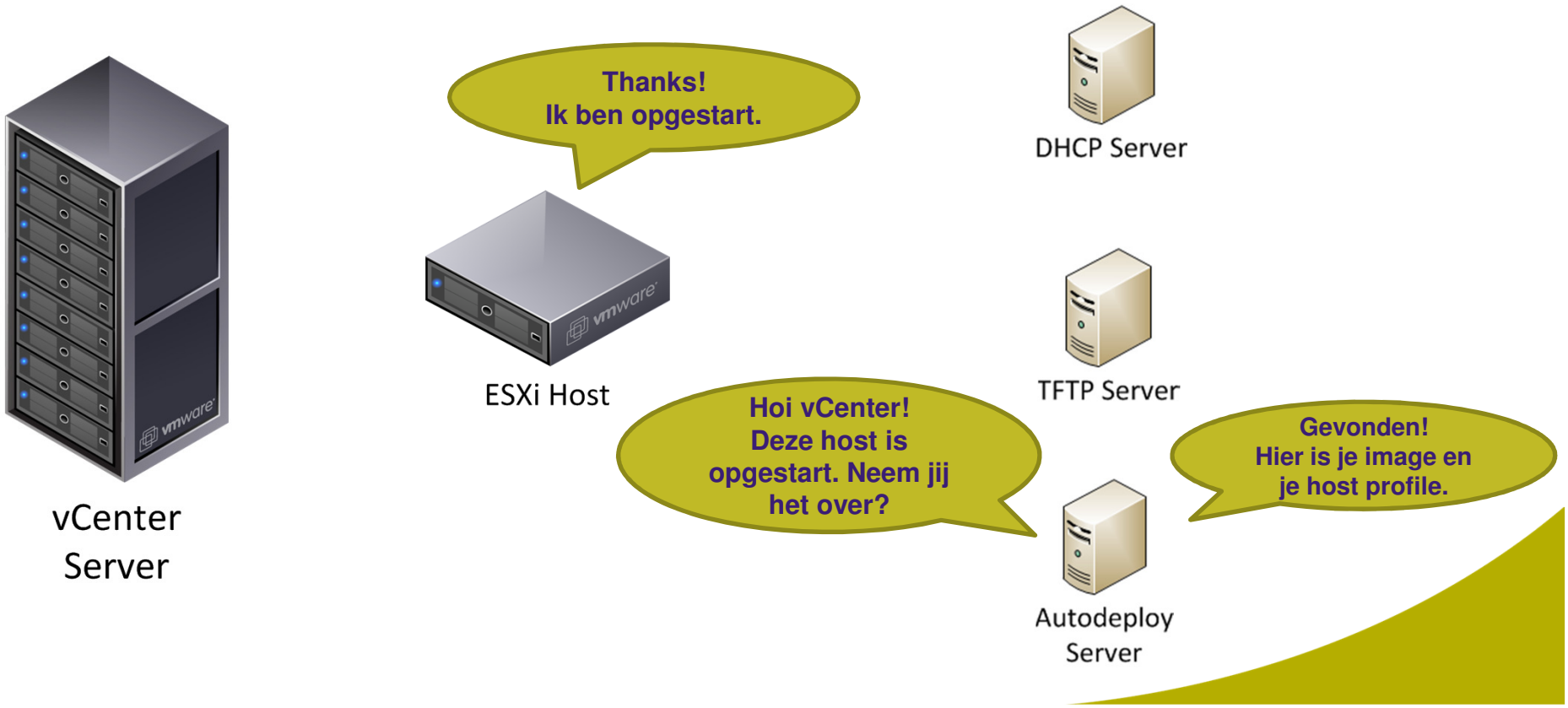
Autodeploy



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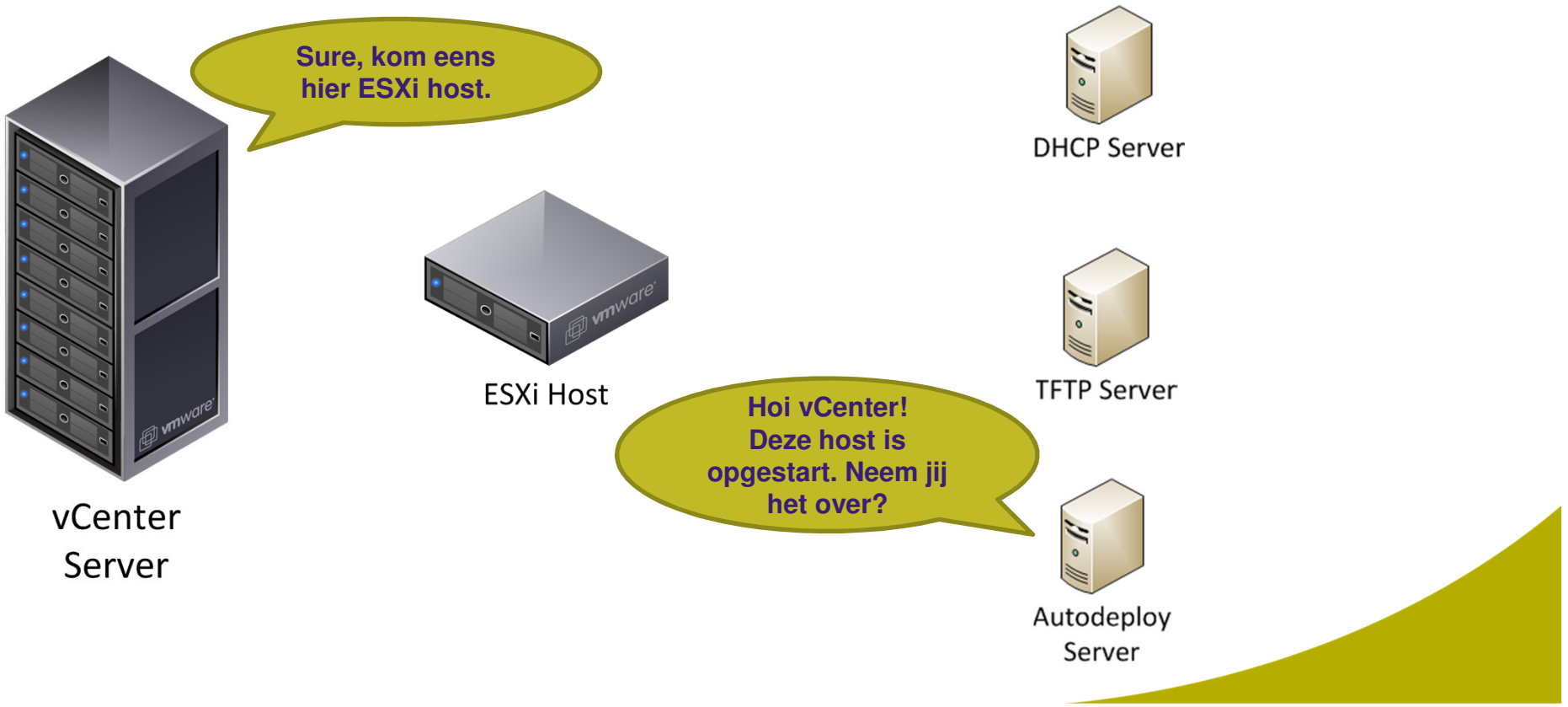
Autodeploy



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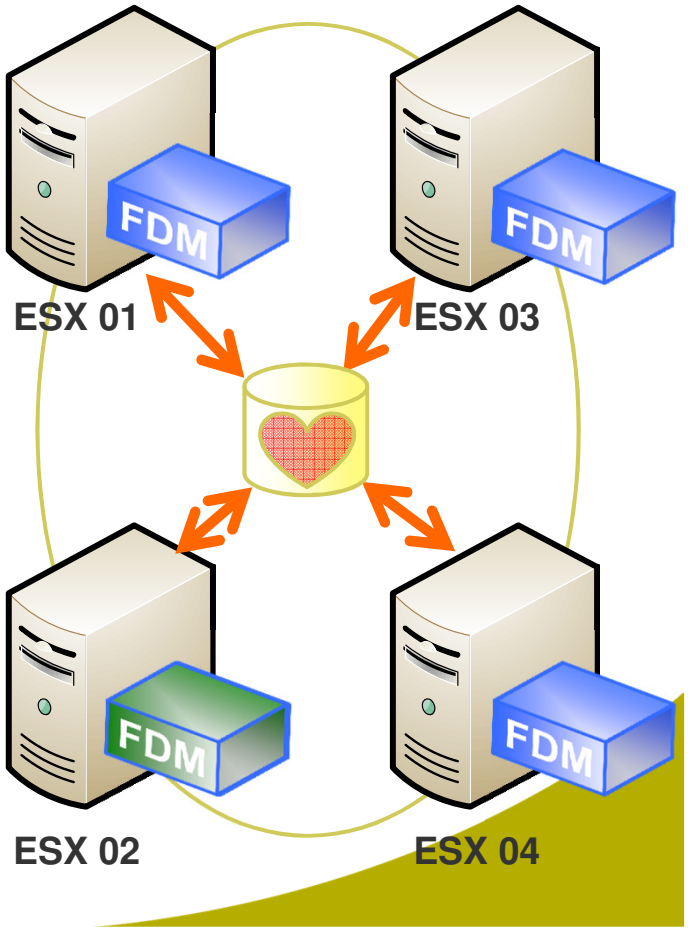
High Availability (HA)

- Compleet vernieuwd
- Fault Domain Manager (FDM)
- Geen primary/secondary
- Iedere host een agent (slave)
- 1 master per cluster
- Storage level communicatie



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