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Windows Server 2016: Was ist neu?

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Geschmacksrichtungen

- **Windows Server Technical Preview**
 - Standard Edition
 - Datacenter Edition
 - Hyper-V Server
- **Release: „im Jahr 2016“**
 - Weitere Details noch nicht bekannt
 - Vermutung: Ende 1. Quartal 2016

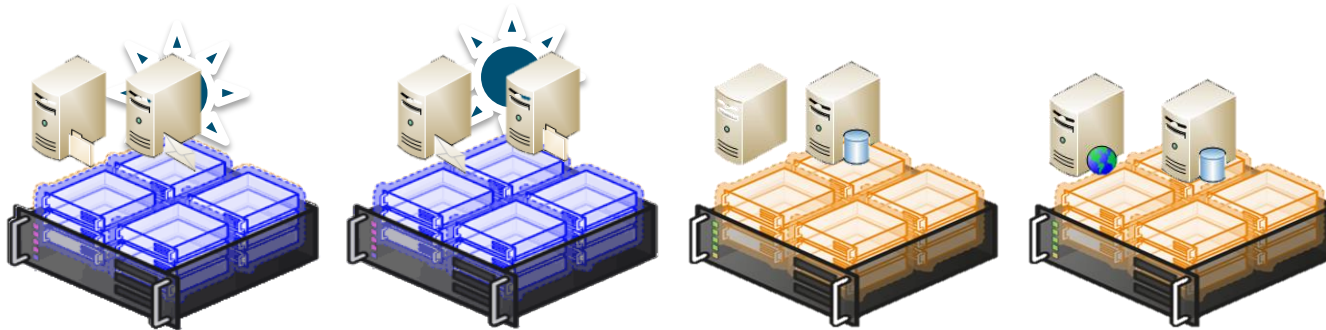


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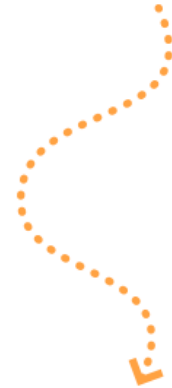
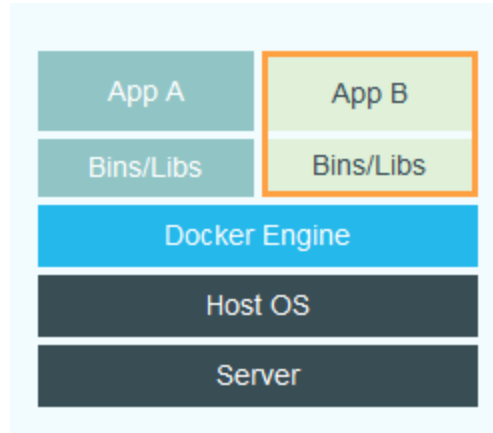
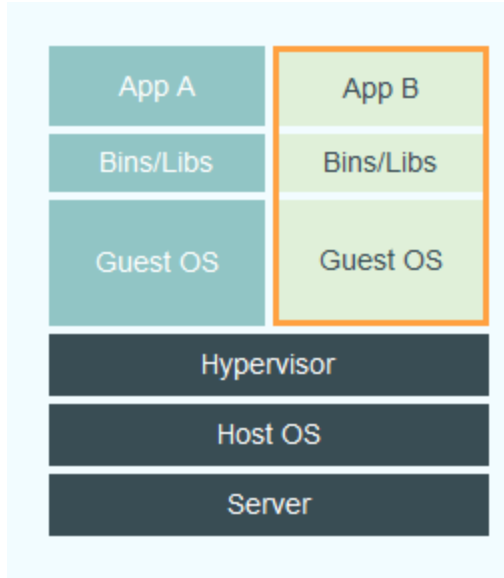
Cluster, Boxen, Container

Der Klumpen bleibt aktuell








- **Cluster Rolling Upgrade**
 - Hyper-V
 - Scale-out Fileserver



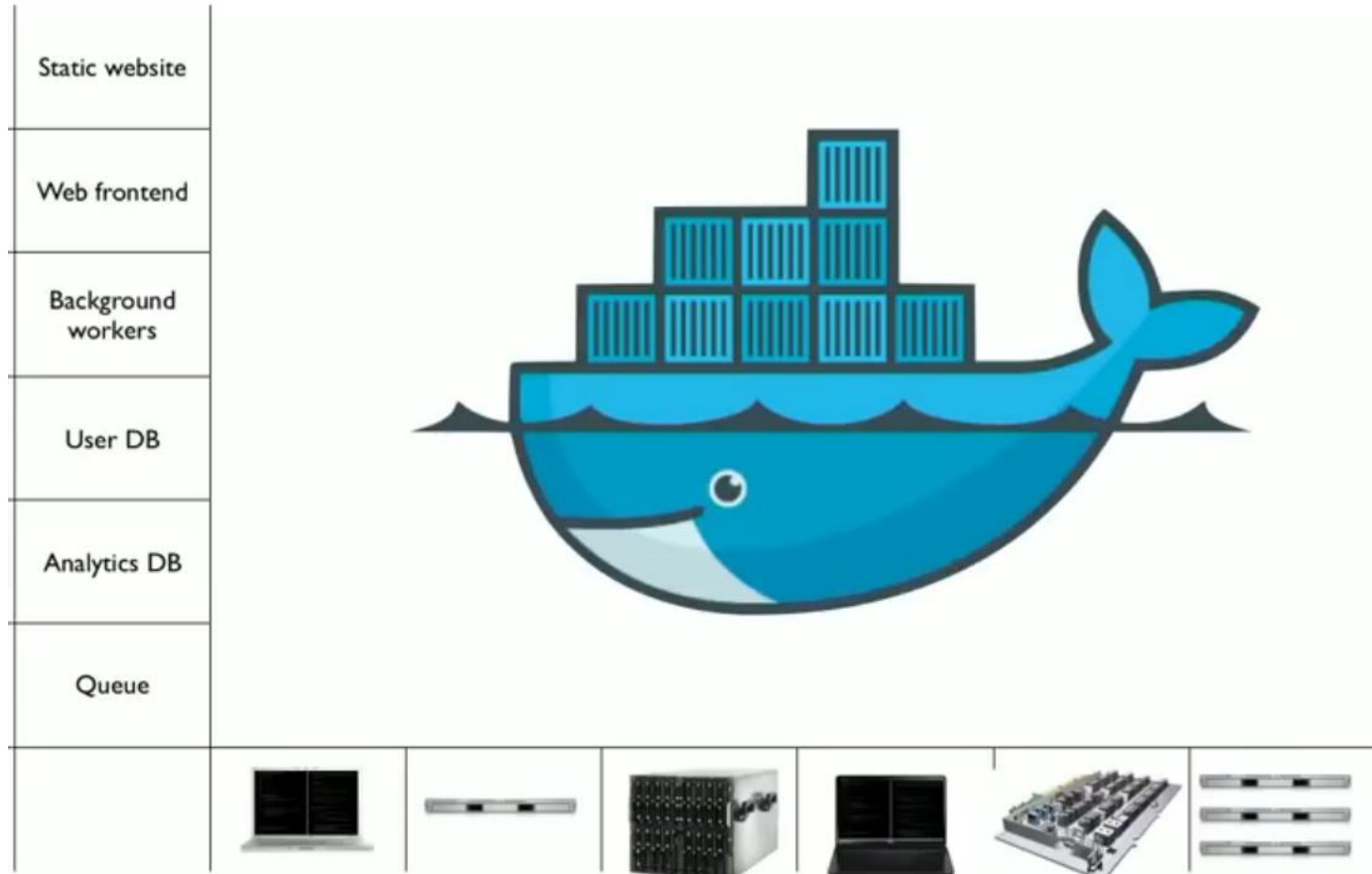
Docker-Container



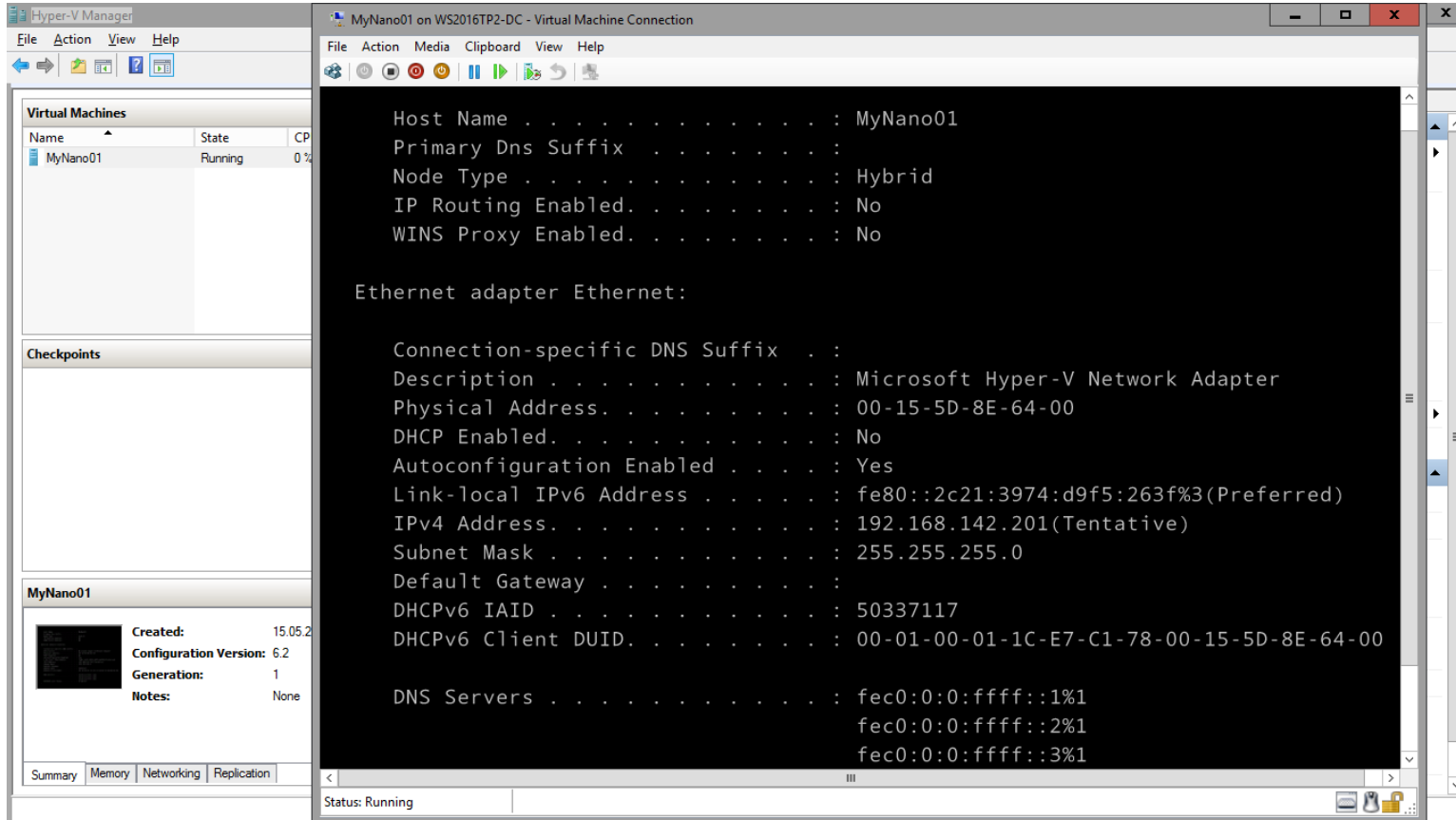
Das Problem, das Docker löst

Static website	?	?	?	?	?	?	?
Web frontend	?	?	?	?	?	?	?
Background workers	?	?	?	?	?	?	?
User DB	?	?	?	?	?	?	?
Analytics DB	?	?	?	?	?	?	?
Queue	?	?	?	?	?	?	?
							

Das Problem, das Docker löst



Nano Server



Hyper-V Manager

MyNano01 on WS2016TP2-DC - Virtual Machine Connection

File Action View Help

Virtual Machines

Name	State	CP
MyNano01	Running	0%

Checkpoints

MyNano01

Created: 15.05.2
Configuration Version: 6.2
Generation: 1
Notes: None

Summary | Memory | Networking | Replication

File Action Media Clipboard View Help

```
Host Name . . . . . : MyNano01
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

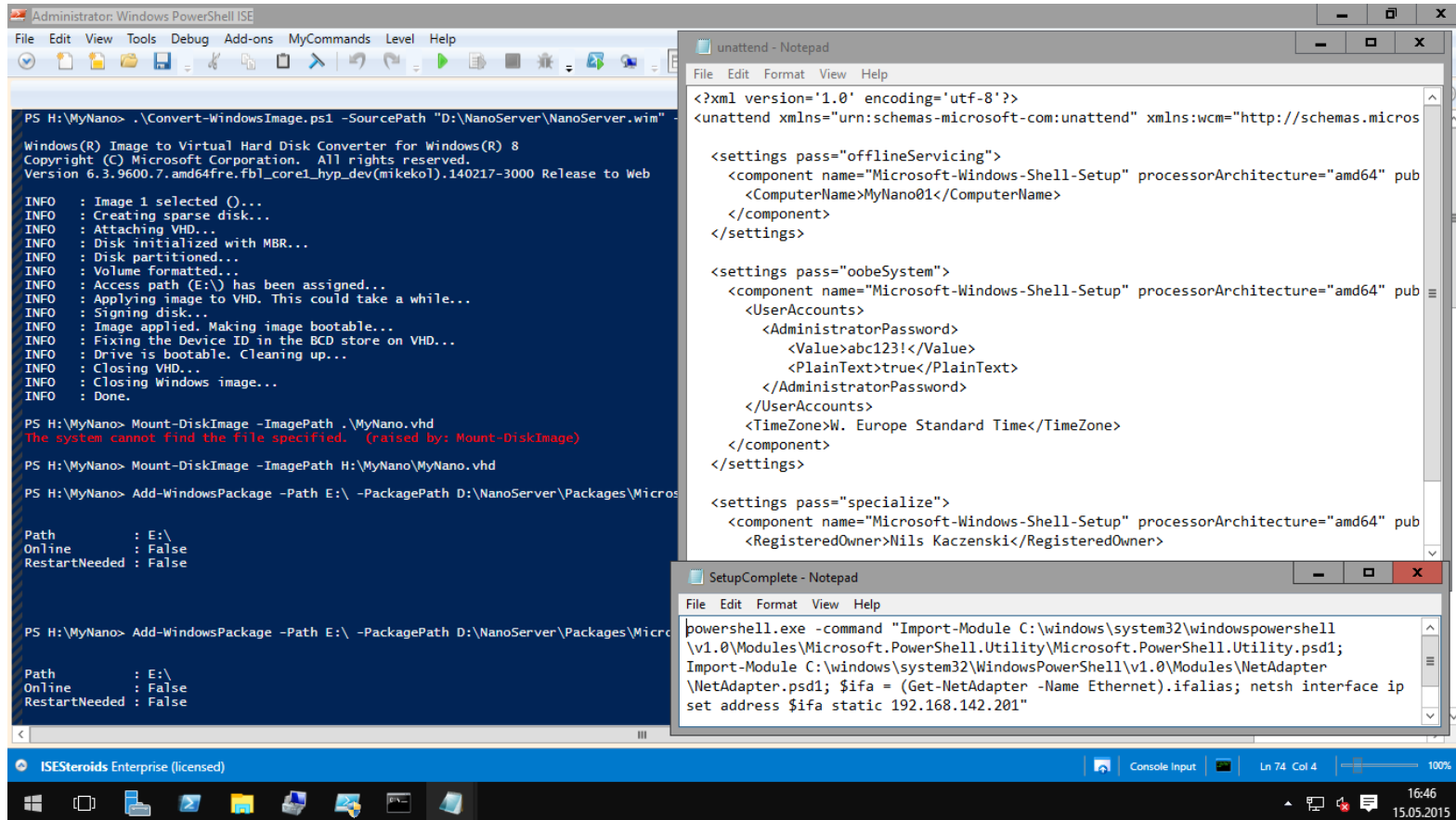
Ethernet adapter Ethernet:

Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Hyper-V Network Adapter
Physical Address. . . . . : 00-15-5D-8E-64-00
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::2c21:3974:d9f5:263f%3(Preferred)
IPv4 Address. . . . . : 192.168.142.201(Tentative)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 50337117
DHCPv6 Client DUID. . . . . : 00-01-00-01-1C-E7-C1-78-00-15-5D-8E-64-00

DNS Servers . . . . . : fec0:0:0:ffff::1%1
                       fec0:0:0:ffff::2%1
                       fec0:0:0:ffff::3%1
```

Status: Running

Nano Server



```
Administrator: Windows PowerShell ISE
File Edit View Tools Debug Add-ons MyCommands Level Help

PS H:\MyNano> .\Convert-WindowsImage.ps1 -SourcePath "D:\NanoServer\NanoServer.wim"

Windows(R) Image to Virtual Hard Disk Converter for Windows(R) 8
Copyright (C) Microsoft Corporation. All rights reserved.
Version 6.3.9600.7.amd64Fre.Fbl_core1_hyp_dev(mikekol).140217-3000 Release to Web

INFO : Image 1 selected (O)...
INFO : Creating sparse disk...
INFO : Attaching VHD...
INFO : Disk initialized with MBR...
INFO : Disk partitioned...
INFO : Volume formatted...
INFO : Access path (E:\) has been assigned...
INFO : Applying image to VHD. This could take a while...
INFO : Signing disk...
INFO : Image applied. Making image bootable...
INFO : Fixing the Device ID in the BCD store on VHD...
INFO : Drive is bootable. Cleaning up...
INFO : Closing VHD...
INFO : Closing Windows image...
INFO : Done.

PS H:\MyNano> Mount-DiskImage -ImagePath .\MyNano.vhd
The system cannot find the file specified. (raised by: Mount-DiskImage)

PS H:\MyNano> Mount-DiskImage -ImagePath H:\MyNano\MyNano.vhd

PS H:\MyNano> Add-WindowsPackage -Path E:\ -PackagePath D:\NanoServer\Packages\Microso

Path          : E:\
Online        : False
RestartNeeded : False

PS H:\MyNano> Add-WindowsPackage -Path E:\ -PackagePath D:\NanoServer\Packages\Microso

Path          : E:\
Online        : False
RestartNeeded : False

unattend - Notepad
File Edit Format View Help
<?xml version='1.0' encoding='utf-8'?>
<unattend xmlns="urn:schemas-microsoft-com:unattend" xmlns:wcm="http://schemas.micros

<settings pass="offlineServicing">
  <component name="Microsoft-Windows-Shell-Setup" processorArchitecture="amd64" pub
  <ComputerName>MyNano01</ComputerName>
</component>
</settings>

<settings pass="oobeSystem">
  <component name="Microsoft-Windows-Shell-Setup" processorArchitecture="amd64" pub
  <UserAccounts>
    <AdministratorPassword>
      <Value>abc123!</Value>
      <PlainText>>true</PlainText>
    </AdministratorPassword>
  </UserAccounts>
  <TimeZone>W. Europe Standard Time</TimeZone>
</component>
</settings>

<settings pass="specialize">
  <component name="Microsoft-Windows-Shell-Setup" processorArchitecture="amd64" pub
  <RegisteredOwner>Nils Kaczenski</RegisteredOwner>

SetupComplete - Notepad
File Edit Format View Help
powershell.exe -command "Import-Module C:\windows\system32\windowspowershell
\v1.0\Modules\Microsoft.PowerShell.Utility\Microsoft.PowerShell.Utility.ps1;
Import-Module C:\windows\system32\WindowsPowerShell\v1.0\Modules\NetAdapter
\NetAdapter.ps1; $ifa = (Get-NetAdapter -Name Ethernet).ifalias; netsh interface ip
set address $ifa static 192.168.142.201"
```



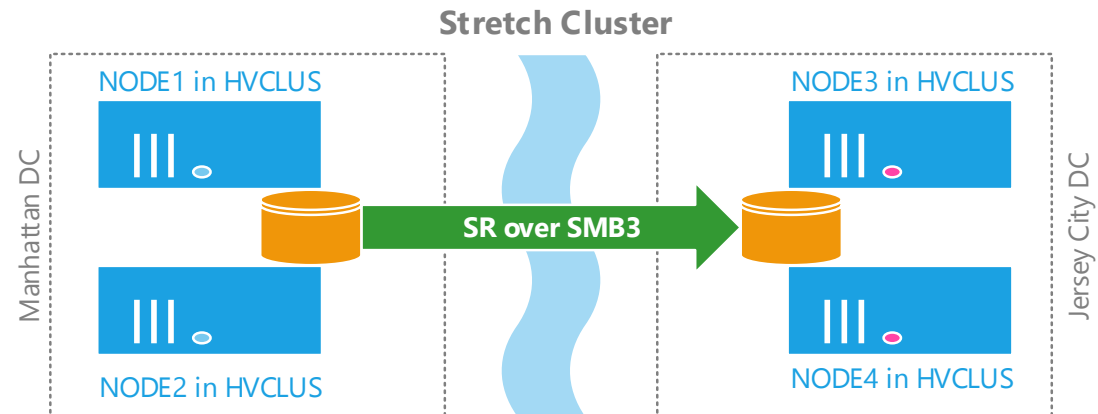
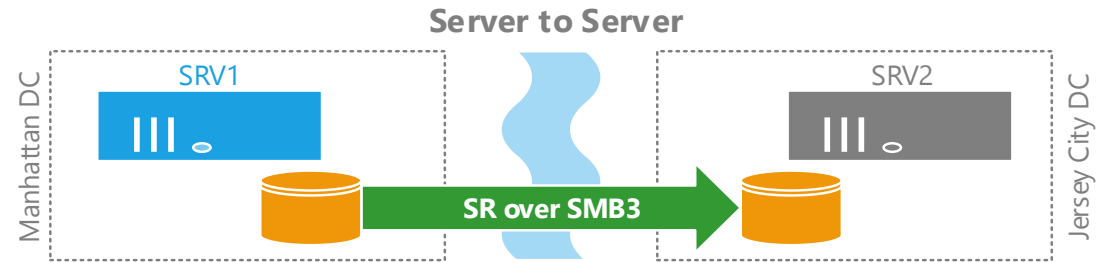
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Storage

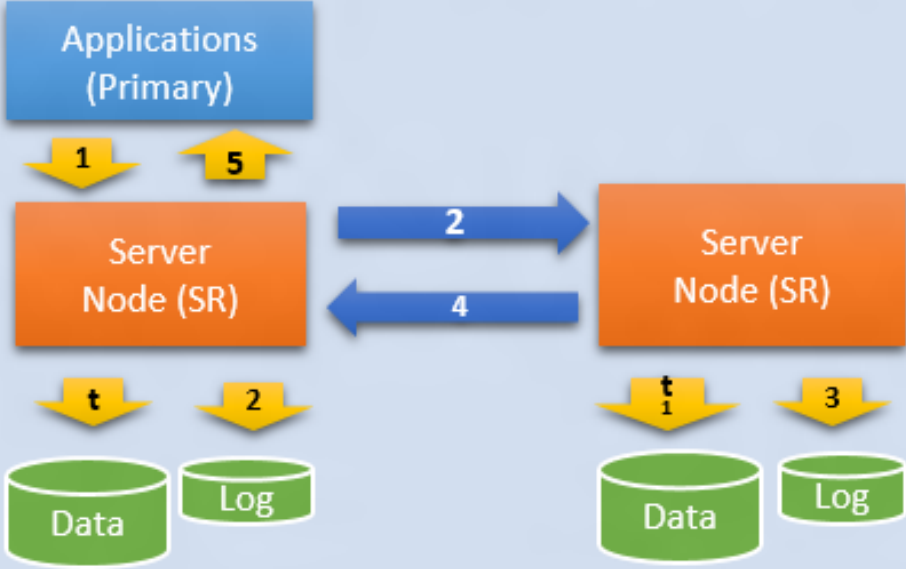
Von hier nach da

- **Storage Replica: Blockbasierte Replikation**
- **Szenarien**
 - Server-to-Server
 - Stretch Cluster
- **Synchrone oder asynchrone Replikation**
 - Anforderungen und Szenario klären

SR: Szenarien



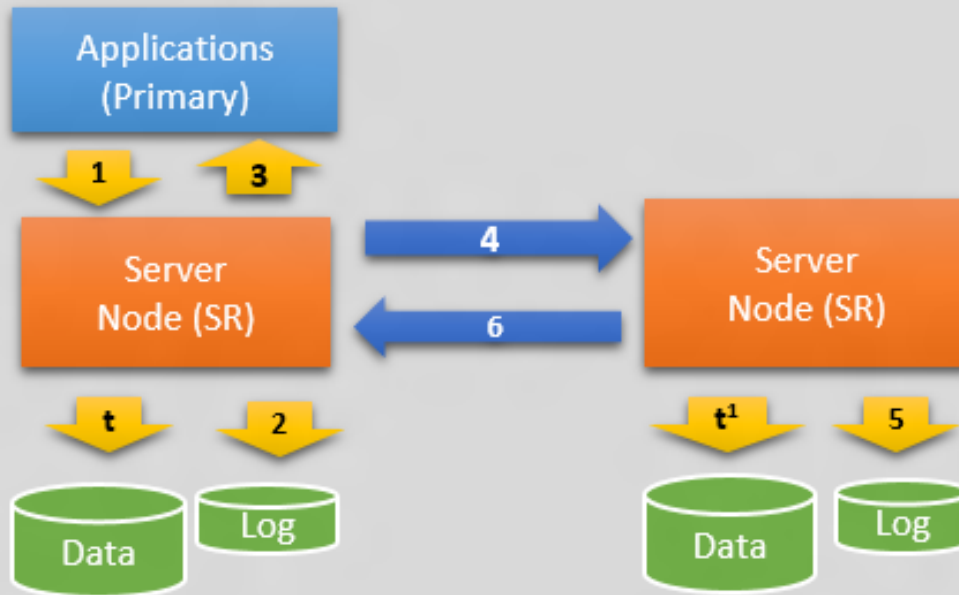
SR: Synchrone Replikation

Mode	Diagram	Steps
<p>Synchronous</p> <p>Zero Data Loss RPO</p>	 <p>The diagram illustrates the Synchronous Replication (SR) process between two Server Nodes (SR). The primary node (left) has Applications (Primary) above it. The process is numbered 1 to 5: 1. Application write to primary; 2. Log data written & replicated to remote; 3. Log data written at remote; 4. Acknowledgement from remote; 5. Application write acknowledged at primary. Time markers t and $t-1$ are shown for data flushes.</p>	<ol style="list-style-type: none">1. Application write2. Log data written & the data is replicated to remote site3. Log data written at the remote site4. Acknowledgement from the remote site5. Application write acknowledged <p>$t, t-1$- Data flushed to the volume, logs always write through</p>

SR: Asynchrone Replikation

Asynchronous

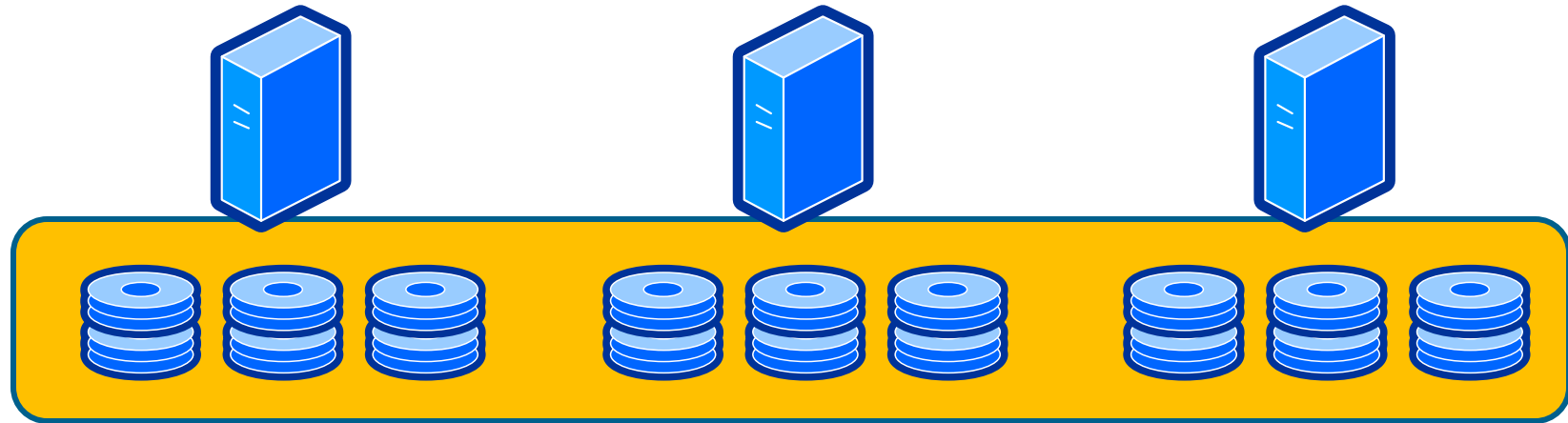
Near zero data loss (depends on multiple factors) RPO



1. Application write
2. Log data written
3. Application write acknowledged
4. Data replicated to the remote site
5. Log data written at the remote site
6. Acknowledgement from the remote site

t , t^1 - Data flushed to the volume, logs always write through

Storage Spaces Direct



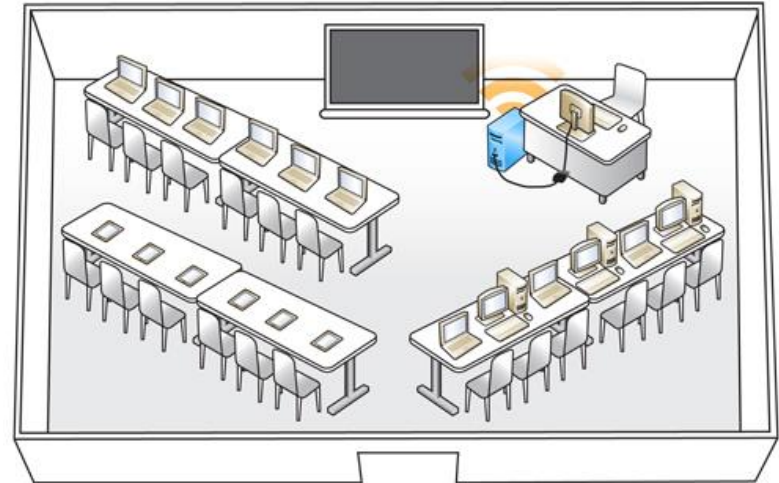
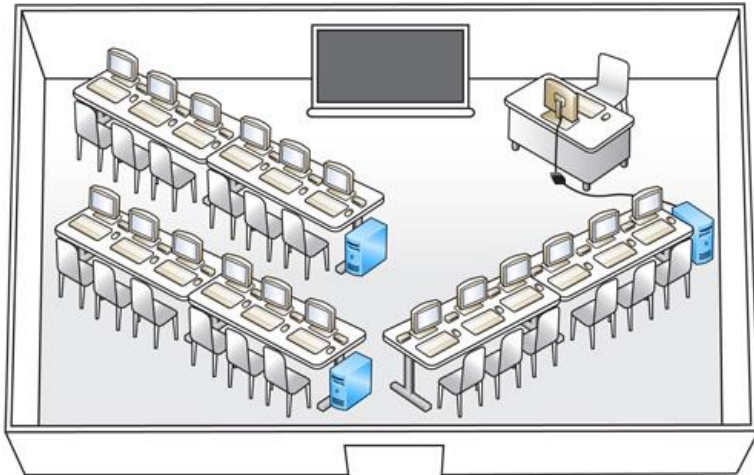


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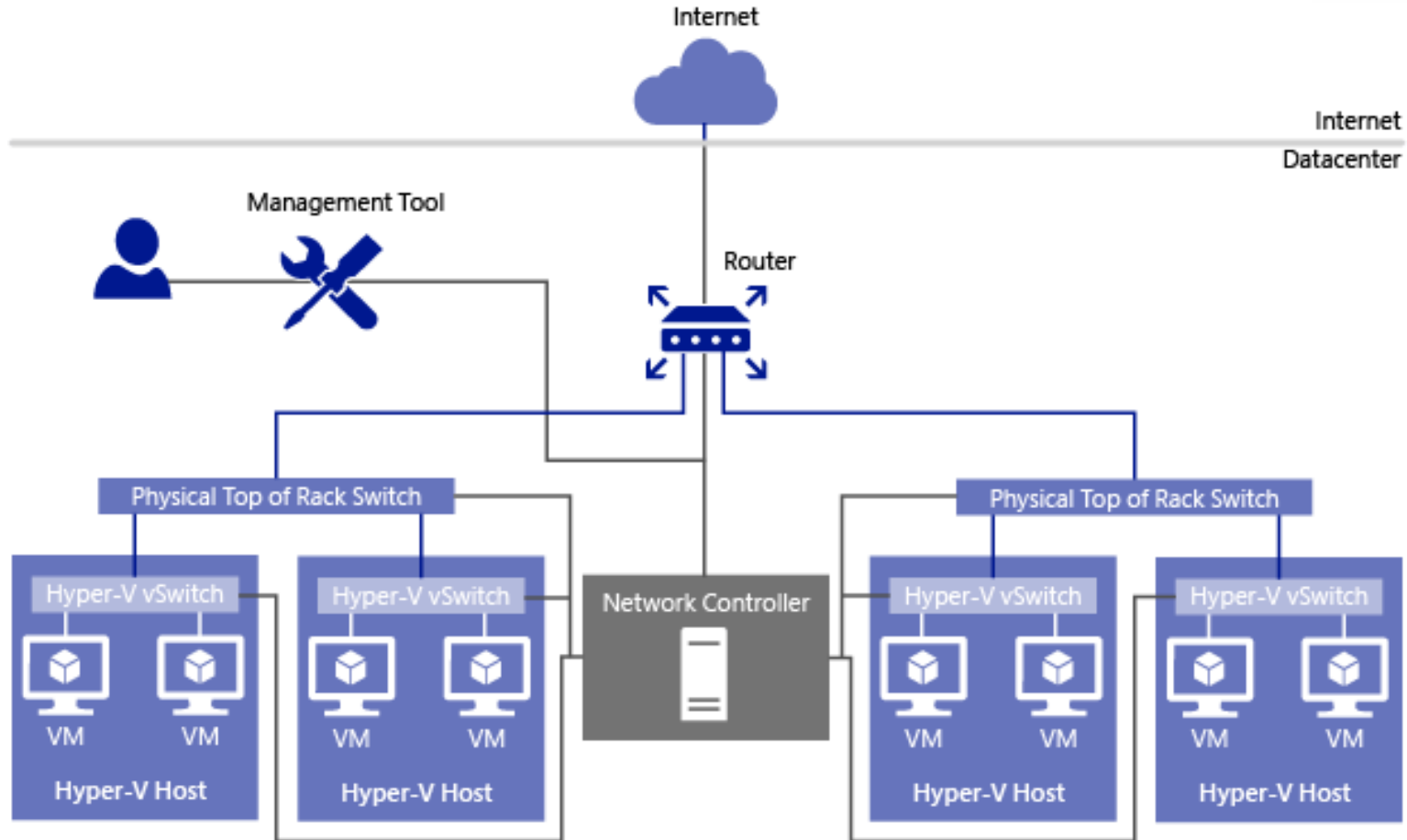
Netzwerk und Terminalserver

Terminalserver (äh, nein: RDS)

- OpenGL und OpenCL
- Multipoint Services
 - Bisher eigenes Produkt
 - Jetzt RDS-Rolle



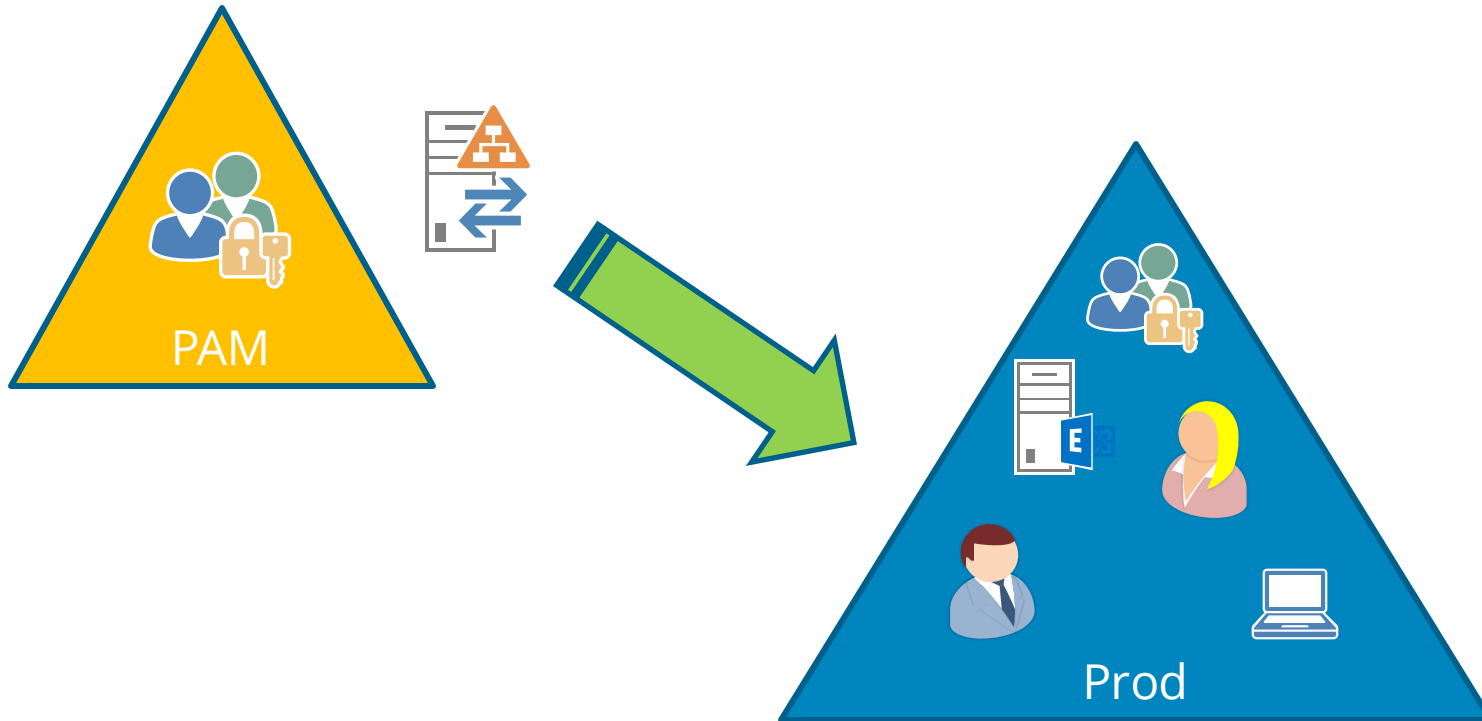
Network Controller





... und sonst

Privileged Access Management



... und sonst ...

- Hyper-V
- PowerShell 5.0
- Virtuelle Netzwerke für VM-Hosting
- ADFS mit Nicht-AD-Identitäten
- DNS Server Policies



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