Disaster Recovery

&

VMware Cloud on AWS

Introductie

Robert Verdam
Consultant BCONN ICT
vExpert / vExpert NSX
Blogger @ RobertVerdam.nl
Twitter @rverdam

Dennis van der Aalst
Consultant BCONN ICT
vExpert 2019
Twitter @dvdaalst



Agenda

Disaster Recovery (SRM)

VMware Cloud on AWS - Use Cases

Disaster Recovery as a Service

Connecting on-prem · vmware | aws

DRaaS Deployment



Wat is Disaster Recovery

Herstel van dienstverlening

- Human Error
- Hackers
- Terrorisme
- Operationele storing





Uitdagingen Disaster Recovery

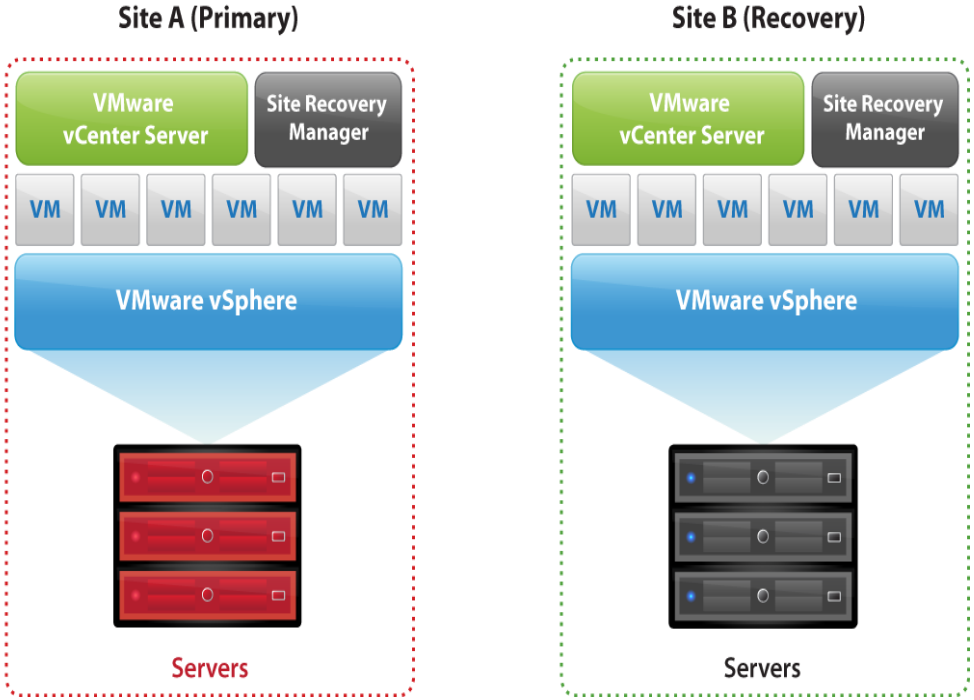
Complex
- Handmatig configureren
- Raakt meerdere infra componenten

Kostbaar
- Rekening houden met worst-case scenario
- Onderhouden DR kost tijd en geld

Betrouwbaarheid
- Onmogelijk/lastig testen
- Onduidelijk hoe lang recovery duurt
- Failback vaak niet aan gedacht



Site Recovery Manager



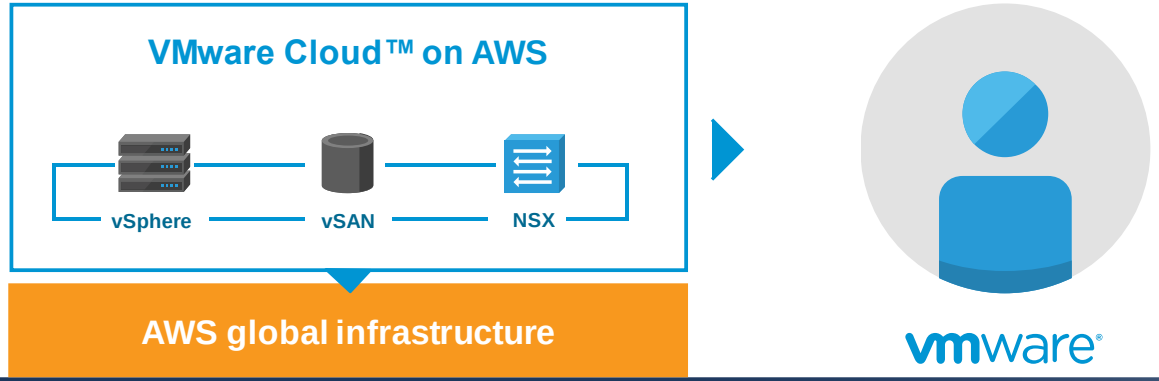
Wat is vmware | aws ?

VMware Cloud Service

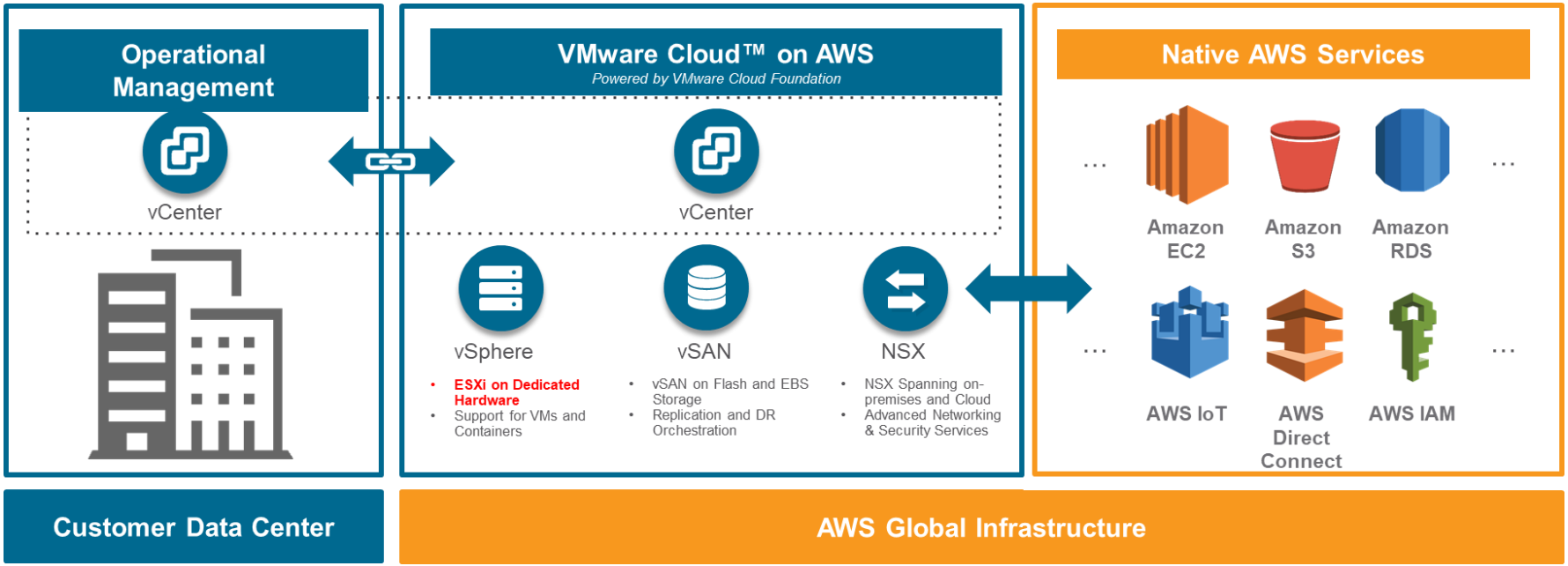
SDDC as a Service

ESXi Bare-Metal op AWS Hardware

Lifecycle Management uitgevoerd door VMware



Overzicht


Operational Management
vCenter
VMware Cloud™ on AWS
Powered by VMware Cloud Foundation
vCenter
vSphere
• ESXi on Dedicated Hardware
• Support for VMs and Containers
vSAN
• vSAN on Flash and EBS Storage
• Replication and DR Orchestration
NSX
• NSX Spanning on-premises and Cloud
• Advanced Networking & Security Services
Native AWS Services
Amazon EC2
Amazon S3
Amazon RDS
AWS IoT
AWS Direct Connect
AWS IAM
Customer Data Center
AWS Global Infrastructure

VMware Cloud on AWS Voordelen

Lage beheerskosten

- Geen hardware-/software onderhoud

Lage leercurve

- Bekende vSphere platform en tooling
- Configuratie veelal met wizards
- Single pane of glass via Cloud Gateway / Hybrid Linked mode

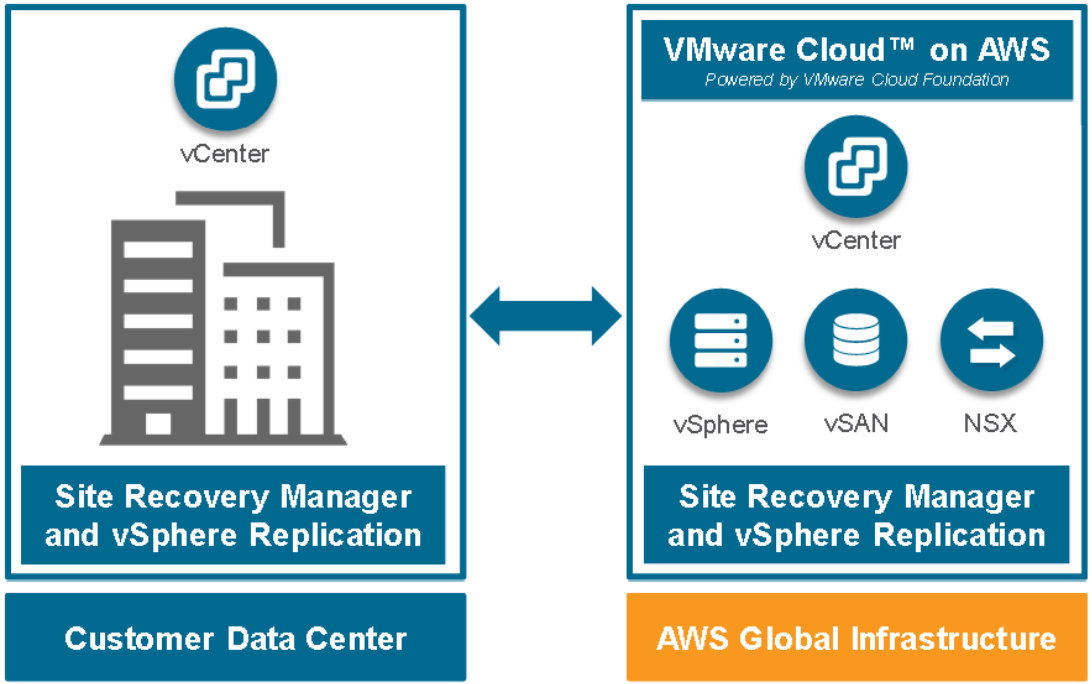
Flexibel

- Snel (initiele / additionele) capaciteit beschikbaar
- Meedere storage opties beschikbaar (NVMe / EBS)





Disaster Recovery as a Service



Disaster Recovery as a Service



Voordelen

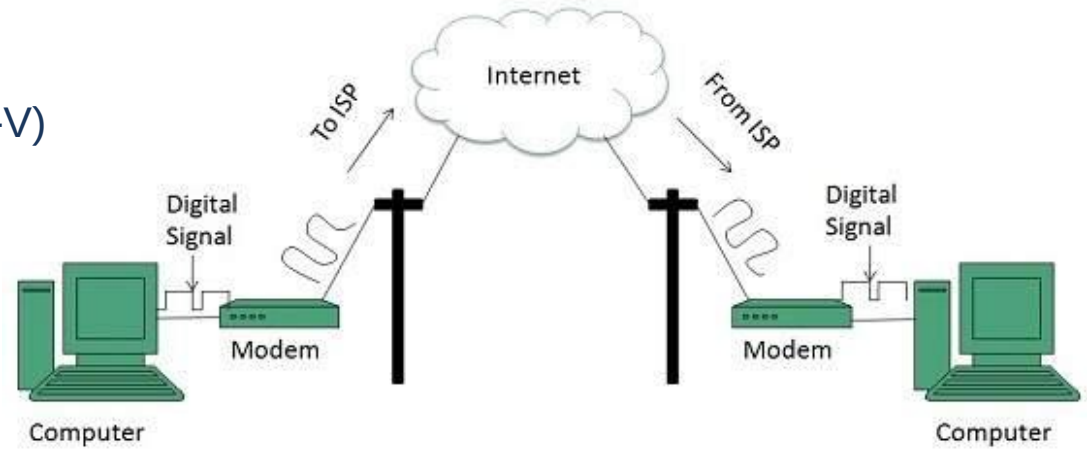
- Elastic site
- As a Service
- Geen eigen DR-site te onderhouden
- Bekende oplossing op basis van vCenter/SRM
- Storage agnostic
- Inter-region DR (VMConAWS naar andere VMConAWS site)

Connecting on-prem <-> VMC Opties

IPSEC
- Route based (NSX-T)
- Policy Based (NSX-T / NSX-V)

Direct Connect

L2VPN



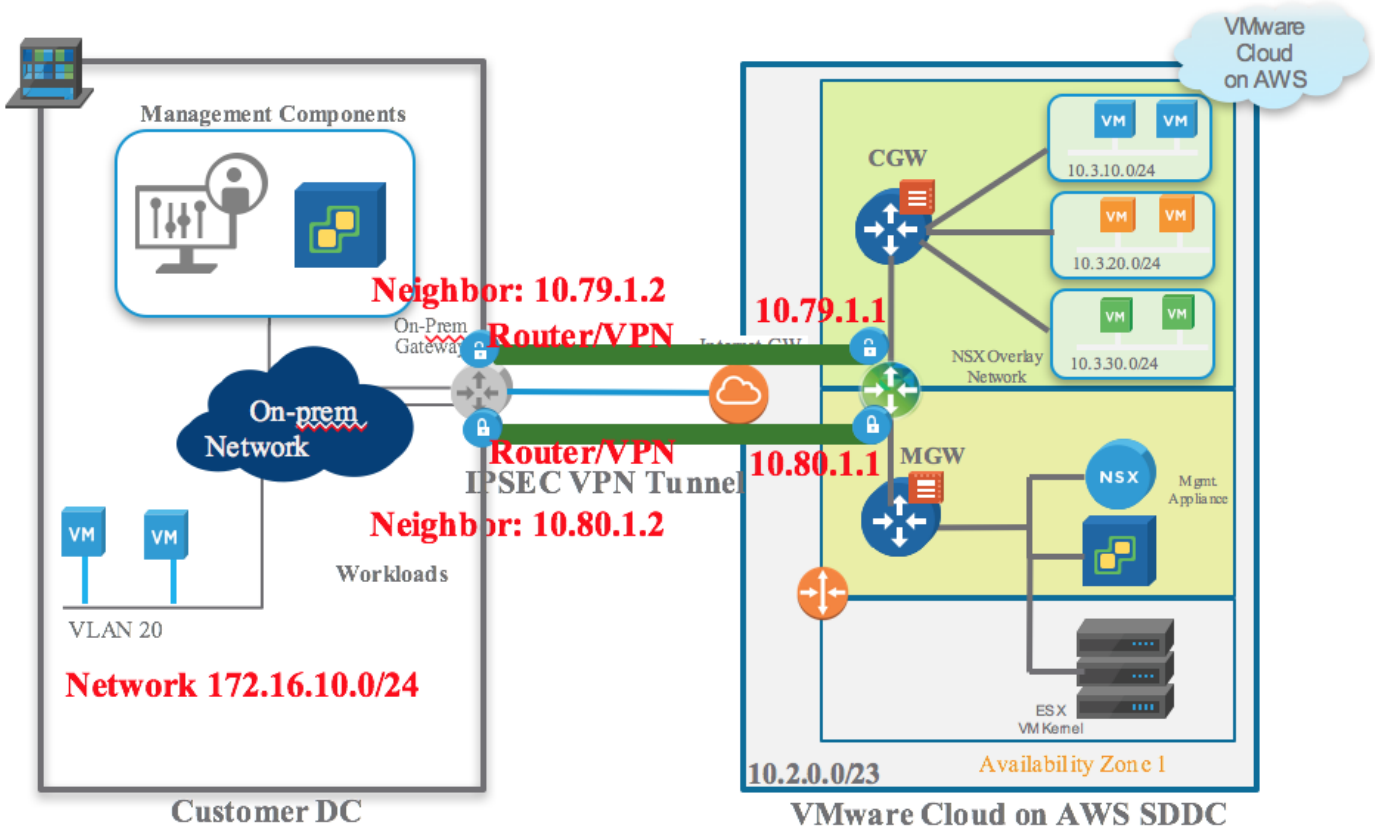
IPSEC

IPSEC VPN naar T0-router (**NSX-T**)

IPSEC VPN naar MGW/CGW (**NSX-V**)

IPSEC Route-based (**NSX-T**):

- Redundant (BGP)
- VTI
- Automatische routes propageren



L2VPN

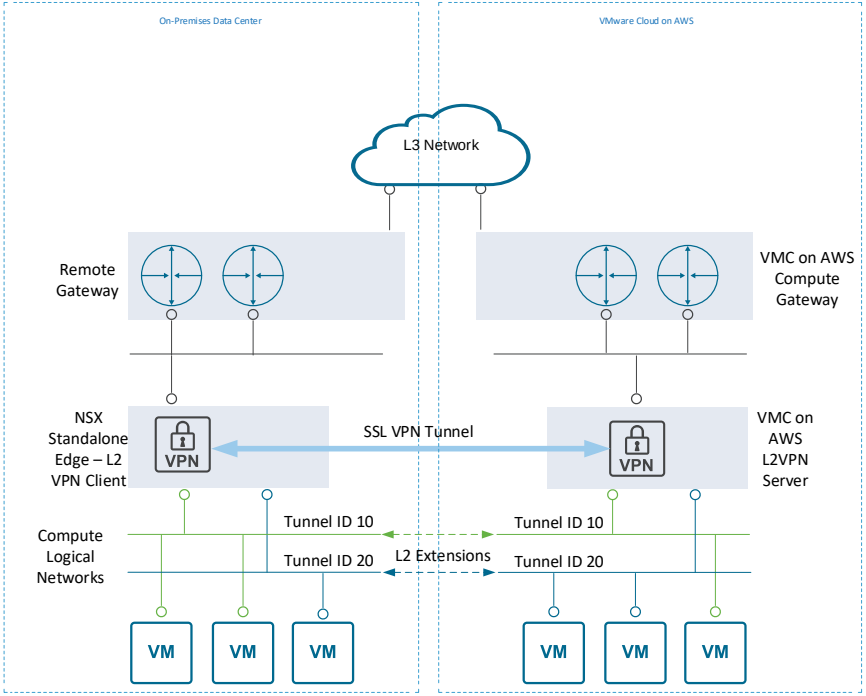
SSL-VPN

Requirements On-Premises

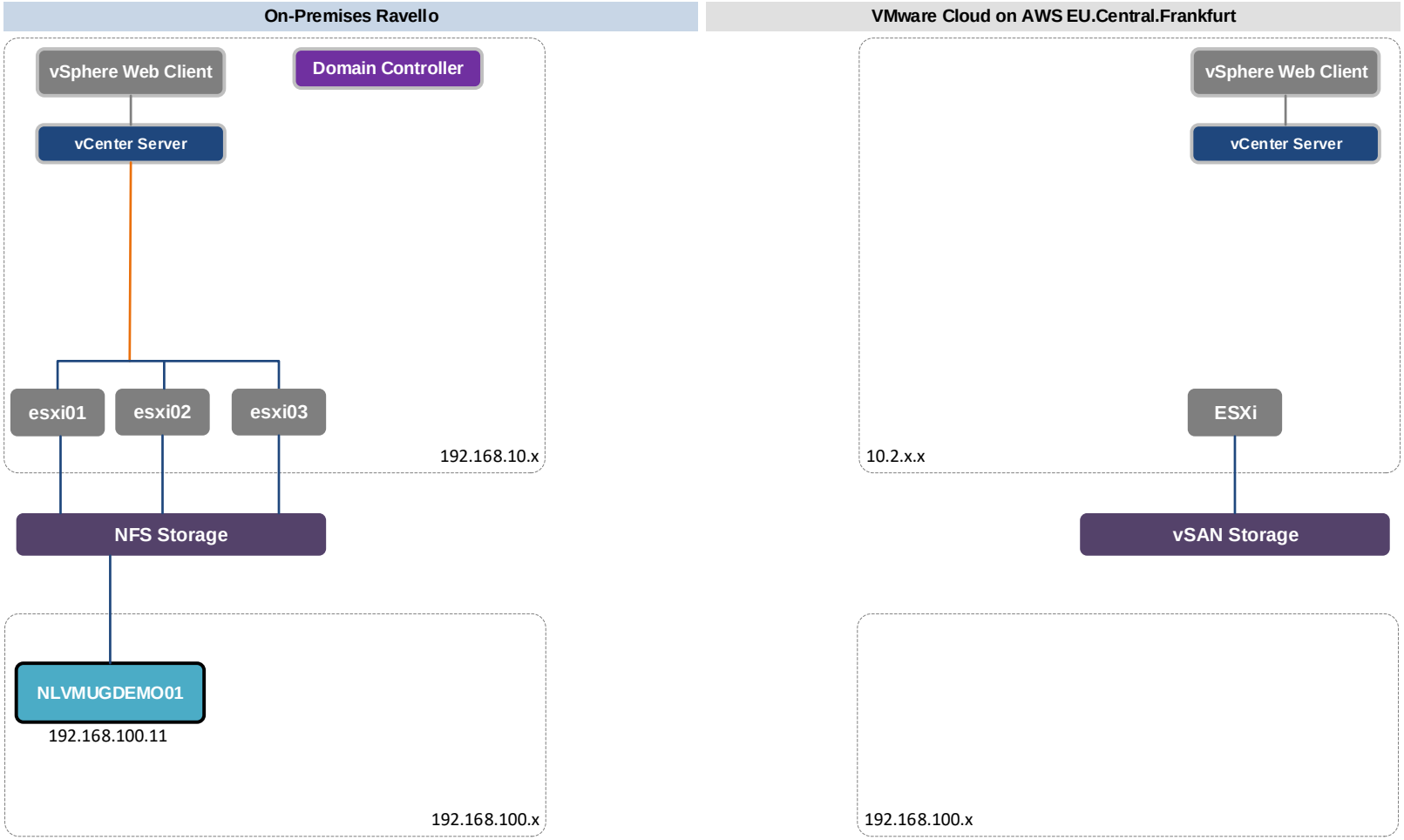
- Geen NSX -> Geen nood!
- Stand-alone NSX Edge HA Pair
- Geen NSX-licentie benodigd

Requirements WAN connectivity

- RTT < 150ms
- Bandwidth >250 Mbps



Walkthrough / Demo


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
esxi01
esxi02
esxi03
192.168.10.x
NFS Storage
NLVMUGDEMO01
192.168.100.11
192.168.100.x
vSphere Web Client
vCenter Server
ESXi
10.2.x.x
vSAN Storage
192.168.100.x

Welcome to VMware Cloud on AWS!

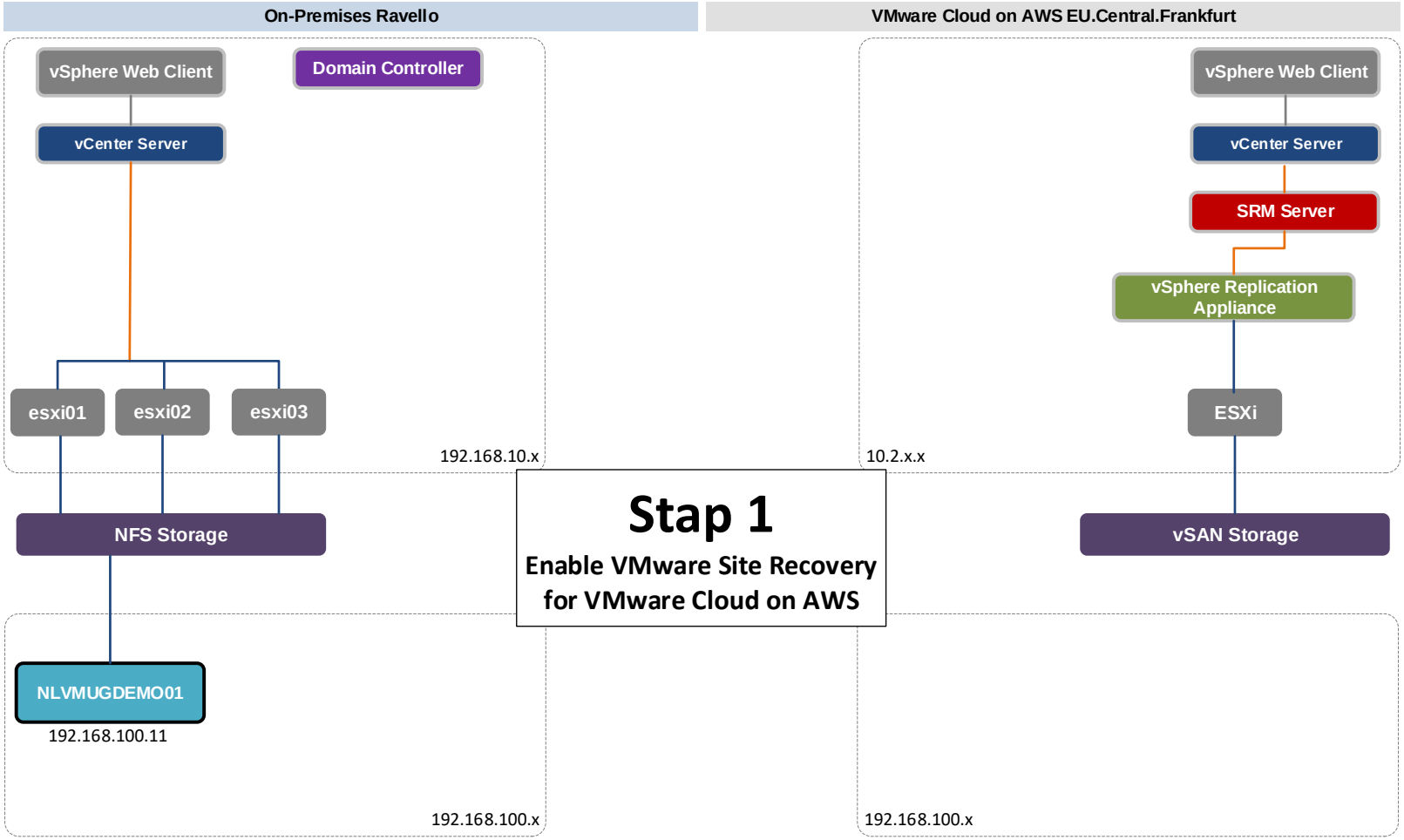
VMware Cloud on AWS makes it easy to run your familiar vSphere-based clouds on AWS.

Create your first Software-Defined Data Center (SDDC) in the cloud now.

CREATE SDDC

Activate 1-year or 3-year term subscription before creating an SDDC to enjoy discounted rate.

ACTIVATE TERM SUBSCRIPTION


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
esxi01
esxi02
esxi03
192.168.10.x
NFS Storage
NLVMUGDEMO01
192.168.100.11
192.168.100.x
vSphere Web Client
vCenter Server
SRM Server
vSphere Replication Appliance
ESXi
10.2.x.x
vSAN Storage
192.168.100.x
Stap 1
Enable VMware Site Recovery for VMware Cloud on AWS

You have 14 days remaining to connect to your AWS account. This is required to continue using this service without interruption. CONNECT TO AWS ACCOUNT

This SDDC will expire in 30 days. LEARN MORE SCALE UP

BACK TO LIST

VMUG-Demo

EU Central (Frankfurt)

OPEN VCENTER ACTIONS

Summary Networking & Security Add Ons Troubleshooting Settings Support

Hybrid Cloud Extension

Active

Included with your VMware Cloud on AWS service. Allows you to seamlessly migrate workloads to your SDDC from your remote vSphere datacenters.

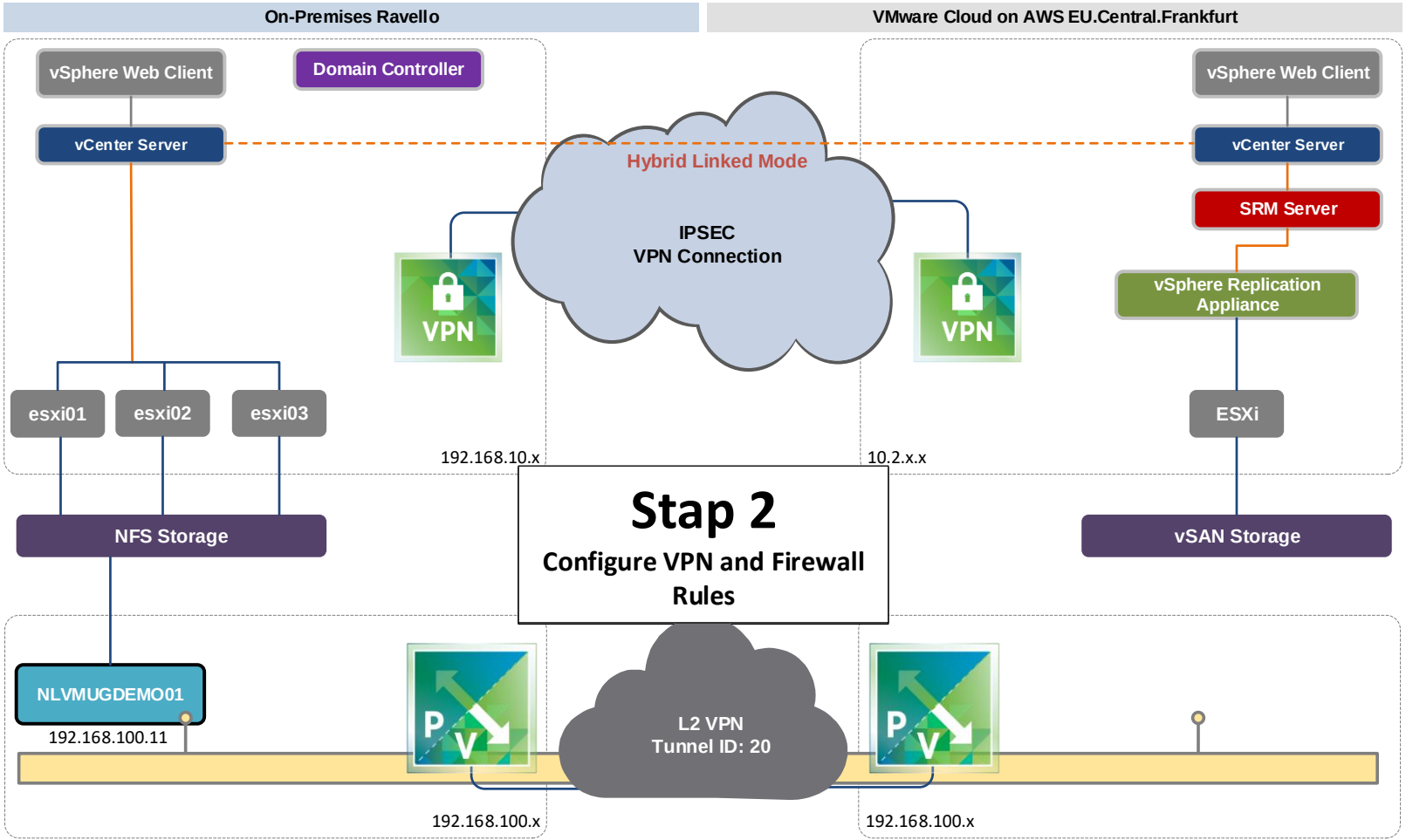
OPEN HYBRID CLOUD EXTENSION

Site Recovery

Allows you to protect on-prem workloads and recover them on this SDDC.

ACTIVATE MORE INFORMATION

SUPPORT


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
Hybrid Linked Mode
IPSEC
VPN Connection
VPN
VPN
vSphere Web Client
vCenter Server
SRM Server
vSphere Replication Appliance
esxi01
esxi02
esxi03
192.168.10.x
10.2.x.x
ESXi
Stap 2
Configure VPN and Firewall Rules
NFS Storage
vSAN Storage
NLVMUGDEMO01
192.168.100.11
L2 VPN
Tunnel ID: 20
192.168.100.x
192.168.100.x

BACK TO LIST

VMUG-Demo

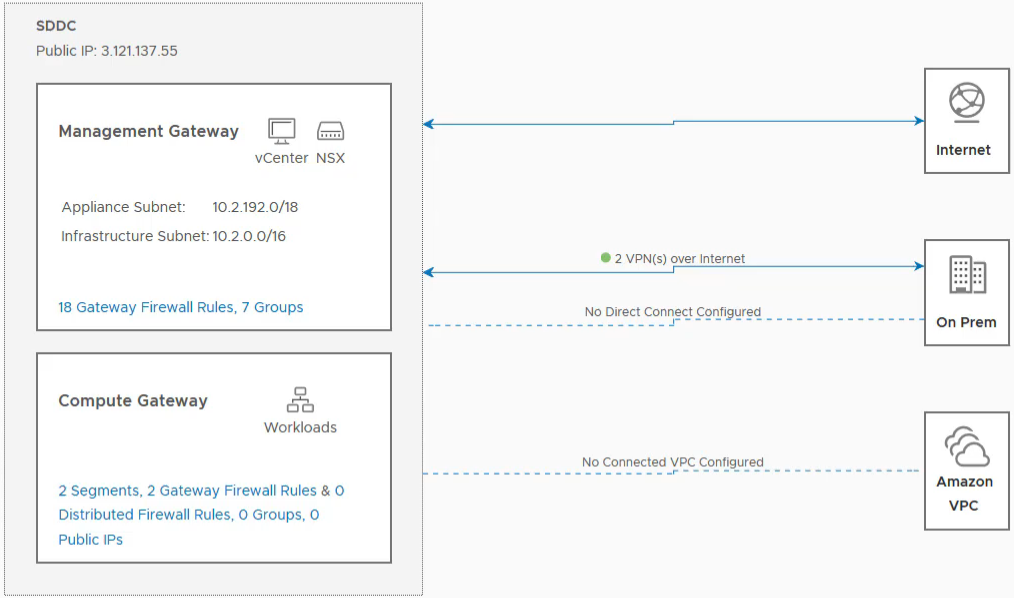
EU Central (Frankfurt)

OPEN VCENTER ACTIONS

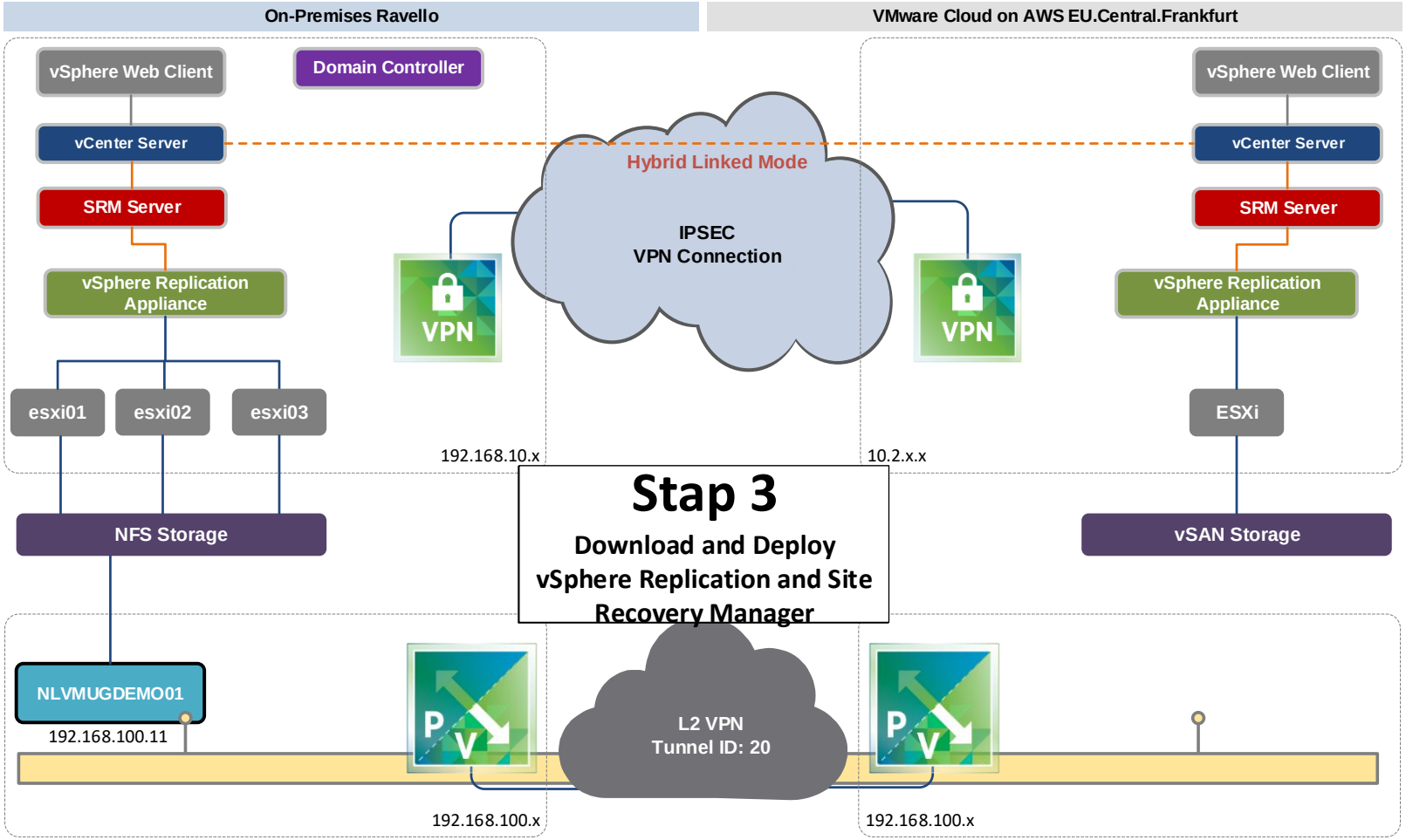
Summary Networking & Security Add Ons Troubleshooting Settings Support

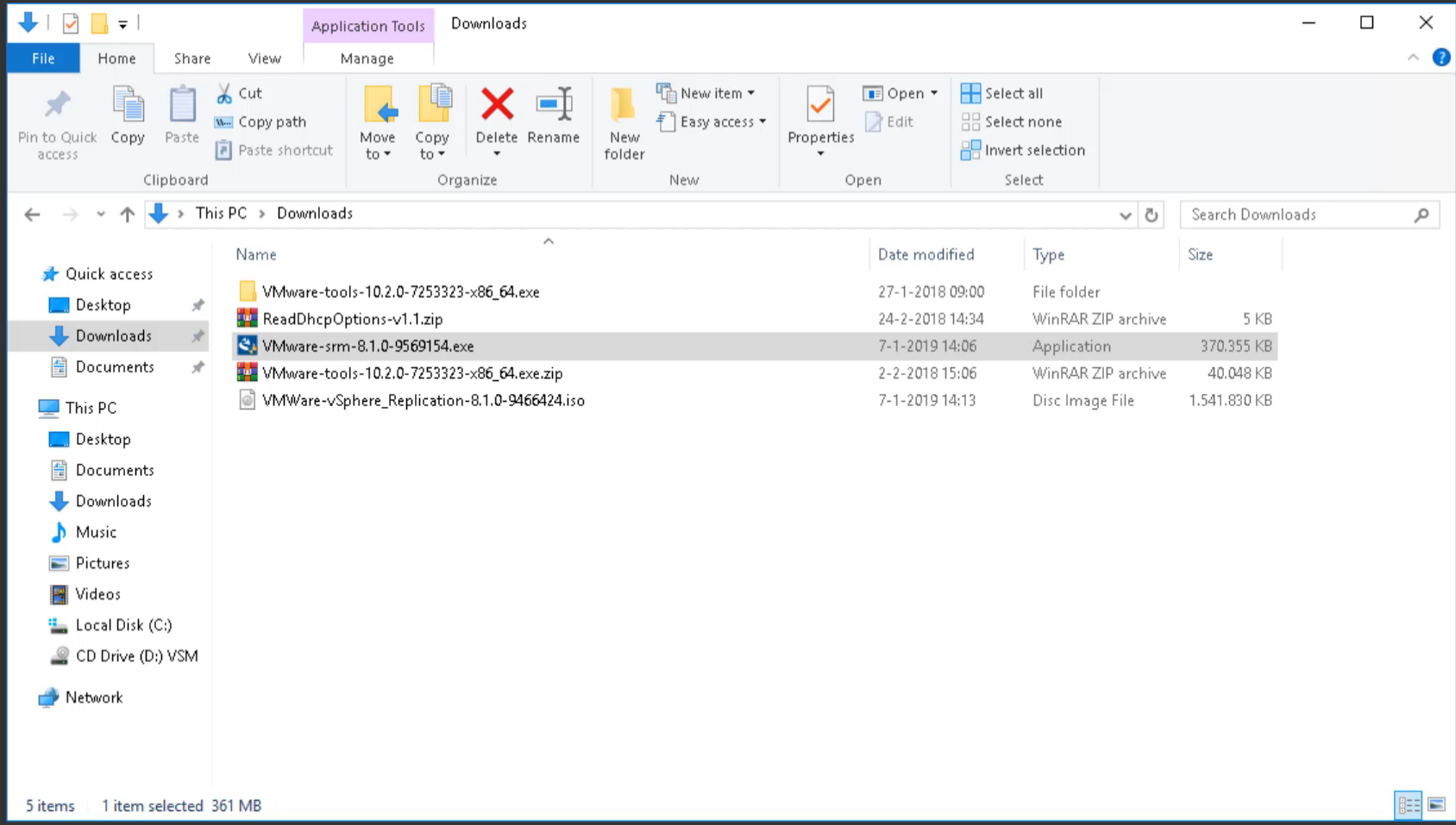
Overview
Network
Segments
VPN
NAT
Security
Gateway Firewall
Distributed Firewall
Inventory
Groups
Services
Tools
IPFIX
Port Mirroring
System
DNS
Public IPs
Direct Connect
Connected VPC

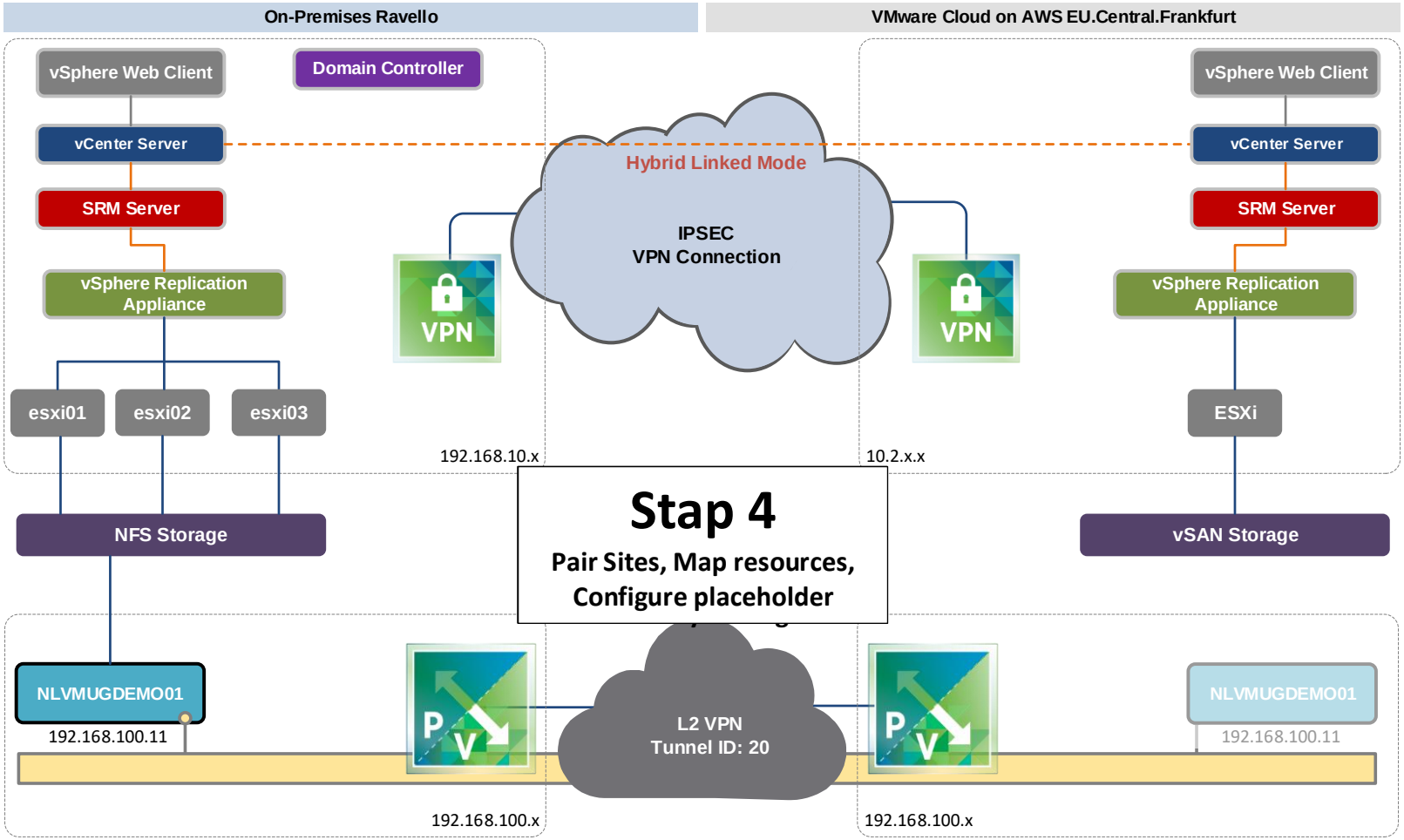
Overview



SUPPORT


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
SRM Server
vSphere Replication Appliance
esxi01
esxi02
esxi03
NFS Storage
NLVMUGDEMO01
192.168.100.11
192.168.10.x
192.168.100.x
VPN
Hybrid Linked Mode
IPSEC
VPN Connection
L2 VPN
Tunnel ID: 20
vSphere Web Client
vCenter Server
SRM Server
vSphere Replication Appliance
ESXi
vSAN Storage
10.2.x.x
192.168.100.x
Stap 3
Download and Deploy
vSphere Replication and Site
Recovery Manager


Application Tools
Downloads
File
Home
Share
View
Manage
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
Open
Select all
Select none
Invert selection
Select
This PC
Downloads
Search Downloads
Quick access
Desktop
Downloads
Documents
This PC
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
CD Drive (D:) VSM
Network
Name
Date modified
Type
Size
VMware-tools-10.2.0-7253323-x86_64.exe
27-1-2018 09:00
File folder
ReadDhcpOptions-v1.1.zip
24-2-2018 14:34
WinRAR ZIP archive
5 KB
VMware-srm-8.1.0-9569154.exe
7-1-2019 14:06
Application
370.355 KB
VMware-tools-10.2.0-7253323-x86_64.exe.zip
2-2-2018 15:06
WinRAR ZIP archive
40.048 KB
VMWare-vSphere_Replication-8.1.0-9466424.iso
7-1-2019 14:13
Disc Image File
1.541.830 KB
5 items
1 item selected 361 MB


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
SRM Server
vSphere Replication Appliance
esxi01
esxi02
esxi03
NFS Storage
NLVMUGDEMO01
192.168.100.11
192.168.10.x
192.168.100.x
VPN
Hybrid Linked Mode
IPSEC
VPN Connection
L2 VPN
Tunnel ID: 20
vSphere Web Client
vCenter Server
SRM Server
vSphere Replication Appliance
ESXi
vSAN Storage
NLVMUGDEMO01
192.168.100.11
10.2.x.x
192.168.100.x
Stap 4
Pair Sites, Map resources,
Configure placeholder

New Site Pair

1 Site details

2 vCenter Server and services

3 Ready to complete

Site details

First site

Select a local vCenter Servers you want to pair.

	vCenter Server
◉	vcsa.ravello.lab

Second site

◉ Platform Services Controller

○ Cloud provider

Enter the Platform Services Controller details for the vCenter Server

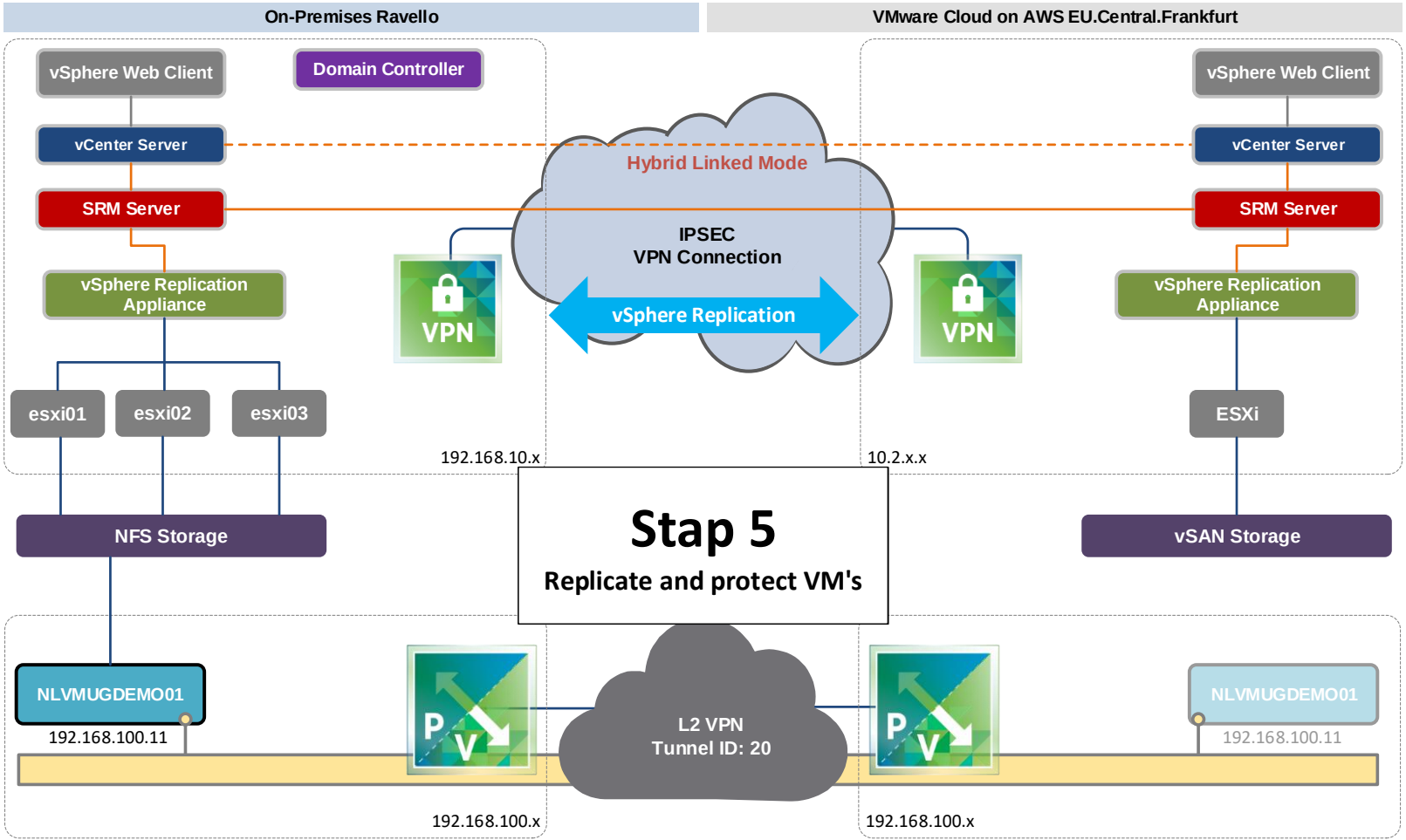
PSC host name: vcenter.sddc-3-121-168-101.vmwarevmc.com

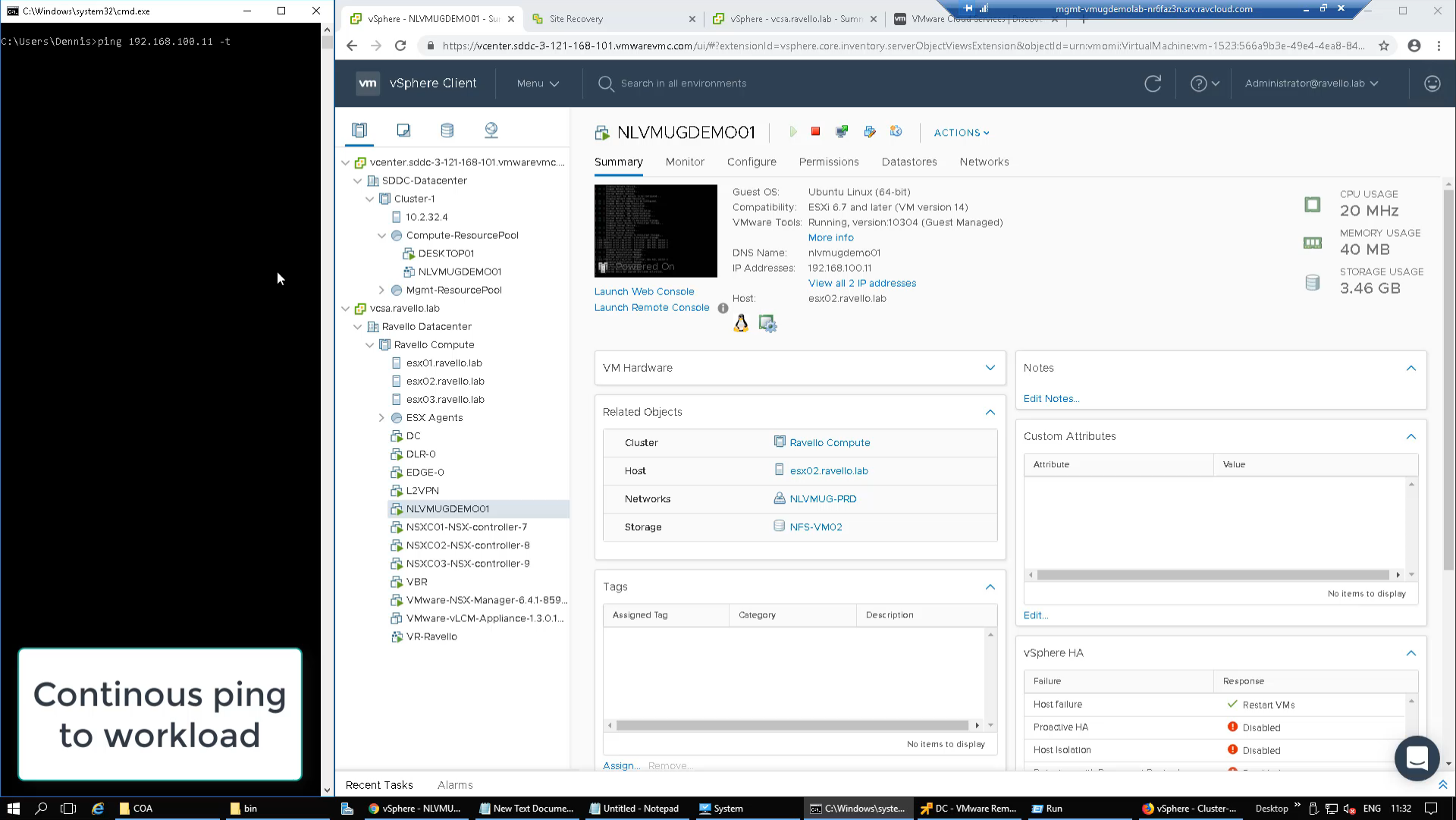
PSC port: 443

User name: cloudadmin@vmc.local

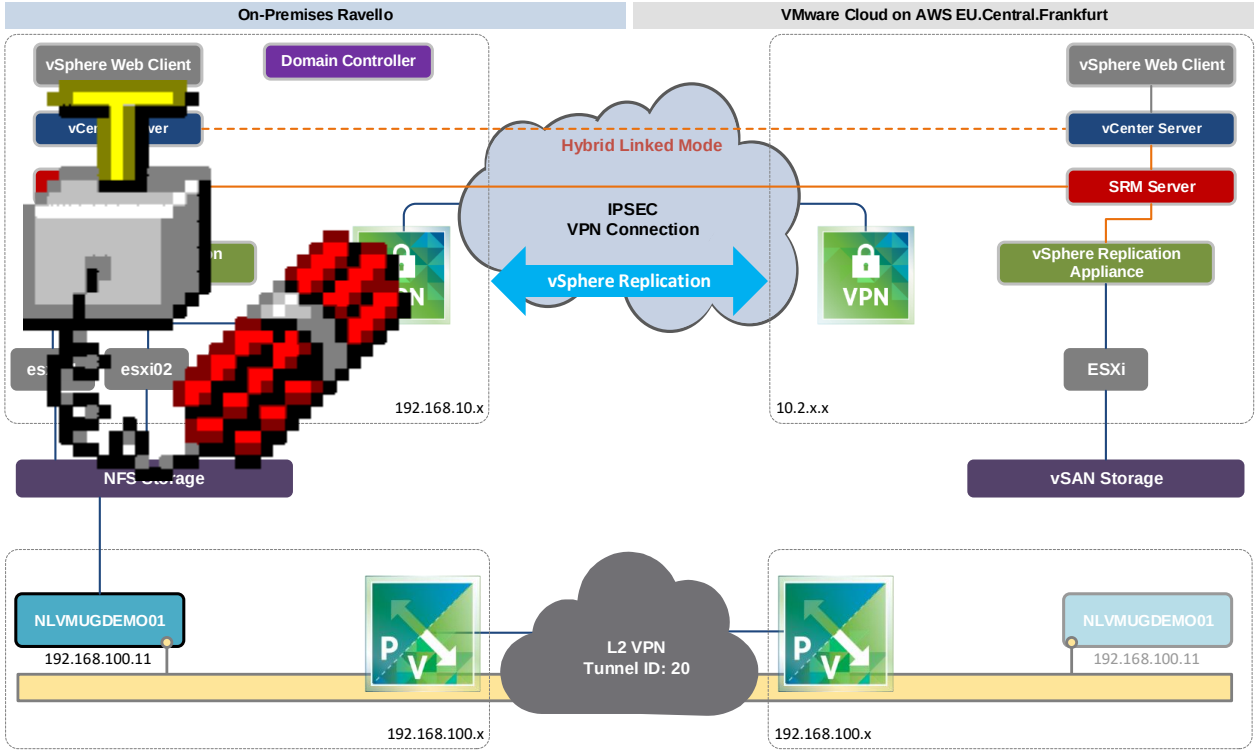
Password: ••••••••••••••••

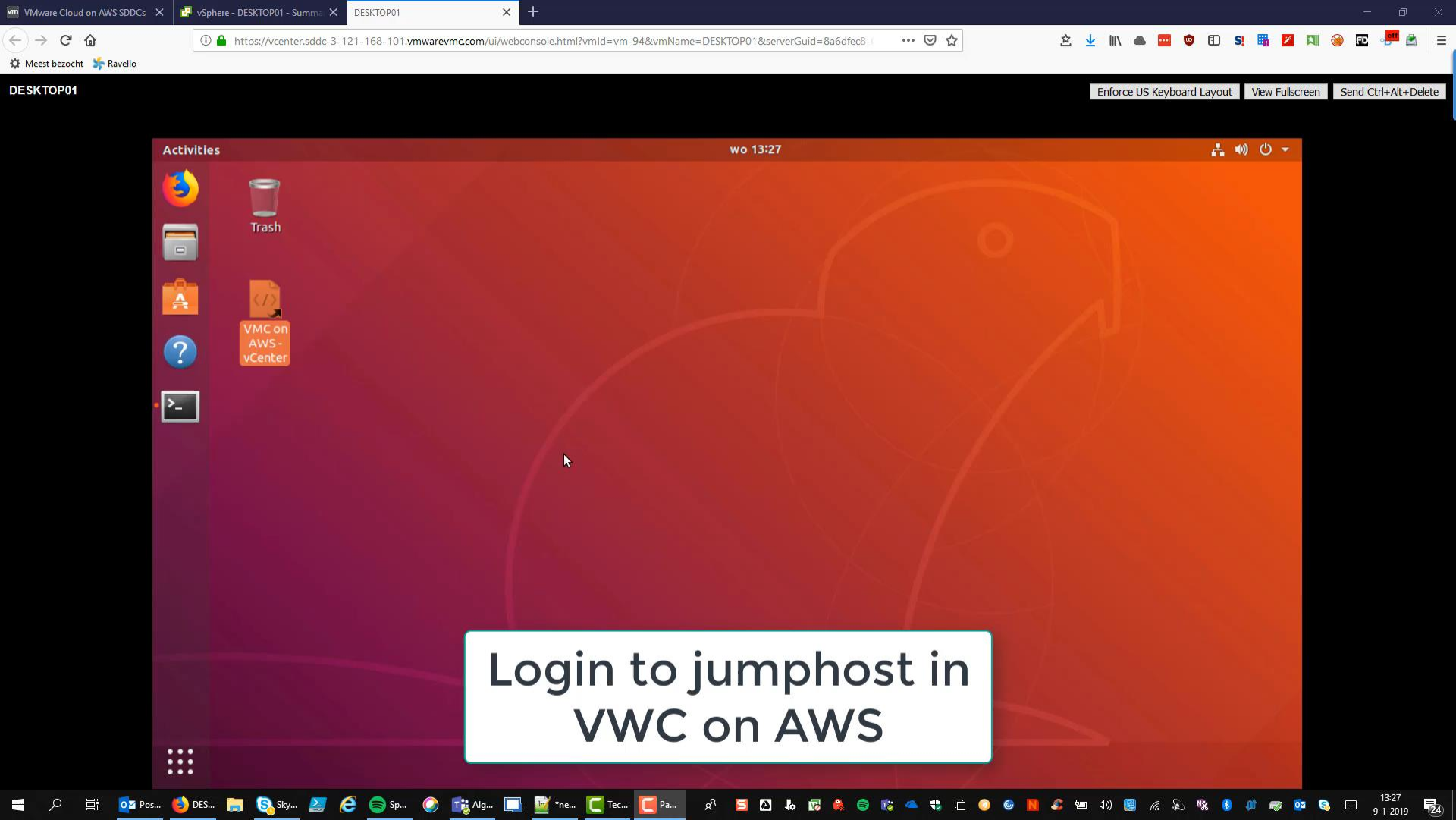
CANCEL NEXT


On-Premises Ravello
VMware Cloud on AWS EU.Central.Frankfurt
vSphere Web Client
Domain Controller
vCenter Server
SRM Server
vSphere Replication Appliance
esxi01
esxi02
esxi03
NFS Storage
NLVMUGDEMO01
192.168.100.11
192.168.10.x
192.168.100.x
Hybrid Linked Mode
IPSEC
VPN Connection
vSphere Replication
VPN
VPN
L2 VPN
Tunnel ID: 20
vSphere Web Client
vCenter Server
SRM Server
vSphere Replication Appliance
ESXi
vSAN Storage
NLVMUGDEMO01
192.168.100.11
10.2.x.x
192.168.100.x
Stap 5
Replicate and protect VM's


C:\Windows\system32\cmd.exe
C:\Users\Dennis>ping 192.168.100.11 -t
Continous ping to workload
vSphere - NLVMUGDEMO01 - Su
Site Recovery
vSphere - vcsa.ravello.lab - Summ
VMware Cloud Services
mgmt-vmugdemolab-nr6faz3n.srv.ravcloud.com
https://vcenter.sddc-3-121-168-101.vmwarevmc.com/ui/#?extensionId=vsphere.core.inventory.serverObjectViewsExtension&objectId=urn:vmomi:VirtualMachine:vm-1523:566a9b3e-49e4-4ea8-84...
vSphere Client
Menu
Search in all environments
Administrator@ravello.lab
vcenter.sddc-3-121-168-101.vmwarevmc...
SDDC-Datacenter
Cluster-1
10.2.32.4
Compute-ResourcePool
DESKTOP01
NLVMUGDEMO01
Mgmt-ResourcePool
vcsa.ravello.lab
Ravello Datacenter
Ravello Compute
esx01.ravello.lab
esx02.ravello.lab
esx03.ravello.lab
ESX Agents
DC
DLR-0
EDGE-0
L2VPN
NLVMUGDEMO01
NSXC01-NSX-controller-7
NSXC02-NSX-controller-8
NSXC03-NSX-controller-9
VBR
VMware-NSX-Manager-6.4.1-859...
VMware-vLCM-Appliance-1.3.0.1...
VR-Ravello
NLVMUGDEMO01
ACTIONS
Summary
Monitor
Configure
Permissions
Datastores
Networks
Guest OS: Ubuntu Linux (64-bit)
Compatibility: ESXi 6.7 and later (VM version 14)
VMware Tools: Running, version:10304 (Guest Managed)
More info
DNS Name: nlvmugdemo01
IP Addresses: 192.168.100.11
View all 2 IP addresses
Host: esx02.ravello.lab
Launch Web Console
Launch Remote Console
CPU USAGE
20 MHz
MEMORY USAGE
40 MB
STORAGE USAGE
3.46 GB
VM Hardware
Related Objects
Cluster Ravello Compute
Host esx02.ravello.lab
Networks NLVMUG-PRD
Storage NFS-VM02
Notes
Edit Notes...
Custom Attributes
Attribute
Value
No items to display
Edit...
Tags
Assigned Tag
Category
Description
No items to display
Assign...
Remove...
vSphere HA
Failure
Response
Host failure
Restart VMs
Proactive HA
Disabled
Host Isolation
Disabled
Recent Tasks
Alarms
COA
bin
vSphere - NLVMU...
New Text Docume...
Untitled - Notepad
System
C:\Windows\syste...
DC - VMware Rem...
Run
vSphere - Cluster-...
Desktop
ENG
11:32

Failover in case of Disaster




VMware Cloud on AWS SDDCs
vSphere - DESKTOP01 - Summa
DESKTOP01
https://vcenter.sddc-3-121-168-101.vmwarevmc.com/ui/webconsole.html?vmId=vm-94&vmName=DESKTOP01&serverGuid=8a6dfec8-
Meest bezocht
Ravello
DESKTOP01
Enforce US Keyboard Layout
View Fullscreen
Send Ctrl+Alt+Delete
Activities
wo 13:27
Trash
VMC on AWS - vCenter
Login to jumphost in VWC on AWS
13:27
9-1-2019

Lessons learned

Documentatie (NSX-V vs NSX-T)
Support
Jumpbox benodigd in AWS (SRM)
Single pane of glass alleen via on-prem vCenter
L2VPN NSX-T niet te koppelen met NSX-V -> Standalone NSX-Edge

Vragen



Meer weten?

Robert Verdam
Consultant BCONN ICT
Robert.Verdam@bconn.nl
Twitter @rverdam

Dennis van der Aalst
Consultant BCONN ICT
Dennis.vander.Aalst@bconn.nl
Twitter @dvdaalst

- SRM
- AWS
- Replicatie mogelijkheden
- DRaaS
- Verbinden on-prem -> AWS (AWS Transit Gateway, HCX, VeloCloud)