

Azure IaaS - the IT-Pro approach to Hybrid Cloud

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PLATINUM

Steelcase



GOLD



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POWERED BY



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Why this talk

Why this talk?

- Doing Microsoft IT Camps in Germany ;-)
- To help on-premises IT-Pros to get in touch with Azure IaaS



PREPWORK



Demo: Deploy VM with Powershell

WORK WITH VMS

Hyper-V and Azure IaaS

Completely different concepts

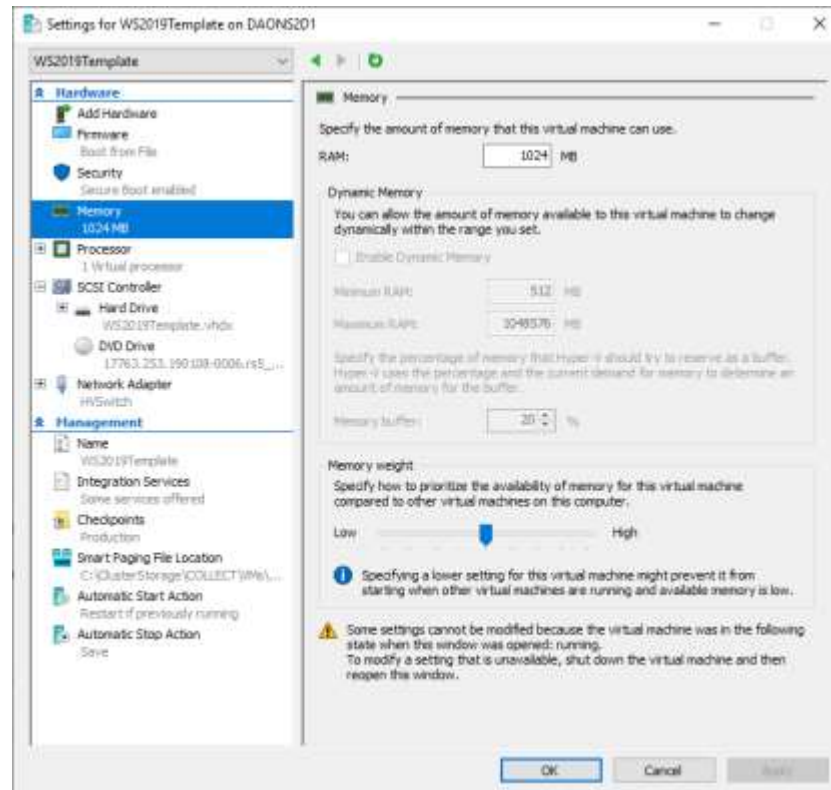
- Hyper-V is Virtualization (not Private Cloud)
- Azure IaaS follows the self-service Cloud Model



Virtual Machines

Hyper-V VMs

- Flexible Configurable



Azure VM Sizes

- T-Shirt sizes (with fixed Memory – vCPU – IOPs)

Search by VM size: Clear all filters

Size: Small (0-4) Family: General purpose Premium disk: Supported Add filter

Showing 16 of 236 VM sizes | Subscription: Windows Azure MSDN Visual Studio Premium | Region: West Europe | Current size: Standard_DS1_v2

VM SIZE	OFFERING	FAMILY	VCPUS	RAM (GB)	DATA DISKS	MAX IOPS	TEMPORARY S...	PREMIUM DISK...	COST/MONTH
B1ls	Standard	General purpose	1	0.5	2	200	4 GB	Yes	€3.76
B1ms	Standard	General purpose	1	2	2	800	4 GB	Yes	€15.06
B1s	Standard	General purpose	1	1	2	400	4 GB	Yes	€7.53
B2ms	Standard	General purpose	2	8	4	2400	16 GB	Yes	€60.21
B2s	Standard	General purpose	2	4	4	1600	8 GB	Yes	€30.12
B4ms	Standard	General purpose	4	16	8	3600	32 GB	Yes	€120.48
D0s_v3	Standard	General purpose	2	8	4	5200	16 GB	Yes	€75.29
D4s_v3	Standard	General purpose	4	16	8	6400	32 GB	Yes	€150.58
D51	Standard	General purpose	1	3.5	4	3200	7 GB	Yes	€32.70
DS1_v2	Standard	General purpose	1	3.5	4	3200	7 GB	Yes	€42.68
D52	Standard	General purpose	2	7	8	6400	14 GB	Yes	€105.41
D52_v2	Standard	General purpose	2	7	8	6400	14 GB	Yes	€85.33
D52_v2	Promo (Exp...	General purpose	2	7	8	6400	14 GB	Yes	€85.33
D53	Standard	General purpose	4	14	16	12800	28 GB	Yes	€210.81
D53_v2	Standard	General purpose	4	14	16	12800	28 GB	Yes	€170.66

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. [View Azure pricing calculator](#). Final charges will appear in your local currency in cost analysis and billing views.

Networking

Hyper-V Networking

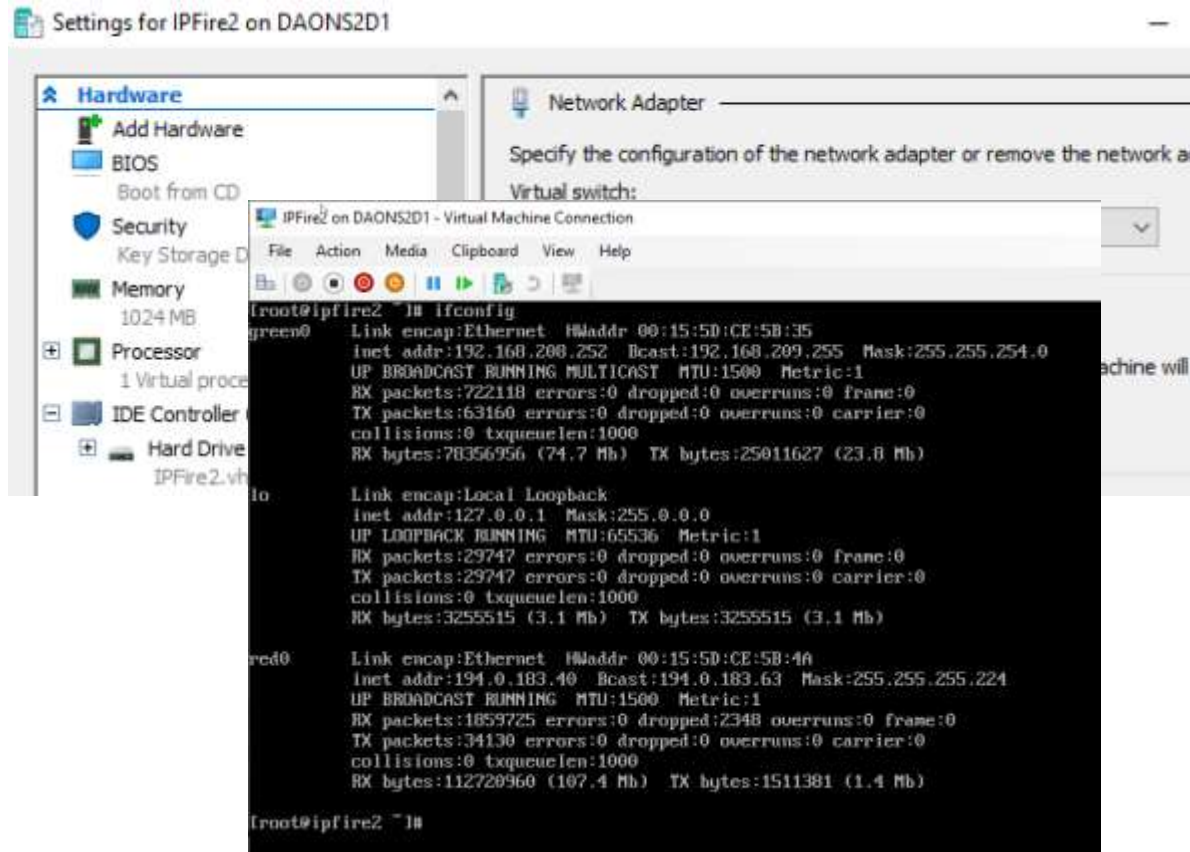
- No isolation by default
 - VLAN
 - SDN

Azure Networking

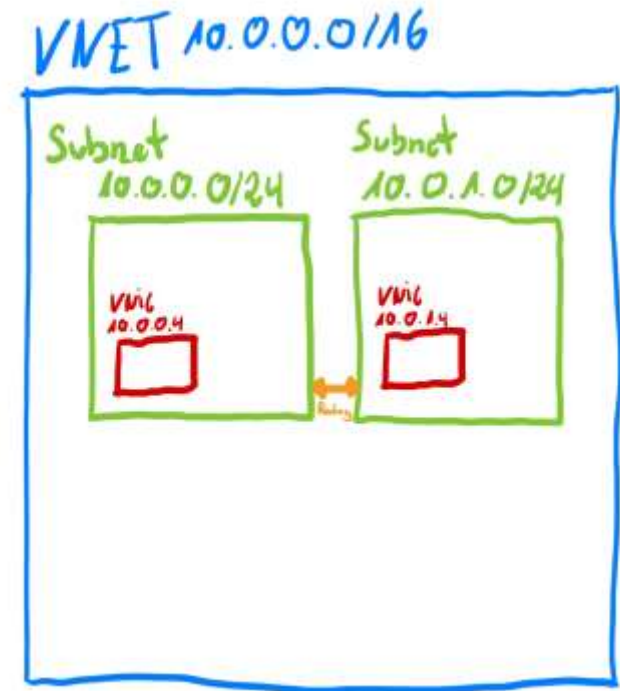
- Always isolated
- No VLANs used
- Always SDN

Networking

Hyper-V Networking



Azure Networking



Azure Networking

Azure Network specialties

- Network Cards use DHCP no static IPs
- NSG (Network Security Group) is a external Firewall „light“
- Gateway, DNS and DHCP Server are deployed by Azure
- DDoS Protection



IIS1-NIC
Network interface



IIS1-NSG
Network security group



DNS servers

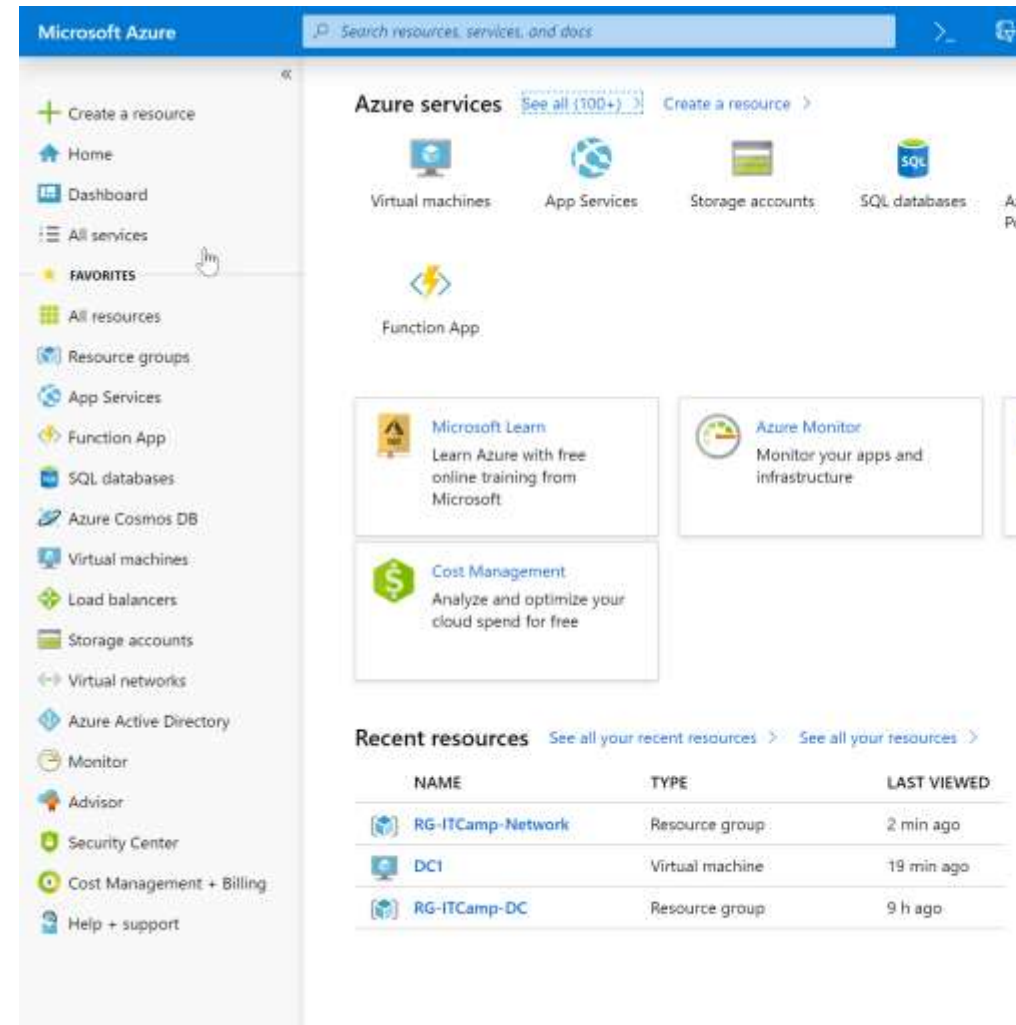


DDoS protection

CREATING AZURE VMS...

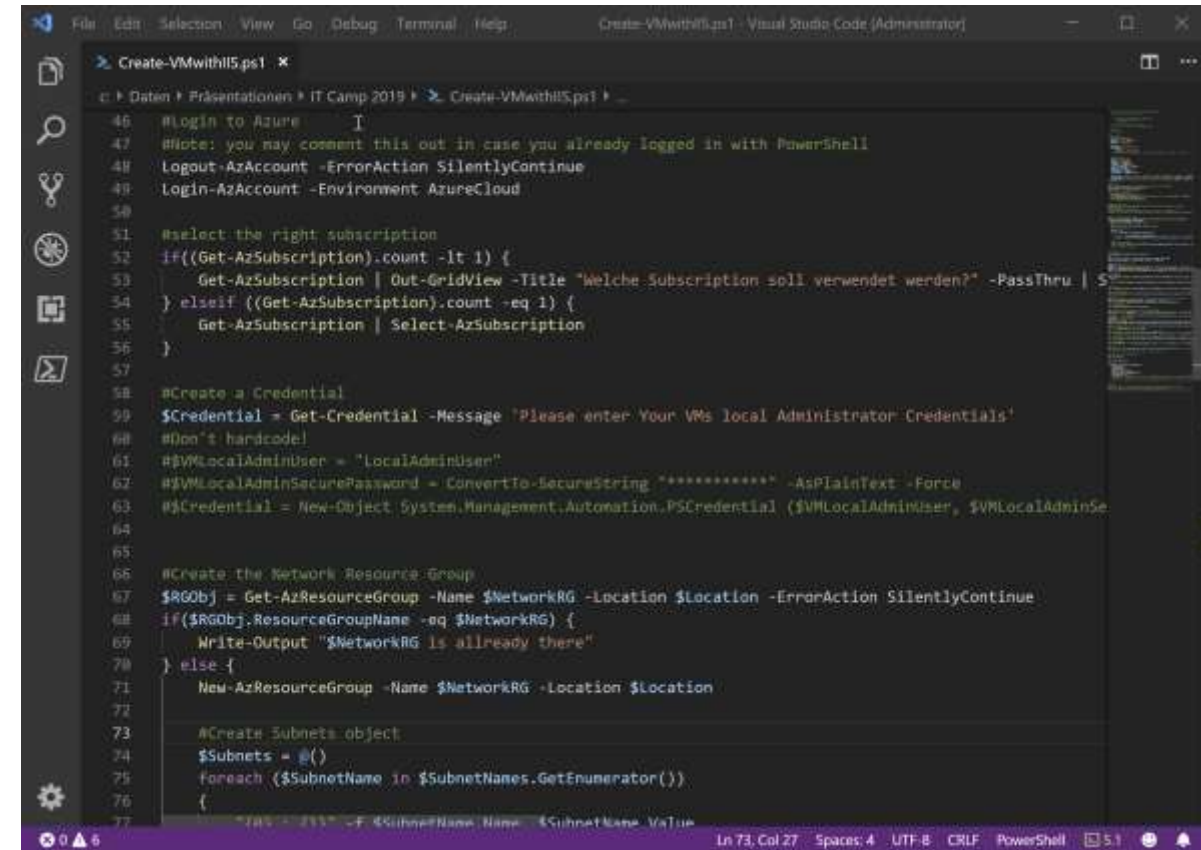
Portal

- Azure Portal
 - Beautiful fast Portal
 - Hyper-V has nothing like it
 - Use it for task you do rather once
 - Helps with Wizard (f.e. VM creation)
 - For everyone who is not a Shell Wizard



PowerShell

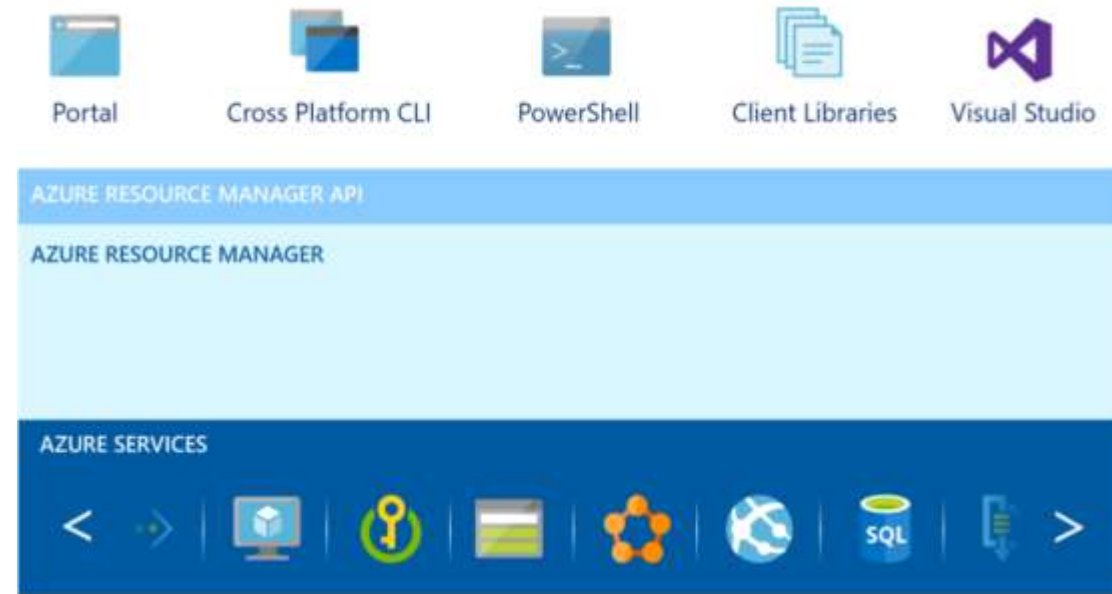
- PowerShell
 - Use Powershell if you have repeating tasks
 - Much faster than clicking through the portal
- Hyper-V Powershell is not Azure IaaS Powershell



```
46 #Login to Azure
47 #Note: you may comment this out in case you already logged in with PowerShell
48 Logout-AzAccount -ErrorAction SilentlyContinue
49 Login-AzAccount -Environment AzureCloud
50
51 #select the right subscription
52 if((Get-AzSubscription).count -lt 1) {
53     Get-AzSubscription | Out-GridView -Title "Welche Subscription soll verwendet werden?" -PassThru | S
54 } elseif ((Get-AzSubscription).count -eq 1) {
55     Get-AzSubscription | Select-AzSubscription
56 }
57
58 #Create a Credential
59 $Credential = Get-Credential -Message "Please enter Your VMs local Administrator Credentials"
60 #Don't hardcode!
61 $VMLocalAdminUser = "LocalAdminUser"
62 $VMLocalAdminSecurePassword = ConvertTo-SecureString "*****" -AsPlainText -Force
63 $Credential = New-Object System.Management.Automation.PSCredential ($VMLocalAdminUser, $VMLocalAdminSe
64
65
66 #Create the Network Resource Group
67 $RGObj = Get-AzResourceGroup -Name $NetworkRG -Location $Location -ErrorAction SilentlyContinue
68 if($RGObj.ResourceGroupName -eq $NetworkRG) {
69     Write-Output "$NetworkRG is already there"
70 } else {
71     New-AzResourceGroup -Name $NetworkRG -Location $Location
72
73     #Create Subnets object
74     $Subnets = @()
75     foreach ($SubnetName in $SubnetNames.GetEnumerator())
76     {
77         "78" -f $SubnetName.Name, $SubnetName.Value
```


ARM Templates

- ARM Templates
 - ARM is the Azure Engine
 - Azure Resource Manager works with it
 - I can't jet ;-)
 - If you are familiar with JSON it is your thing
 - One Resource to start:
[Getting started with Azure Resource Manager](#)













Demo: Azure Portal and ARM

CONNECTING ON-PREMISE WITH AZURE

How to Connect

	Internet Connectivity		<ul style="list-style-type: none">• Internet facing with public IP addresses in Azure• DNS, load balancing, DDoS protection, WAF
	Remote access point-to-site connectivity		<ul style="list-style-type: none">• Remote Access to VNet/On-prem• Connect from anywhere• Mac, Linux, Windows• Radius/AD authentication
	Site-to-site VPN connectivity		<ul style="list-style-type: none">• High throughput, secure cross-premises connectivity• BGP, active-active for high availability & transit routing
	ExpressRoute private connectivity		<ul style="list-style-type: none">• Private connectivity to Microsoft services (O365, Azure PaaS services)• Mission critical workloads

How to Connect

- Through the Internet
 - Always possible (only need a public IP)
 - But unsecure
 - open Port needed
 - Data flows unprotected through the Internet
 - VM has bigger Attack Surface



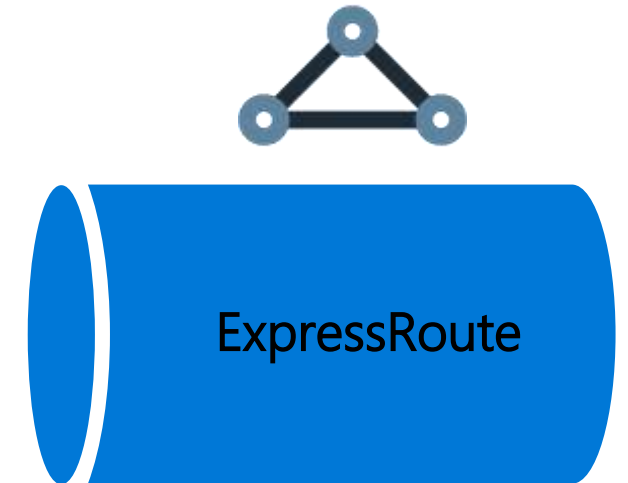
How to Connect

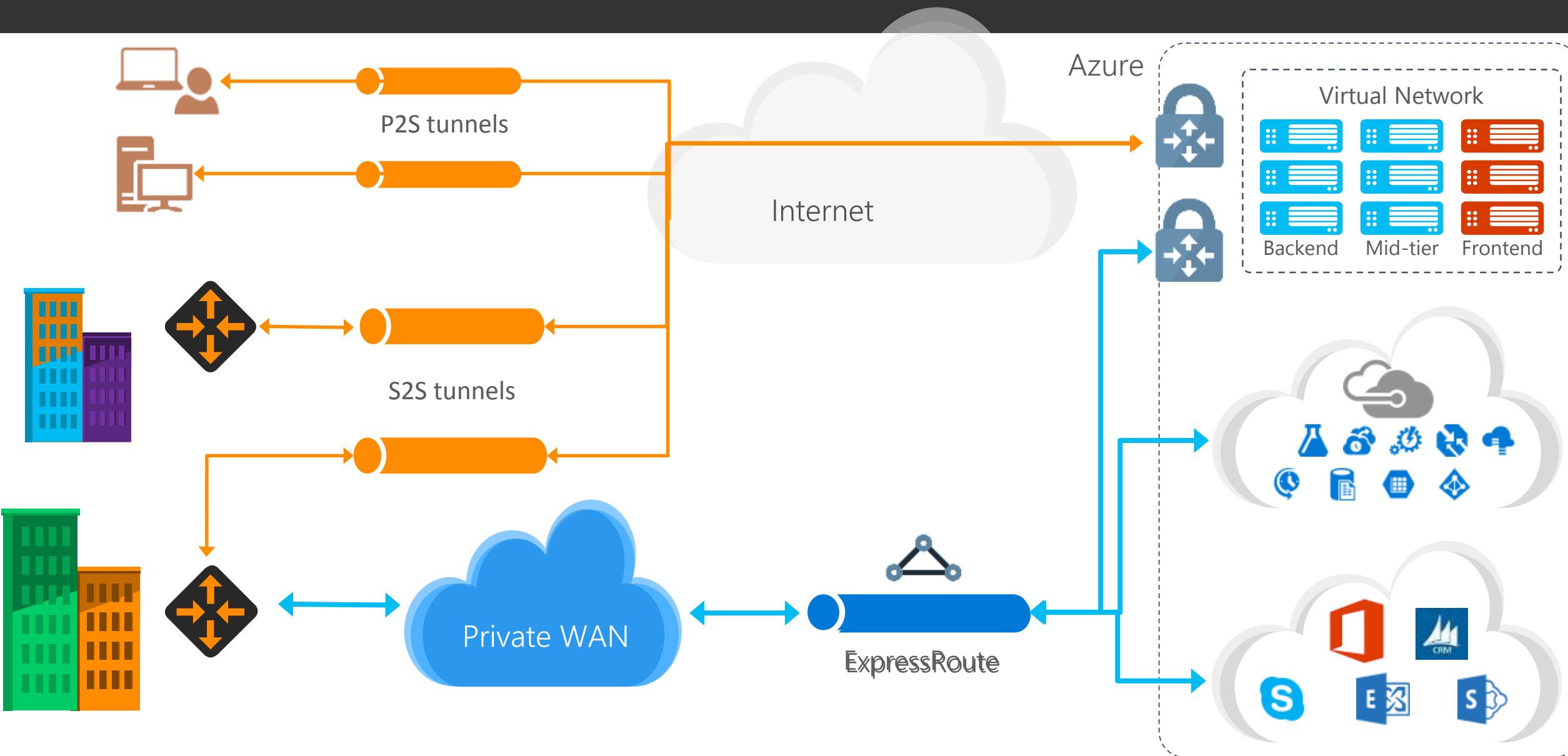
- Using a VPN
 - Complex even with VPN Gateway
 - IPsec is not IPsec is not IPsec
 - Separate VPN Gateway need on-premises
 - Extra Cost in Azure (Basic Gateway ~30 €/month)
 - Alternative use Linux VPN in Azure



How to Connect

- ExpressRoute
 - Direct connection to an Azure Edge Site
 - Need Carrier who offers ExpressRoute
 - Very expensive
 - Carrier (mainly MPLS)
 - ExpressRoute in Azure
 - Depending on Bandwidth and Traffic





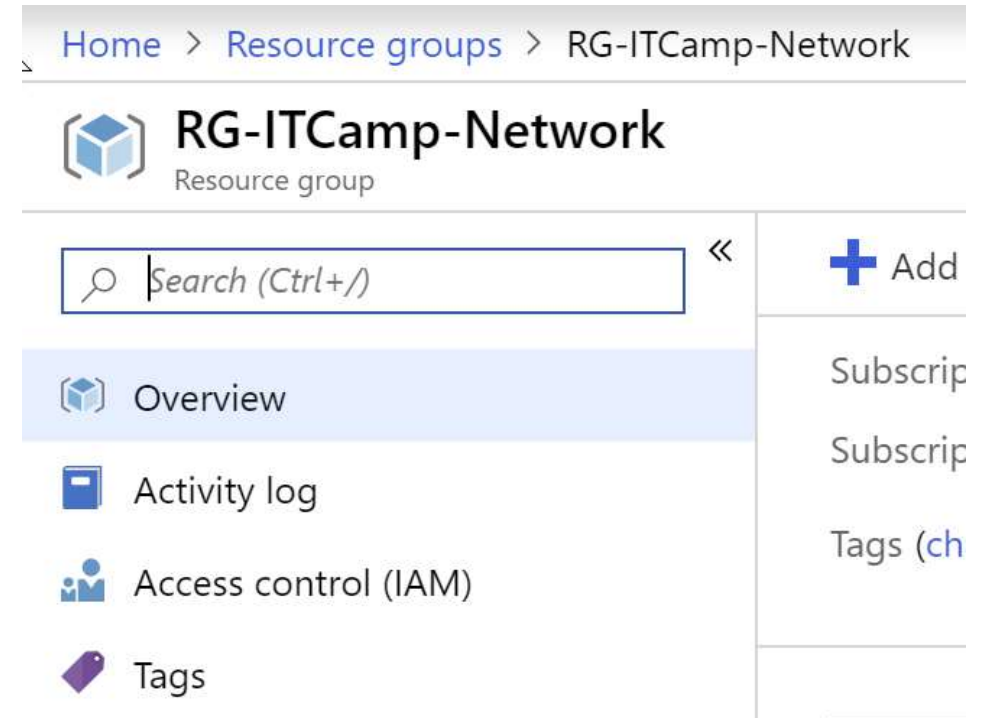


Demo: VPN Gateway

TIPPS

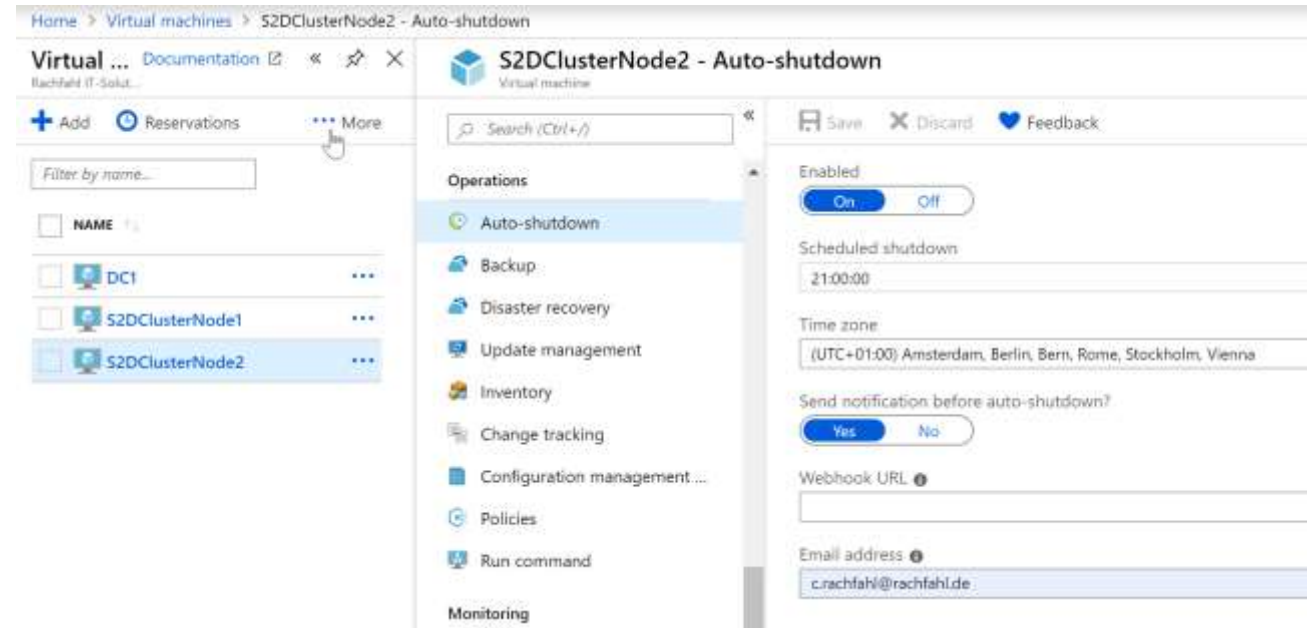
Resource Groups

- Resource Groups
 - Container for Objects
 - When deleted all content is deleted too
 - Choose a naming convention (e.g. RG-....) and follow it



Auto Shutdown

- Configure Auto Shutdown
 - If your testing or developing a solution
 - Configure Autoshtutdown



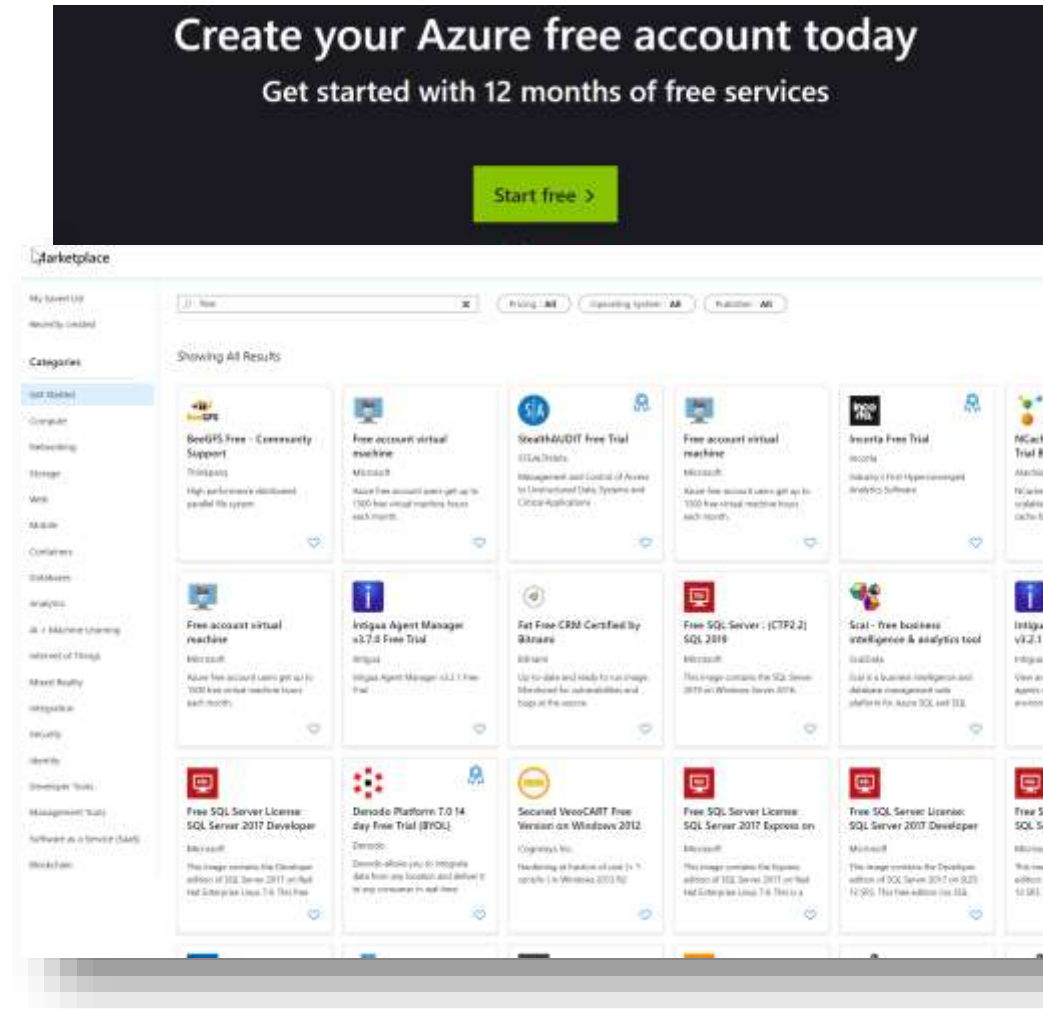
Azure Free Offerings

Start with free resources

- Get a 30 day free testaccount

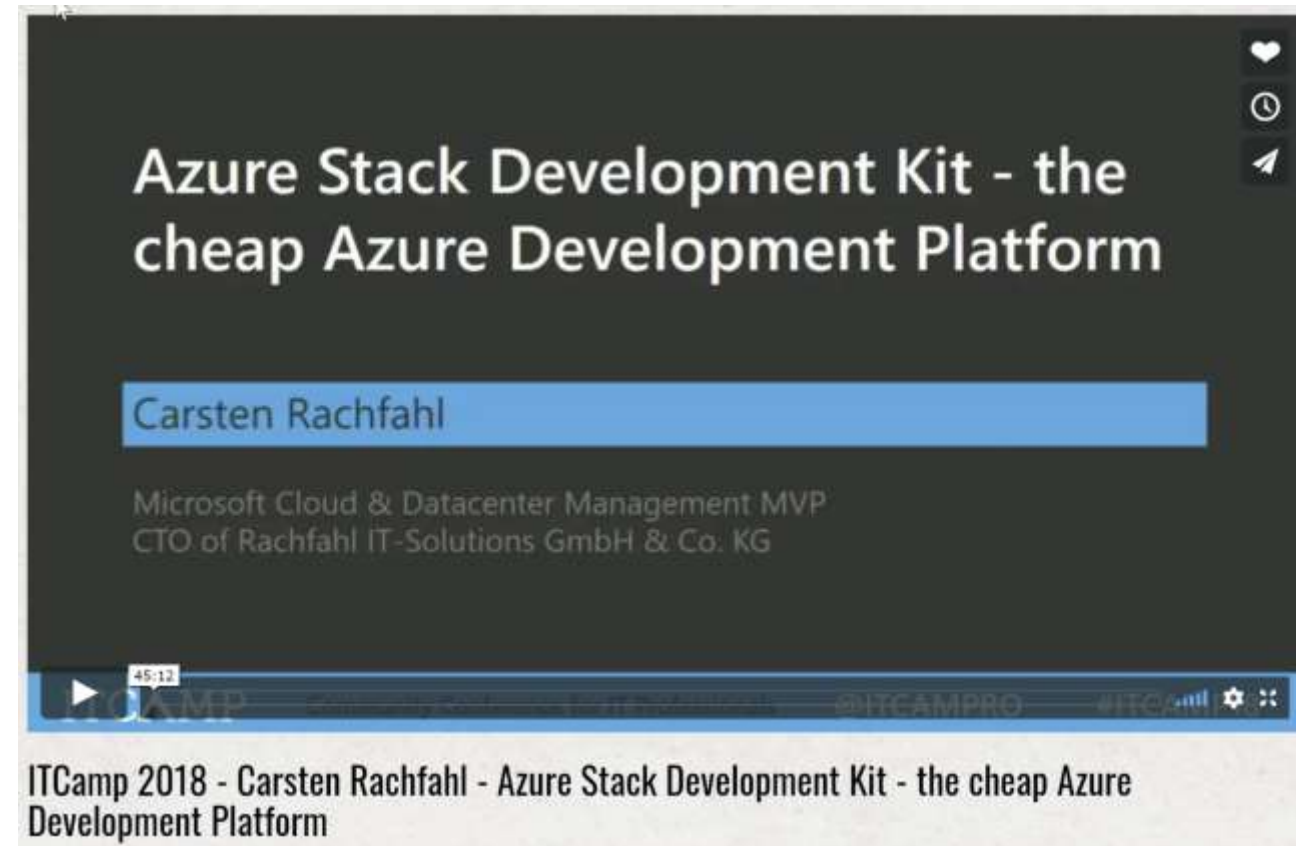
<https://azure.microsoft.com/en-us/free/>

- Enter "free" in the Marketplace search



Use Azure Stack ASDK

- If you have a server left or a big Hyper-V VM
- Use Azure Stack Development Kit
- <https://video.itcamp.ro/video/280054815>



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Q & A