Citrix Admin to Azure Rockstar

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Mike Nelson
@mikenelsonIO

Solutions Architect @ Pure Storage
Citrix CTA - CUGC Content Committee
Microsoft MVP Cloud & Datacenter
VMware vExpert

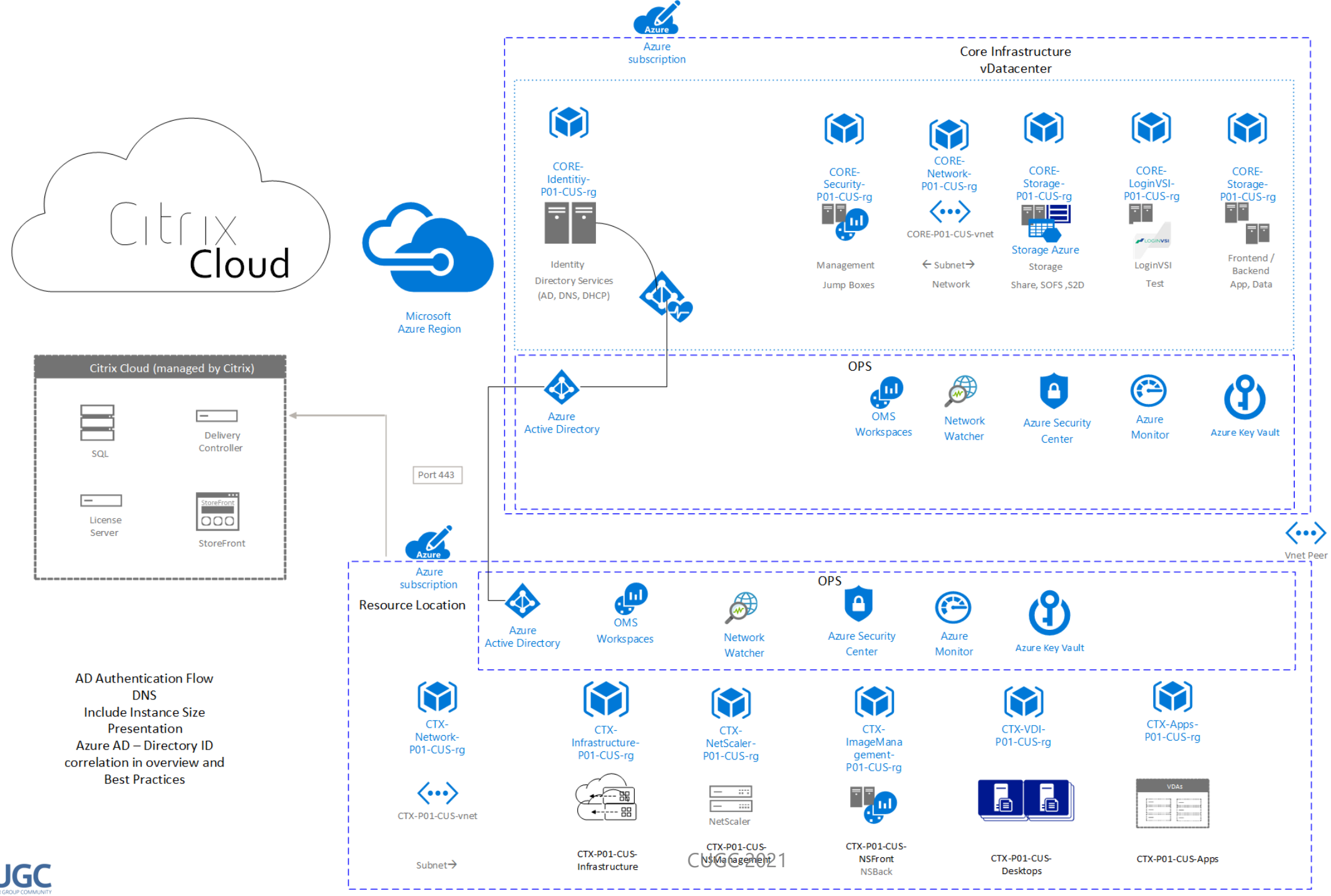

100
120
140
160
180
200
220
240
260
kmh

Carry on two distinct conversations at once (two sets of vocal cords)

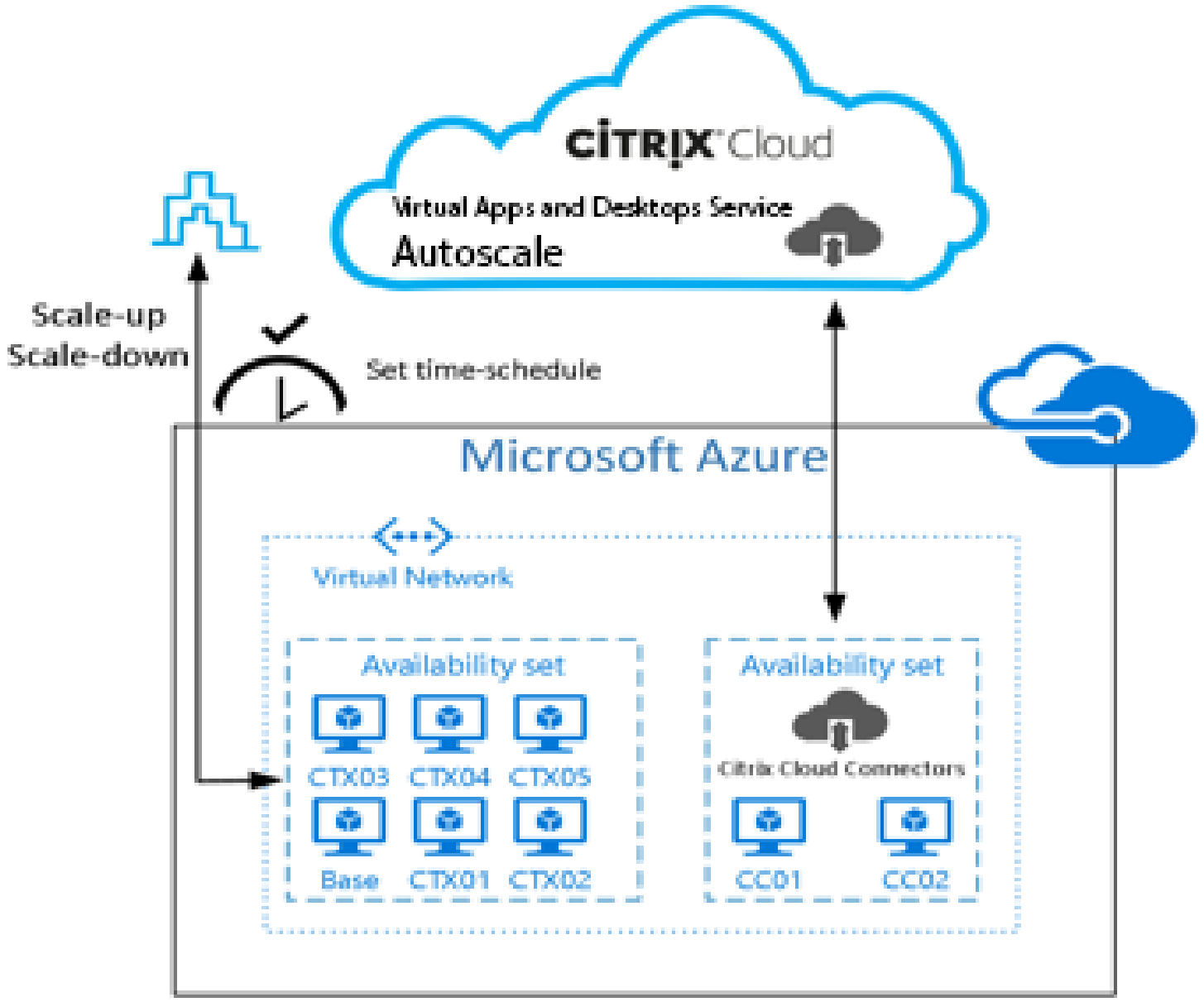
Rest one half of their brain while the other remains active

Topics

- Citrix & Azure
- Key Azure concepts
- Demos



AD Authentication Flow
DNS
Include Instance Size
Presentation
Azure AD – Directory ID correlation in overview and Best Practices


CITRIX Cloud
Virtual Apps and Desktops Service
Autoscale
Scale-up
Scale-down
Set time-schedule
Microsoft Azure
Virtual Network
Availability set
CTX03
CTX04
CTX05
Base
CTX01
CTX02
Availability set
Citrix Cloud Connectors
CC01
CC02

Accountability & Responsibility

Citrix's goal is to maintain at least 99.9% availability in any 30 calendar day period. Service interruptions and scheduled maintenance can be monitored on an ongoing basis at http://status.cloud.com.

Limitations

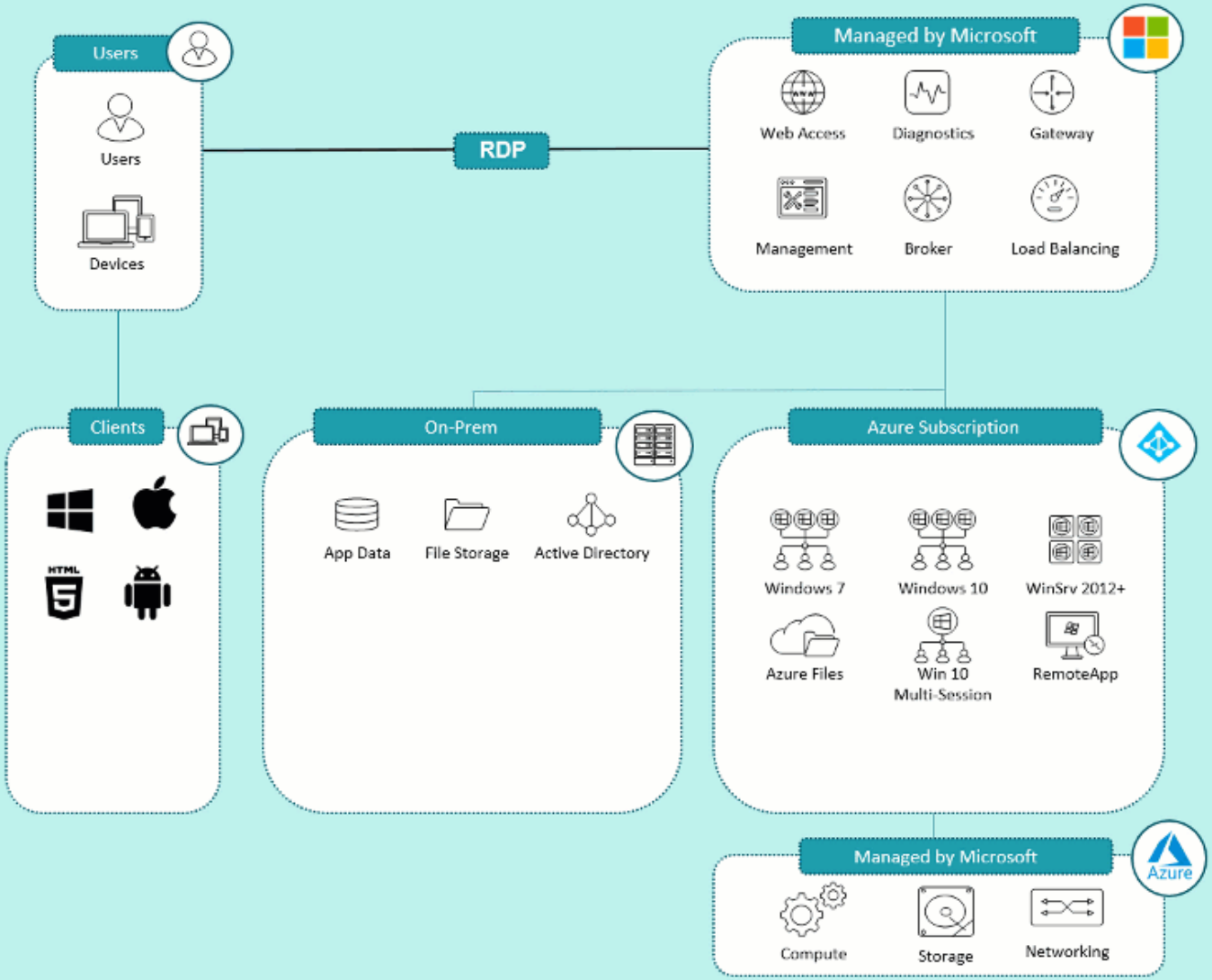
The calculation of this Service Level Goal will not include loss of availability from the following causes:

Customer failure to follow configuration requirements for Citrix Cloud documented on http://docs.citrix.com/en-us/citrix-cloud.html.

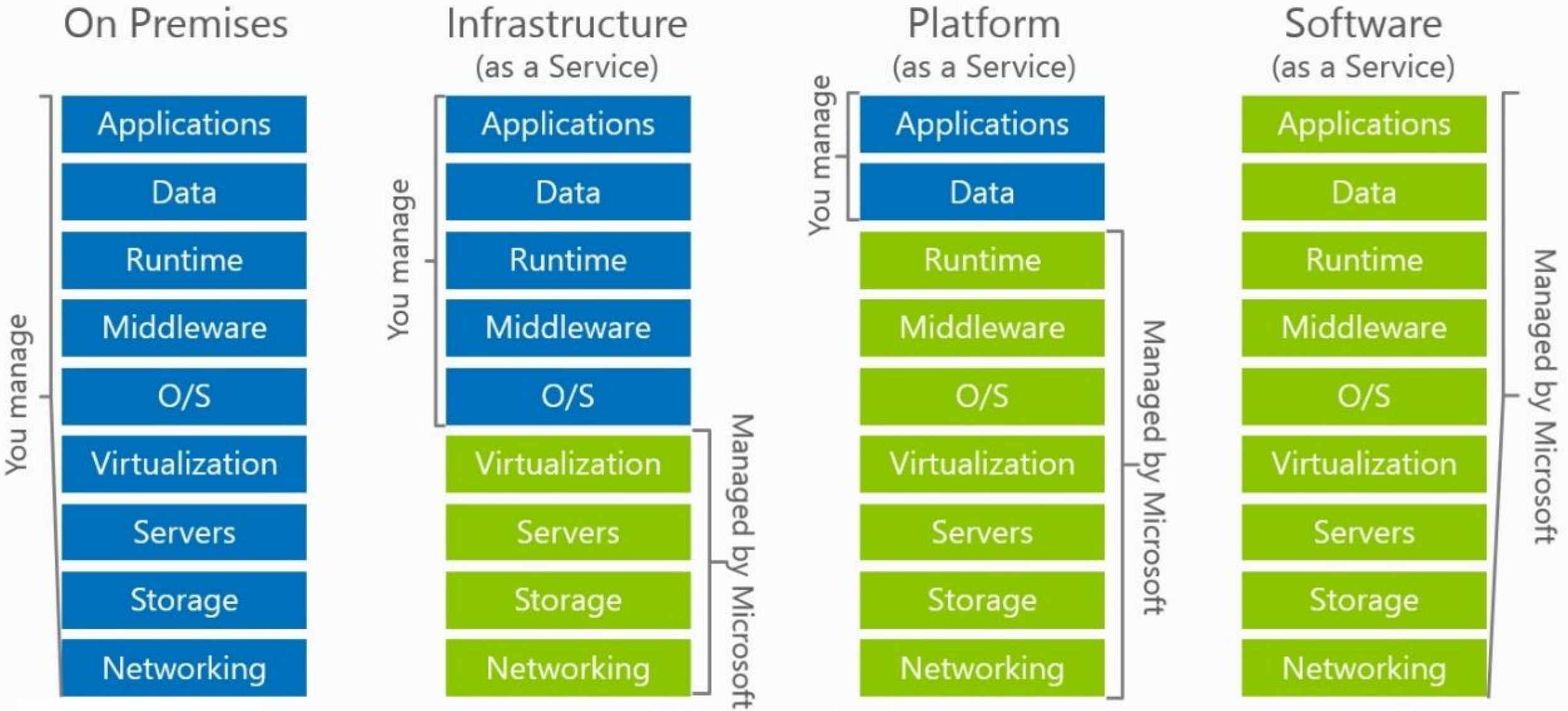
Any component not managed by Citrix including, but not limited to, customer controlled physical and virtual machines, customer installed and maintained operating systems and software, customer installed and controlled networking equipment or other hardware; customer defined and controlled security settings, group policies and other configuration policies; public cloud provider failures, Internet Service Provider failures or other external to Citrix's control.

Service disruption due to reasons beyond Citrix's control, including natural disaster, war or acts of terrorism, government action.

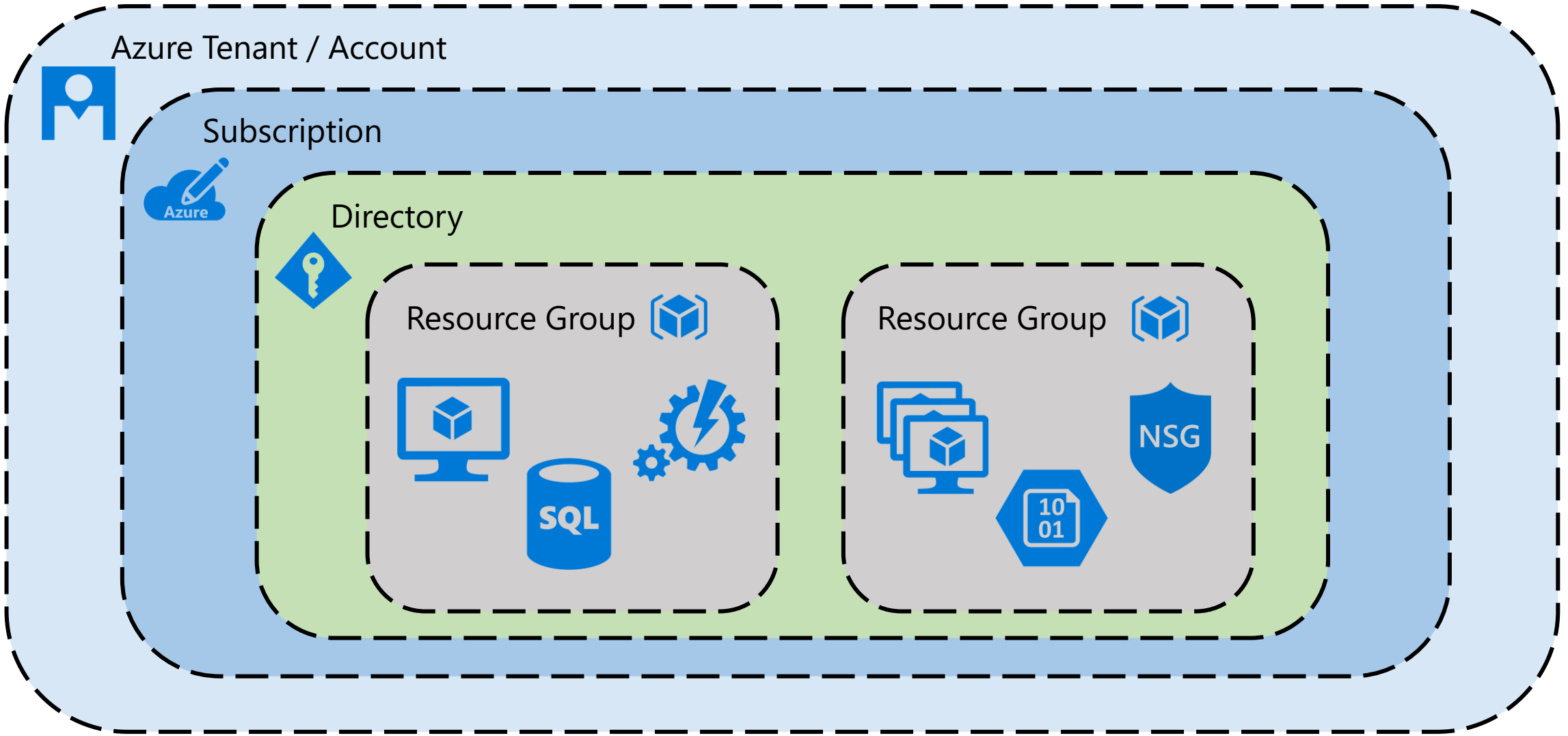
Microsoft WVD



Cloud Models



Azure


Azure Tenant / Account
Subscription
Azure
Directory
Resource Group
SQL
Resource Group
NSG
10
01

- VPN
- ExpressRoute
- SD-WAN

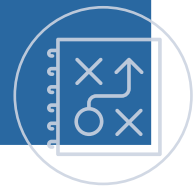
Connectivity

- Tenant
- EA (License)
- Limits
- Access
- Management Groups

Subscriptions

- Portal
- RESTful API's/Graph
- VS (IDE)
- Cloud Shell
- …

Manage



- Provisioning
- Orchestration
- Lifecycle
- ARM-as-Code

Resource Manager (ARM)

- Logical grouping
- RBAC
- 1-stop destroy (+/-)

Resource Groups

- Identity Access Management
- Object provisioning
- Resource & App control
- AD Sync

Active Directory (AAD)

- Web, SaaS, PaaS
- Provisioning
- Registrations

Applications

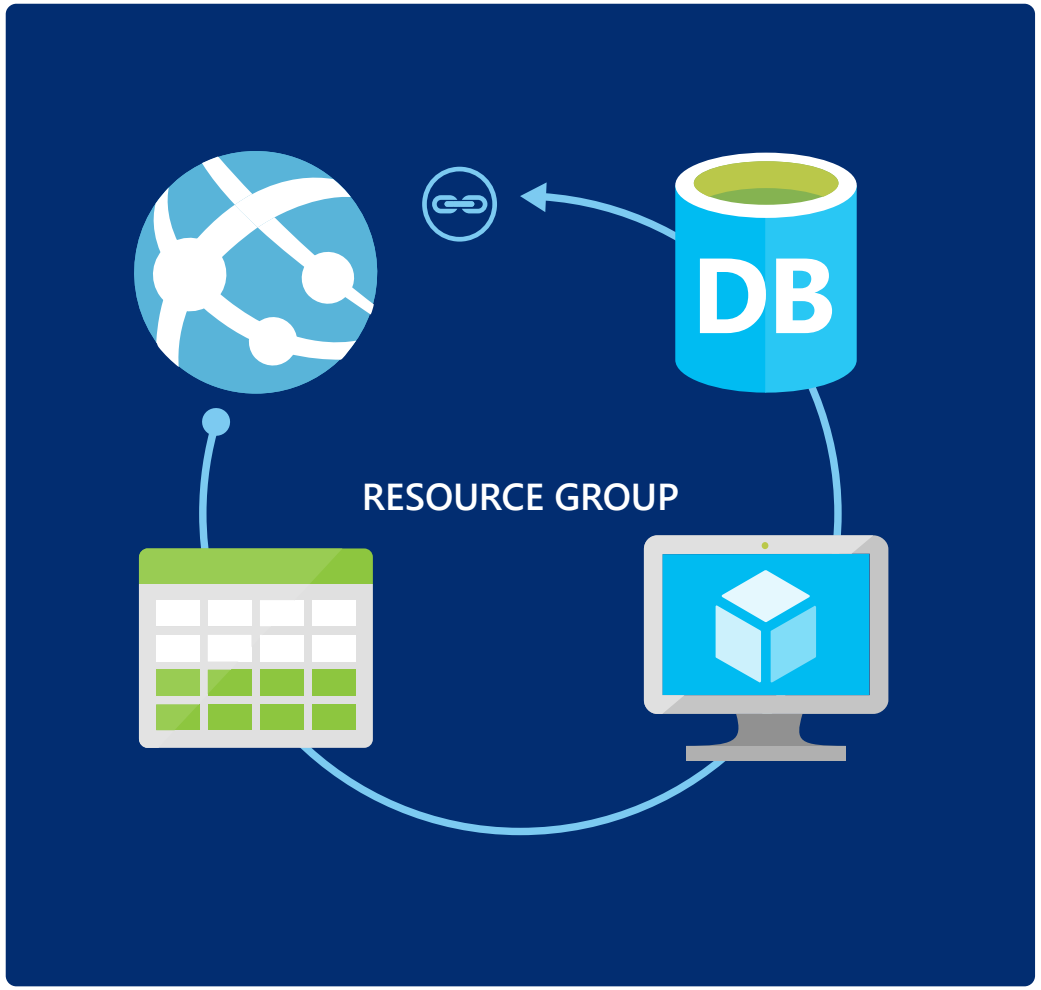
Azure Resource Manager

Application Lifecycle Container

Declarative solution for Deployment and Configuration

Consistent Management Layer

Azure Bicep



Resource Groups

- → Tightly coupled containers of multiple resources of similar or different types
- → Every resource *must* exist in one and only one resource group
- → Resource groups can span regions

Coupling for Resources

A Resource Group is a unit of management

→ **Lifecycle:** deployment, update, delete, status

→ **Identity:** resources can talk to each other

→ **Grouping:** Metering, billing, quota: applied & rolled up to group

Resource Group Lifecycle

Question:

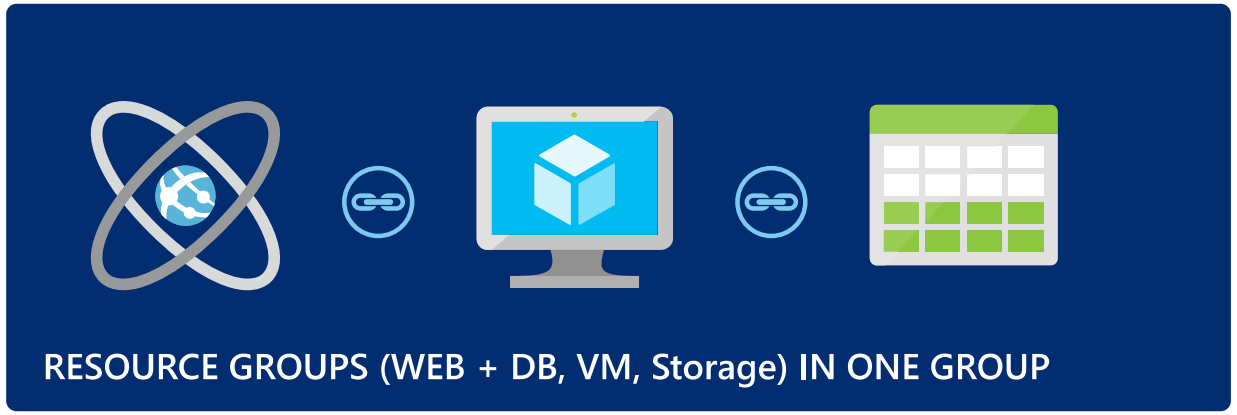
Should these resources be in the same group or a different one?

Hint:

Do they have common lifecycle and management?

Answer:

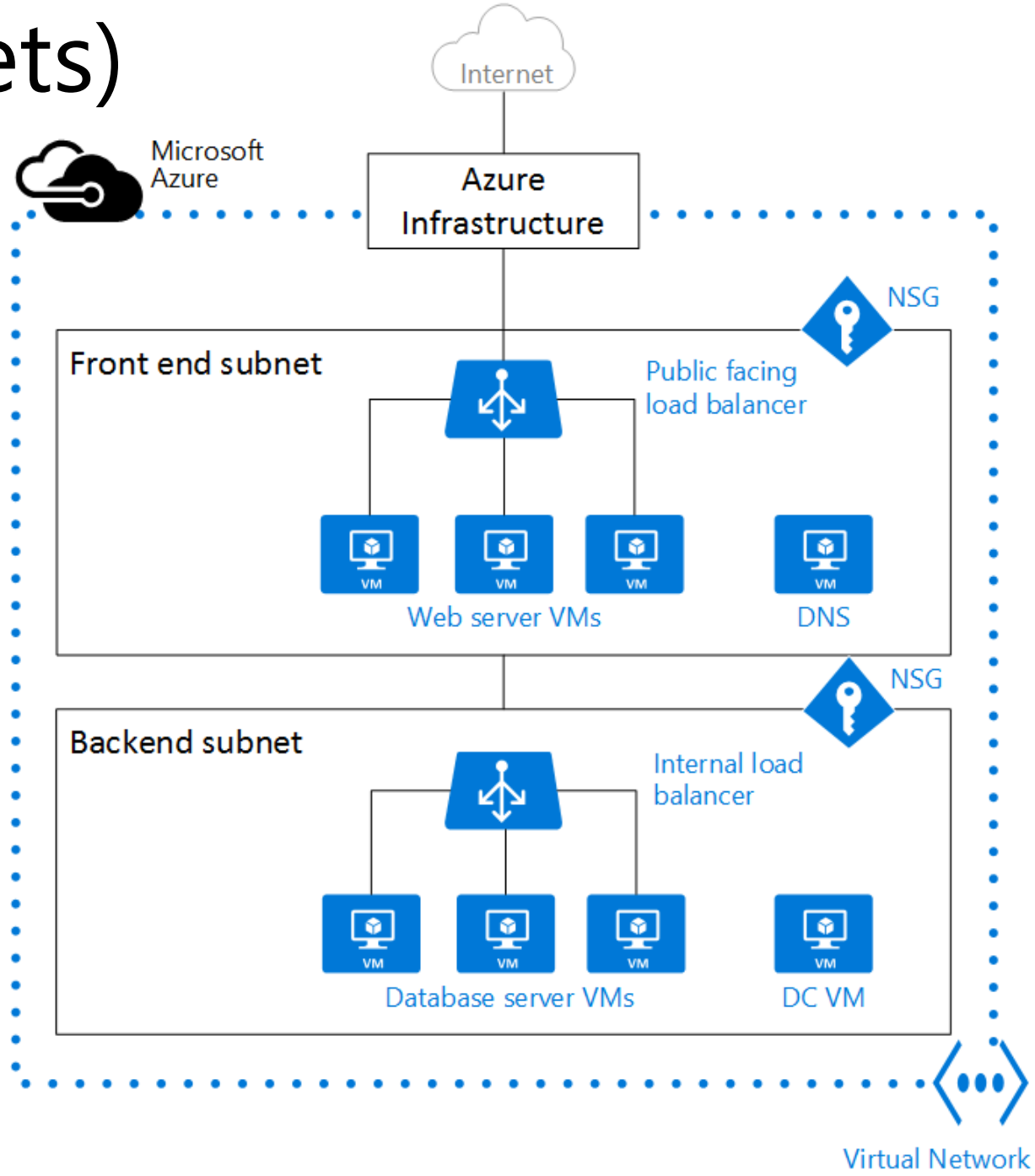
Up to you.



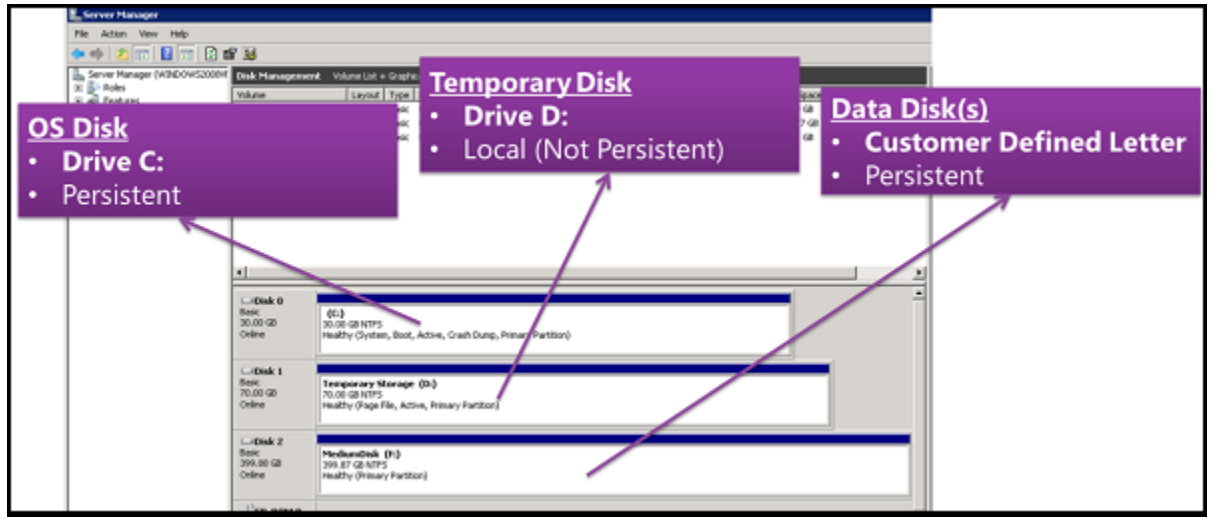
OR

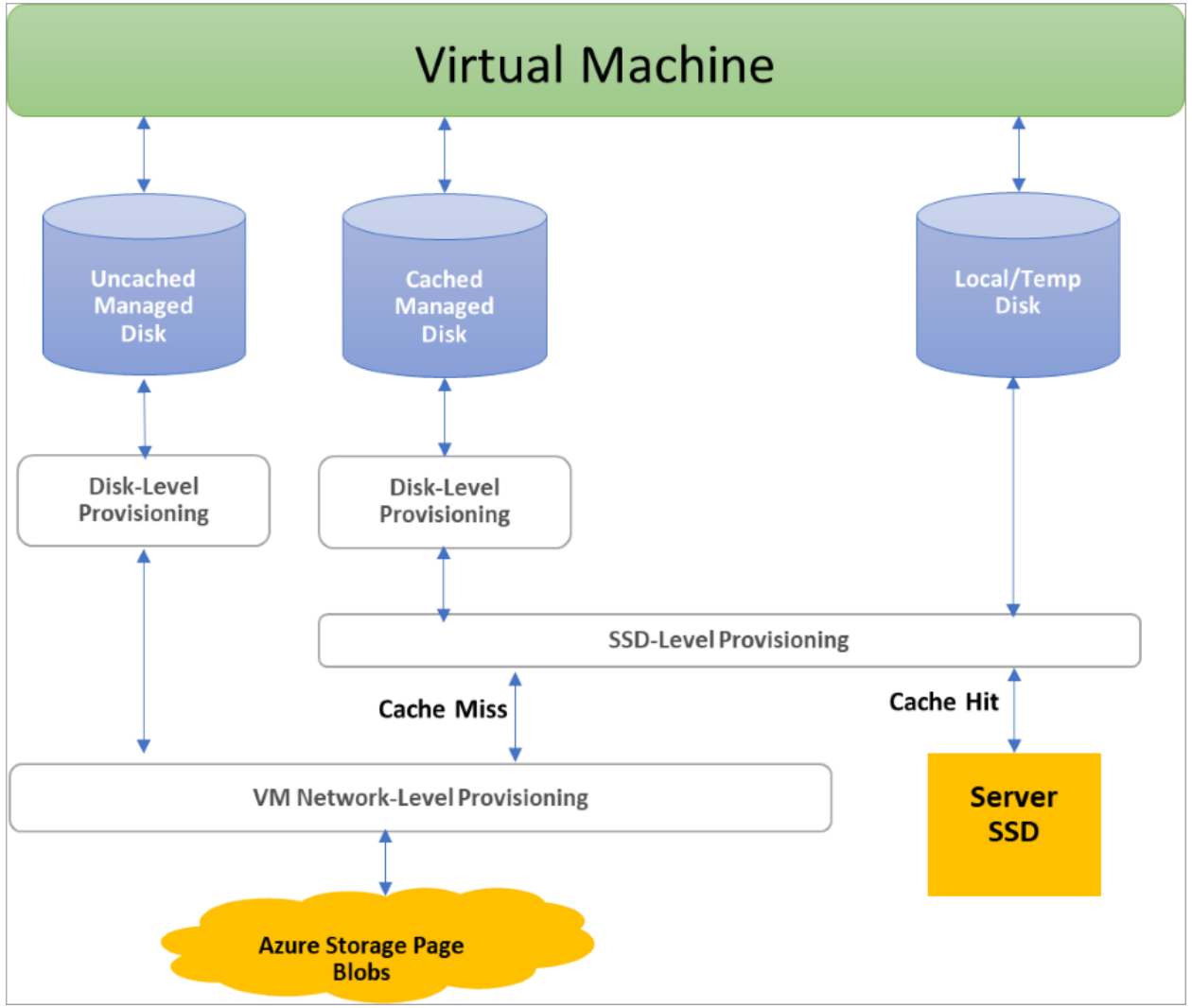
Virtual Networks (vNets)

- BYON – Bring Your Own Network.
- All subnets use random private IP ranges.
- Every subnet has a load balancer.
- vNet Peering is essential for cross-subnets.
- NSG's are Network Security Groups (ACLs).
- You will want to enable Network Watchers.
- As simple or complex as you choose.

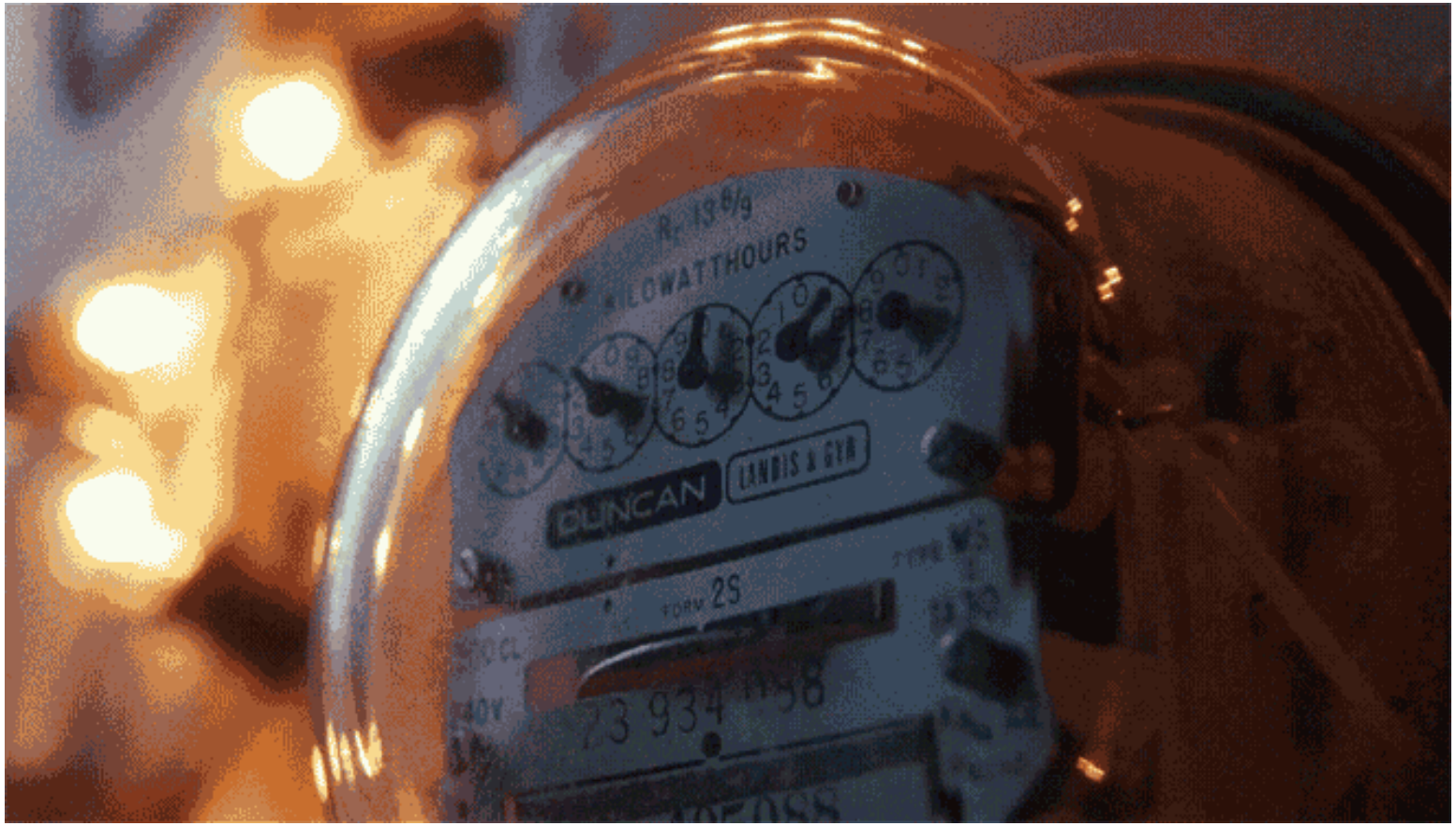


Storage Disks





Consumption



VM Sizing

Multi-Session instances

Machine type	Sessions	Virtual CPU	Memory (GB)
Light (D2s v3)	16	2	8
Medium (D2s v3)	10	2	8
Heavy (D2s v3)	4	2	8
Custom	-	2, 4, 8	4, 8, 16, 32

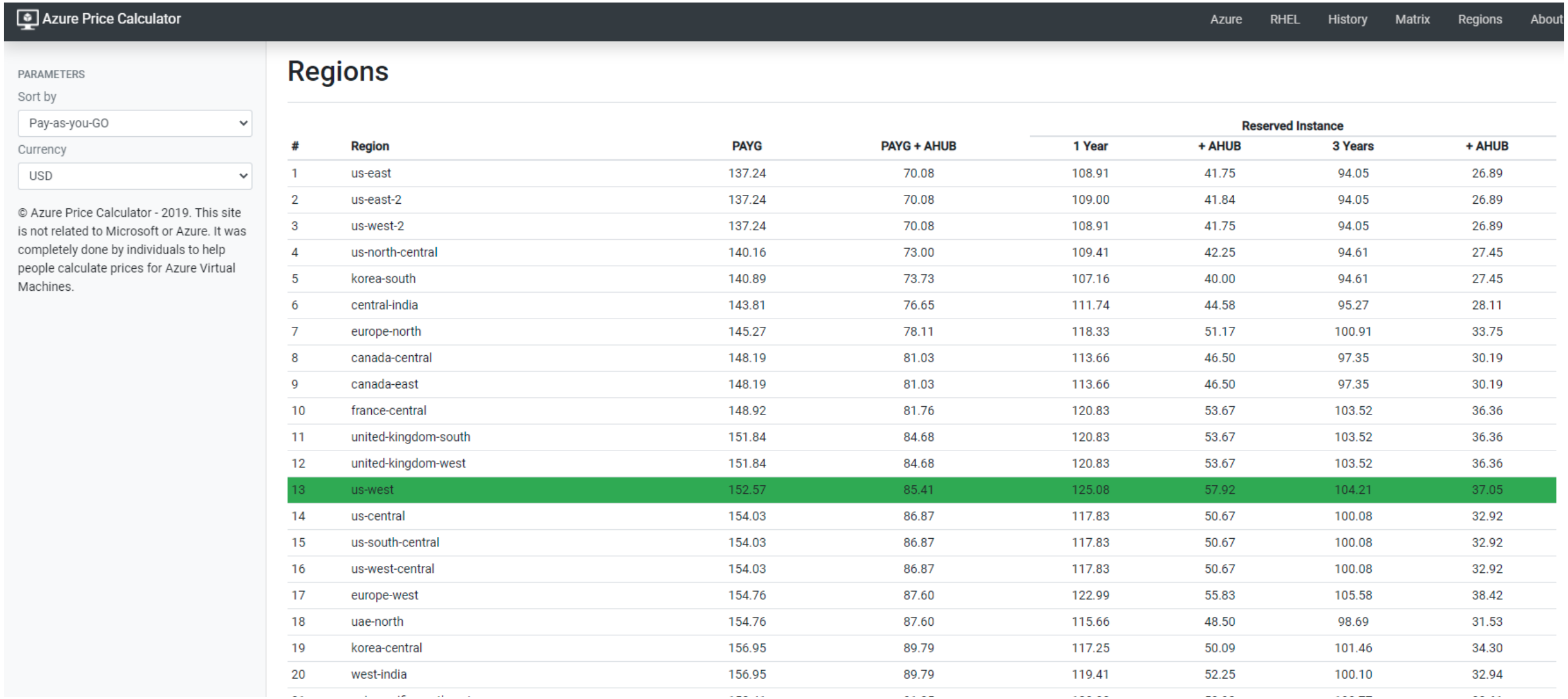
Static/Random instances

Machine type	Virtual CPU	Memory (GB)
B2s	2	4
D2s v3	2	8
D4s v3	4	16
D8s v3	8	32

How much?

Control Your Spend

azprice.info



#	Region	PAYG	PAYG + AHUB	Reserved Instance			
				1 Year	+ AHUB	3 Years	+ AHUB
1	us-east	137.24	70.08	108.91	41.75	94.05	26.89
2	us-east-2	137.24	70.08	109.00	41.84	94.05	26.89
3	us-west-2	137.24	70.08	108.91	41.75	94.05	26.89
4	us-north-central	140.16	73.00	109.41	42.25	94.61	27.45
5	korea-south	140.89	73.73	107.16	40.00	94.61	27.45
6	central-india	143.81	76.65	111.74	44.58	95.27	28.11
7	europe-north	145.27	78.11	118.33	51.17	100.91	33.75
8	canada-central	148.19	81.03	113.66	46.50	97.35	30.19
9	canada-east	148.19	81.03	113.66	46.50	97.35	30.19
10	france-central	148.92	81.76	120.83	53.67	103.52	36.36
11	united-kingdom-south	151.84	84.68	120.83	53.67	103.52	36.36
12	united-kingdom-west	151.84	84.68	120.83	53.67	103.52	36.36
13	us-west	152.57	85.41	125.08	57.92	104.21	37.05
14	us-central	154.03	86.87	117.83	50.67	100.08	32.92
15	us-south-central	154.03	86.87	117.83	50.67	100.08	32.92
16	us-west-central	154.03	86.87	117.83	50.67	100.08	32.92
17	europe-west	154.76	87.60	122.99	55.83	105.58	38.42
18	uae-north	154.76	87.60	115.66	48.50	98.69	31.53
19	korea-central	156.95	89.79	117.25	50.09	101.46	34.30
20	west-india	156.95	89.79	119.41	52.25	100.10	32.94

Be Aware of your Limits

https://docs.microsoft.com/en-us/azure/azure-subscription-service-limits

Resource	Default Limit	Max Limit
Cores per sub	20	10,000
VMs per sub (RM)	2500* per region	10,000 per region
VM total cores (RM)	20* per region	10,000 per region
VM per series	20* per region	10,000 per region
Resource Groups per sub	980	980*
RM API Reads	15000 per hour	15000 per hour
RM API Writes	1200 per hour	1200 per hour
RM API Request Size	4194304 bytes	4194304 bytes

Open Source – Websites - Toolsets - Frameworks

- https://www.azurespeed.com - Azure Latency, CDN, Storage, and Info site
- https://azurespeedtest.azurewebsites.net - Latency measurements to Blob Storage
- https://cloudharmony.com - Most things cloud and cloud testing
- https://bgp.he.net/AS8075#_graph4 – Blame the network ;-)

- Azure API's - Graph
- PowerShell, CLI, & CloudShell
- Windows Admin Center

- Grafana, Elastic Stack, Prometheus, Graphite, Telegraf, LogStash, Kibana, etc…
- Integrate with Zabbix, Nagios, Cacti, Icinga, OpenNMS, etc…

Open Source – Websites - Toolsets - Frameworks

- https://portal.azure.com/App/Download – Desktop app
- https://preview.portal.azure.com - Azure previews
- https://shell.azure.com – Cloud Shell
- https://azurecharts.com – Azure Charts
- https://resources.azure.com – Azure Resource Explorer
- https://dataexplorer.azure.com – Data Explorer
- https://azureservices.io – Table of Services
- https://azure.microsoft.com/en-us/pricing/calculator - Official cost calculator
- https://azprice.info – Non-Official cost calculator
- https://thecloudcalculator.com – More calculators
- https://build5nines.com/az-kung-fu-vm - Build5Nines Azure Admin VM & tools
- https://azure.microsoft.com/en-us/features/storage-explorer - Storage explorer desktop app

Citrix & Azure

- https://costcalculator.apps.cloud.com/advanced – Official Citrix calculator
- https://costcalculator.azurewebsites.net/estimate - Unofficial calculator
- https://status.cloud.com – Citrix Cloud status
- https://www.algiz-technology.com/citrix-cloud-vs-windows-virtual-desktop - Great comparison

Demo

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