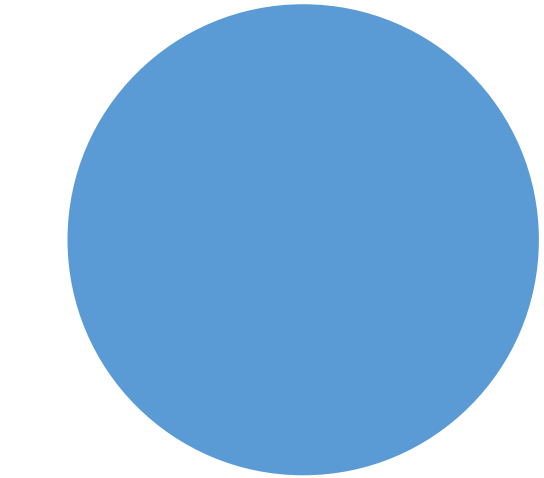
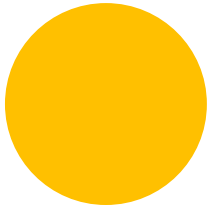

Azure Champ

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Microsoft

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- http://www.youtube.com/c/onuryuksektepeli
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MVP
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Most Valuable
Professional

Azure Resource Groups

Azure Champ

Connect to Azure

Azure Portal

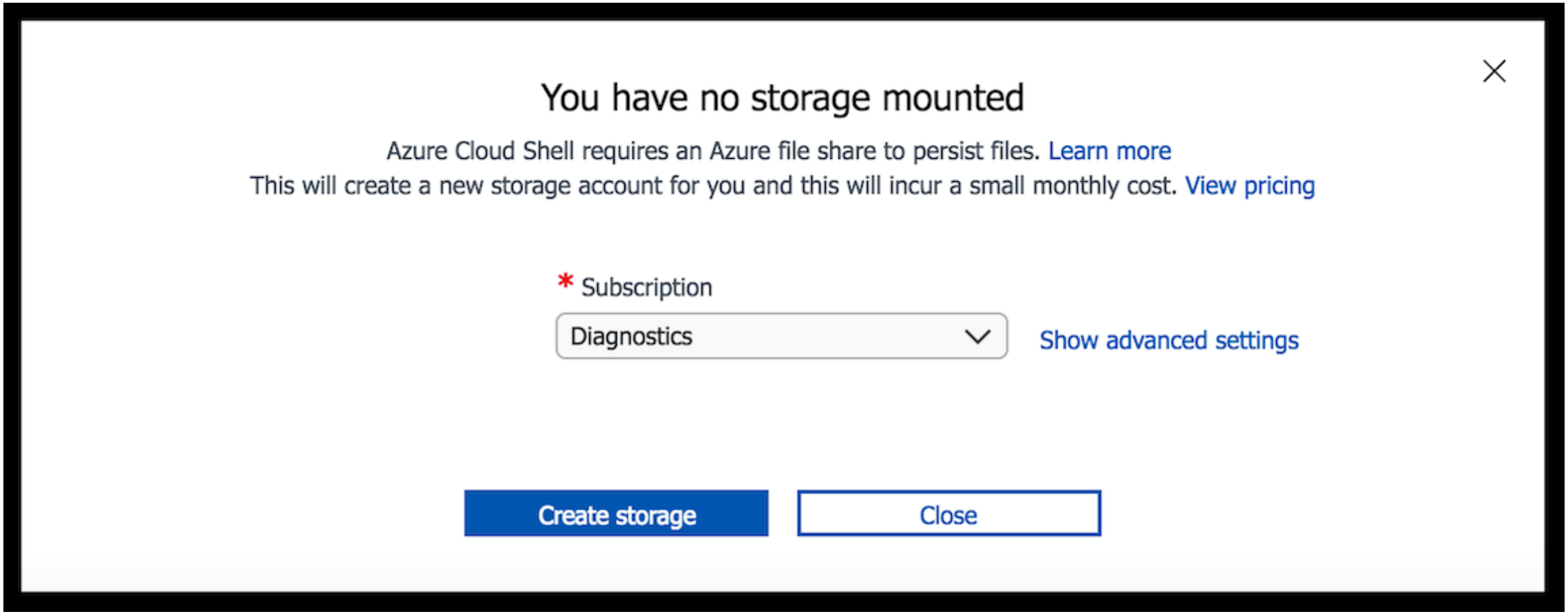
Azure Cloud Shell

Azure Powershell

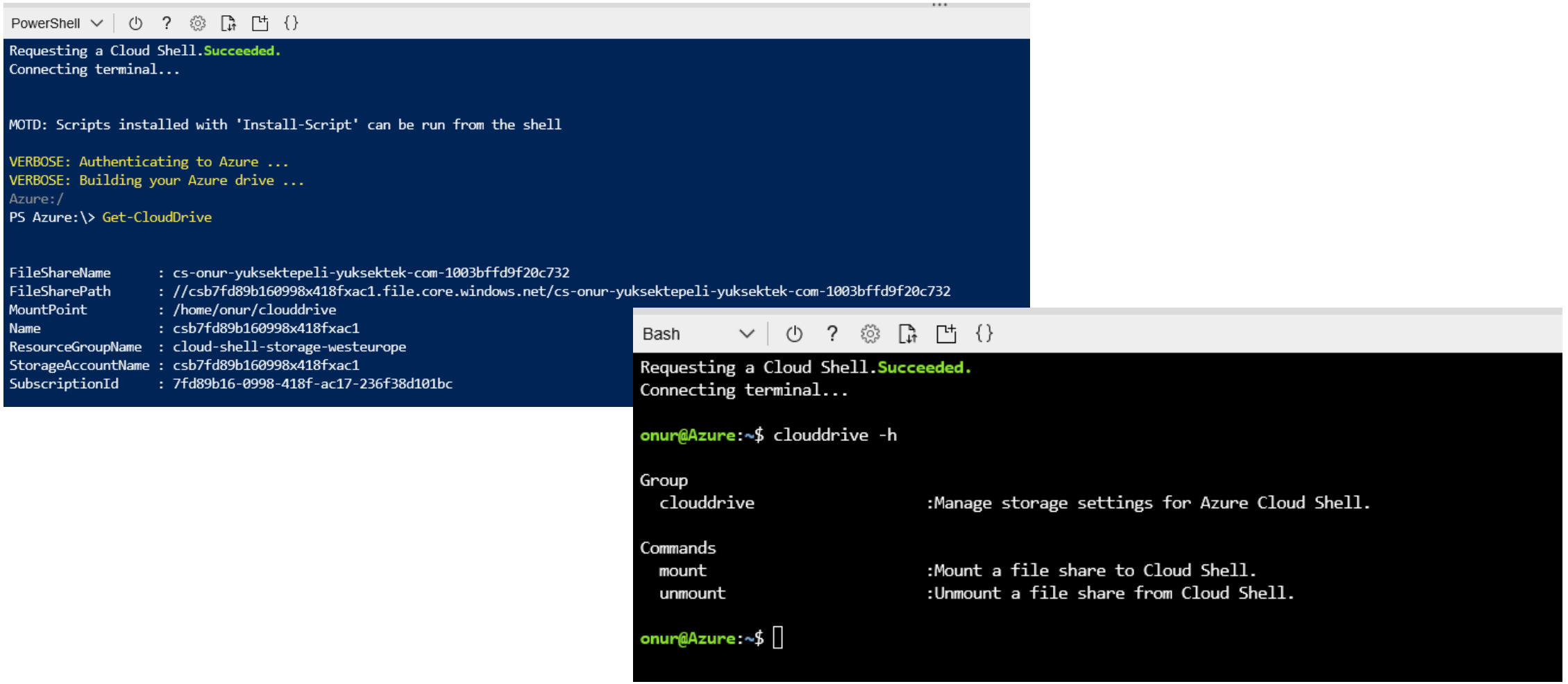
Azure CLI v2.0

Azure SDKs

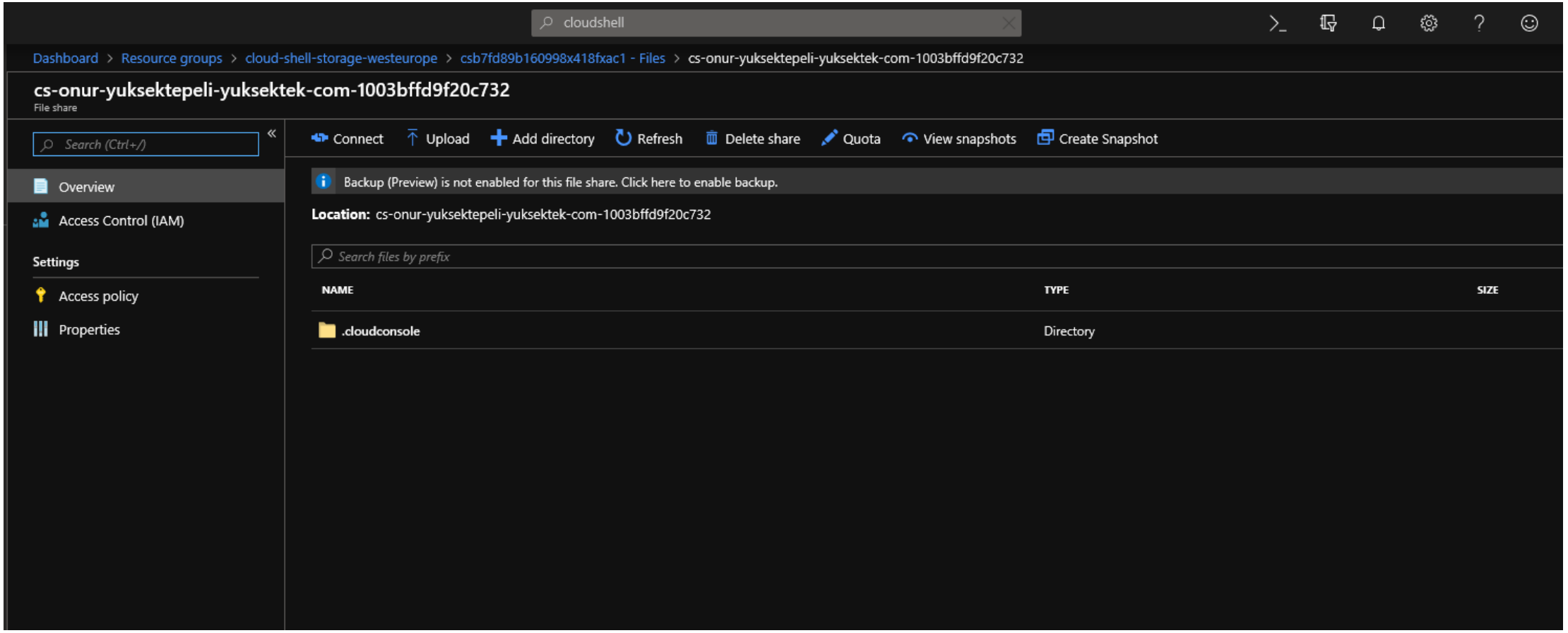
Azure Cloud Shell



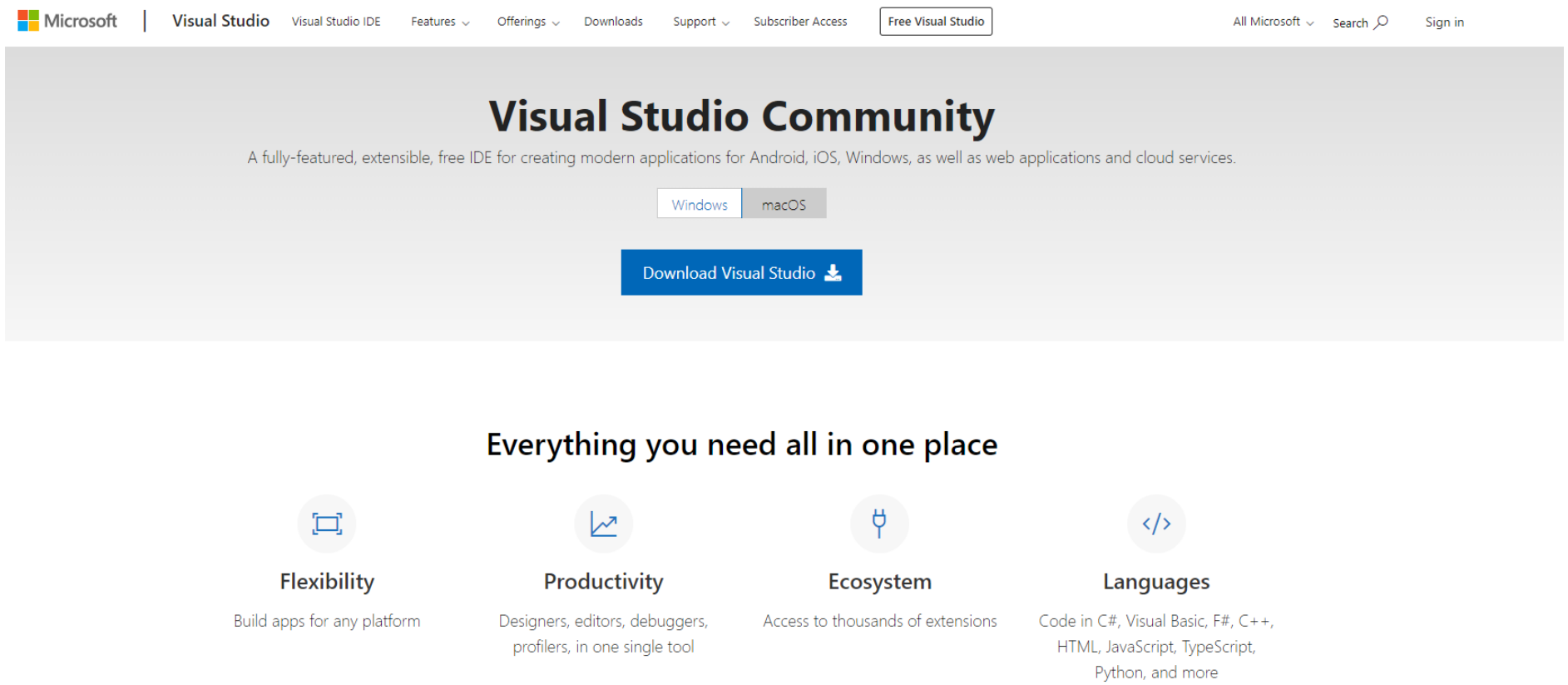
Azure Cloud Shell



Azure Cloud Drive

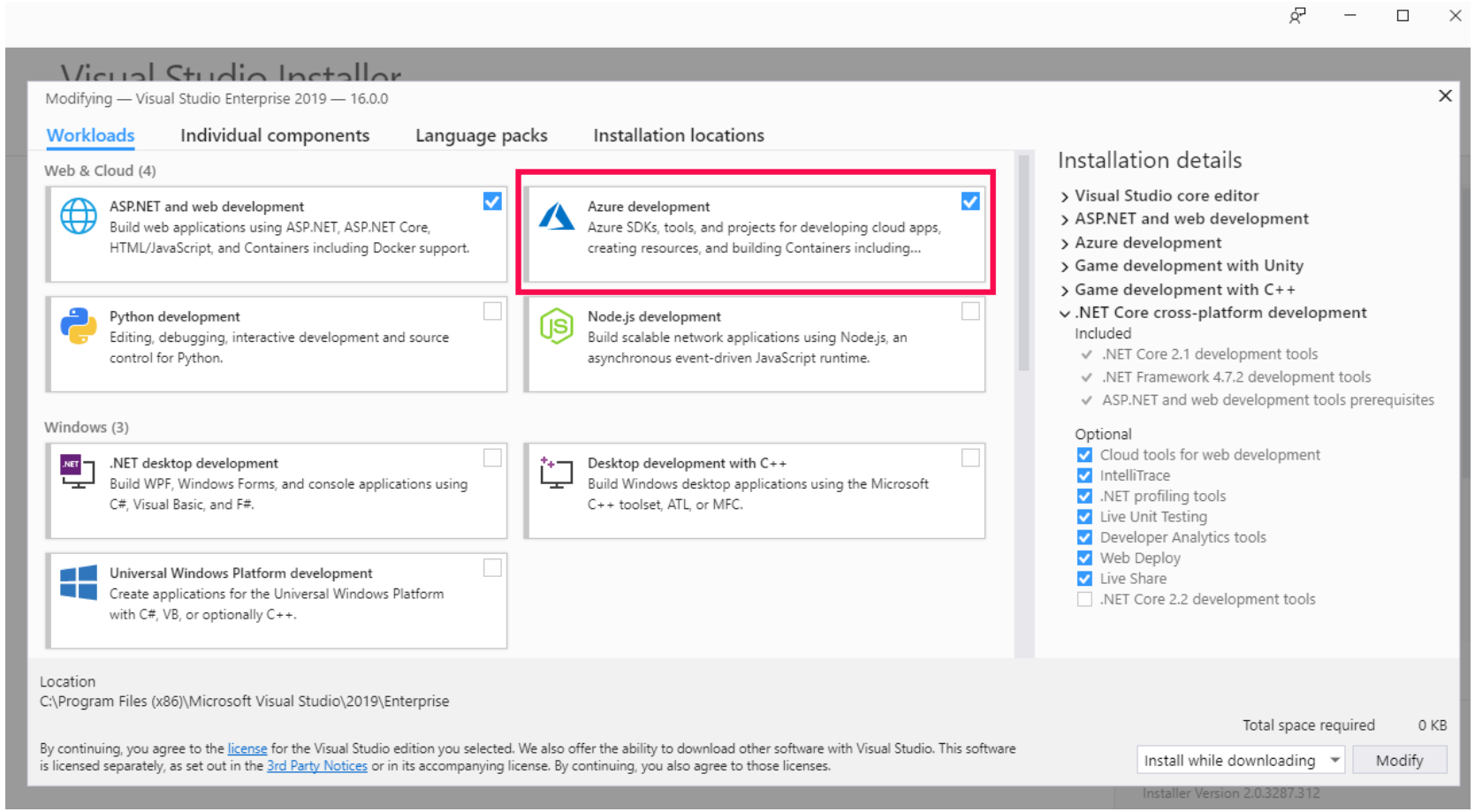


Visual Studio



https://visualstudio.microsoft.com/vs/community/

Azure Development



Azure Resource Groups

- Resources in a resource group should share the same lifecycle
- Each resource can only exist in one resource group
- Resources can be added or removed to a resource group at any time
- Resources can be moved from one resources group to another
- Resource groups can contain resources that reside in different regions
- Resources can interact with resources in other resources groups

Resource Group Management

- Tags
- Locks
- Access Control (IAM)
- Policies

Sample Resource Group

- Ms-net-rg
- Purpose: Isolate the Virtual networks
- Need: Prevent unwanted changes to any of the network resources
- Admin: It will deploy and maintain RG
- Notes: Resources in other RGs will use the resources int this group
- Dept: IT
- Owner: Onur YUKSEKTEPELI

Demo

- Creating a Resource

Azure Resource Tags

- Logically organize resources. Each tag has a name and a value. Allows related resources from different resource groups to be identified. Organize by billing and management.

TAG Rules

- Tags are NOT inherited
- Names can't contain these characters: <,>, %, &, \, ?, /
- Tag name is limited to 512 characters
- Tag value is limited to 256 characters

Demo

- Create Tag

Resource Group Locks

- Prevent accidental deletion or changes to resources in resource groups. Consists of two locks:
  - CanNotDelete
  - ReadOnly

Demo

- Create Resource Locks

Access Control (IAM)

- A system that provides fine-grained access Management of resources in Azure. Grant only the amount of Access to users needed to perform their jobs

Demo

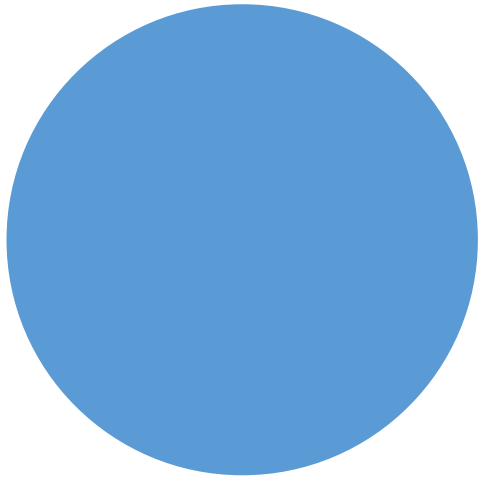
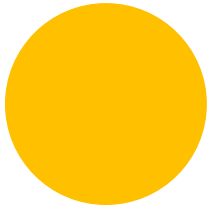
- Access Control (IAM)

Azure Policy

- Allows you to manage and prevent IT issues with policy definitions that enforce rules and effects for your resources. Policies allow you to keep compliant with corporate standards and SLAs.

Demo

- Azure Policy

Azure Compute

Azure Champ

Azure Compute

- Azure Compute Unit

The concept of the Azure Compute Unit (ACU) provides a way of comparing compute (CPU) performance across Azure SKUs. This will help you easily identify which SKU is most likely to satisfy your performance needs. ACU is currently standardized on a Small (Standard_A1) VM being 100 and all other SKUs then represent approximately how much faster that SKU can run a standard benchmark.

Azure Compute Unit(ACU)

SKU Family	ACU \ vCPU	vCPU: Core
A0	50	1:1
A1 - A4	100	1:1
A5 - A7	100	1:1
A1_v2 - A8_v2	100	1:1
A2m_v2 - A8m_v2	100	1:1
A8 - A11	225*	1:1
D1 - D14	160 - 250	1:1
D1_v2 - D15_v2	210 - 250*	1:1
DS1 - DS14	160 - 250	1:1
DS1_v2 - DS15_v2	210 - 250*	1:1
D_v3	160 - 190*	2:1***
Ds_v3	160 - 190*	2:1***
E_v3	160 - 190*	2:1***
Es_v3	160 - 190*	2:1***
F2s_v2 - F72s_v2	195 - 210*	2:1***
F1 - F16	210 - 250*	1:1
F1s - F16s	210 - 250*	1:1
G1 - G5	180 - 240*	1:1
GS1 - GS5	180 - 240*	1:1
H	290 - 300*	1:1

Azure Virtual Machines

	General Purpose	Compute Optimized	Memory Optimized	Storage Optimized	GPU	High Performance Compute
Type	DC, Av2, Dv2, Dv3, B, Dsv3	Fsv2, F	M, Dv2, G, DSv2, GS, Ev3	Ls	NC, NCv2, ND, BV, NVv2	H
Description	Balanced CPU and memory	High ratio of compute to memory	High ratio of memory to compute	High disk throughput and IO	Specialized with single or multiple NVIDIA GPUs	High memory and compute power – fastest and most powerful
Uses	Testing and dev, small-med databases, low traffic web servers	Medium traffic web servers, network appliances, batch processing, app servers	Relational database services, analytics, and larger caches	Big Data, SQL, NoSQL databases	Compute intensive, graphics-intensive, and visualization workloads	Batch processing, analytics, molecular modeling, and fluid dynamics, low latency RDMA networking

Standard vs. Premium Storage Disks

Standard Disks	Premium Disks
Backed by cost-effective HDDs	Backed by high-speed SSDs
Stored in Azure storage account	IOPS values are predictable, expected performance levels
Standard SSD (Preview) available for managed disks (dev/test/entry level production applications)	Pre-pay for all storage used (fixed disk sizes P10, 128 GB, 500 IOPs, 50 MB/sec
Standard storage provides maximum IOPS values for each VHD	

Managed vs. Unmanaged Disks

Unmanaged Disks	Managed Disks
Original method to store VM VHDs	Azure manages the disks, so you don't have to worry about storage accountlevel IOPS restrictions
VHDs stored as page blobs in an Azure storage account	Pre-pay for disk size (no need for SA) S10, 128 GB, 500 IOPS, 60 MB/sec
Maximum 256 TB of storage per VM	Supports Standard and Premium SSD and Standard HDD
You need to manage storage account availability	
20,000 IOPS limit across all VM disks in a standard storage account	

Ultra SSD – the next generation of Azure Disks technology

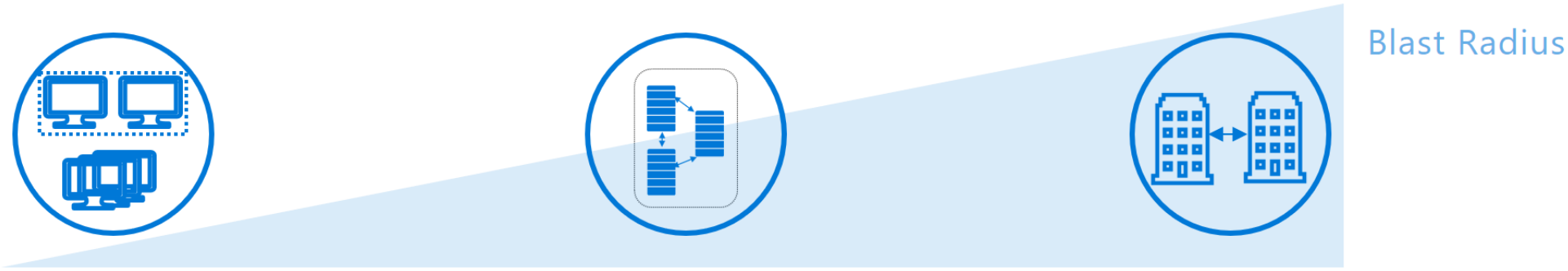
Ultra SSD
supported VM types will be limited
Ultra SSD Disks come in several fixed sizes from 4 GiB up to 64 TiB and feature a flexible performance configuration model that allows you to independently configure IOPS and throughput.
Ultra SSDs support IOPS limits of 300 IOPS/GiB, up to a maximum of 160K IOPS per disk. To achieve the IOPS that you provisioned, ensure that the selected Disk IOPS is less than the VM IOPS.
With Ultra SSD Disks, the throughput limit of a single disk is 256 KiB/s for each provisioned IOPS, up to a maximum of 2000 MBps per disk (where MBps = 10^6 Bytes per second).

Azure Ultra SSD

Ultra SSD Managed Disk Offerings

Disk size (GiB)	4	8	16	32	64	128	256	512	1,024-65,536 (in increments of 1 TiB)
IOPS range	100-1,200	100-2,400	100-4,800	100-9,600	100-19,200	100-38,400	100-76,800	100-153,600	100-160,000
Throughput Cap (MBps)	300	600	1,200	2,000	2,000	2,000	2,000	2,000	2,000

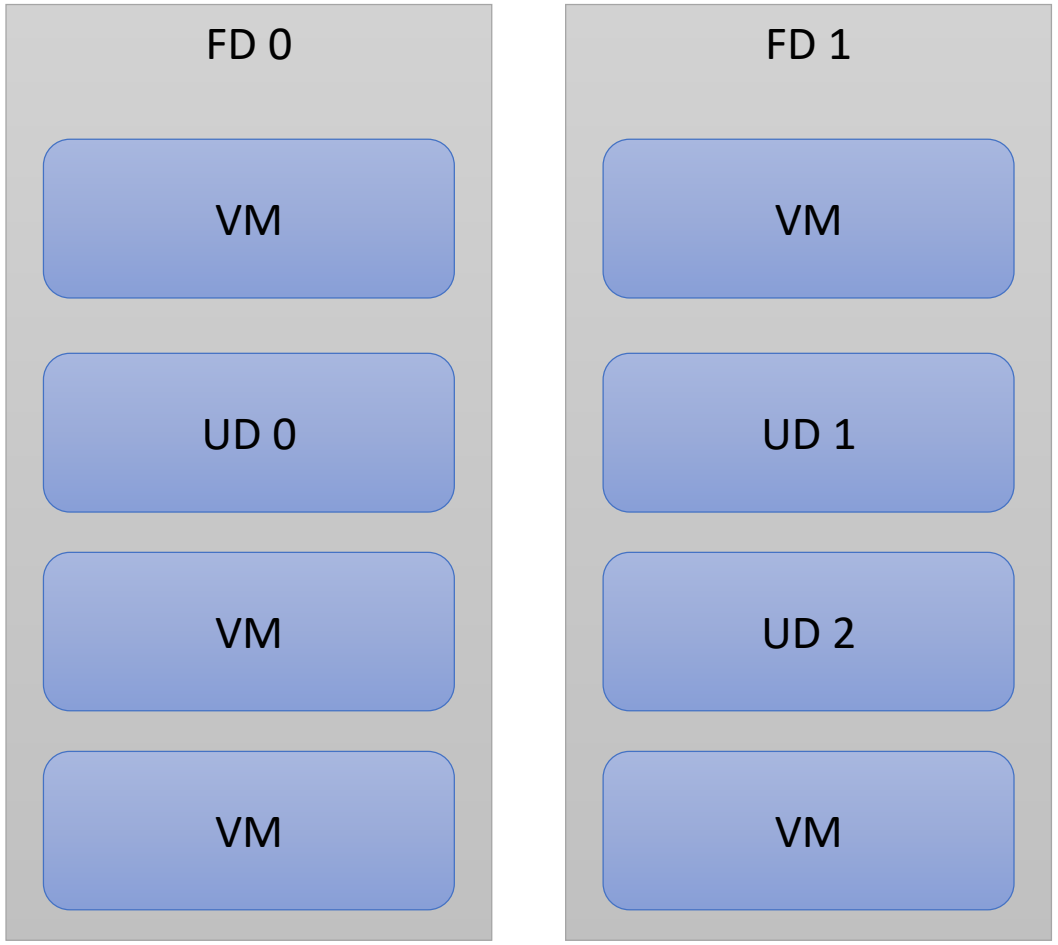
Planning High Availability



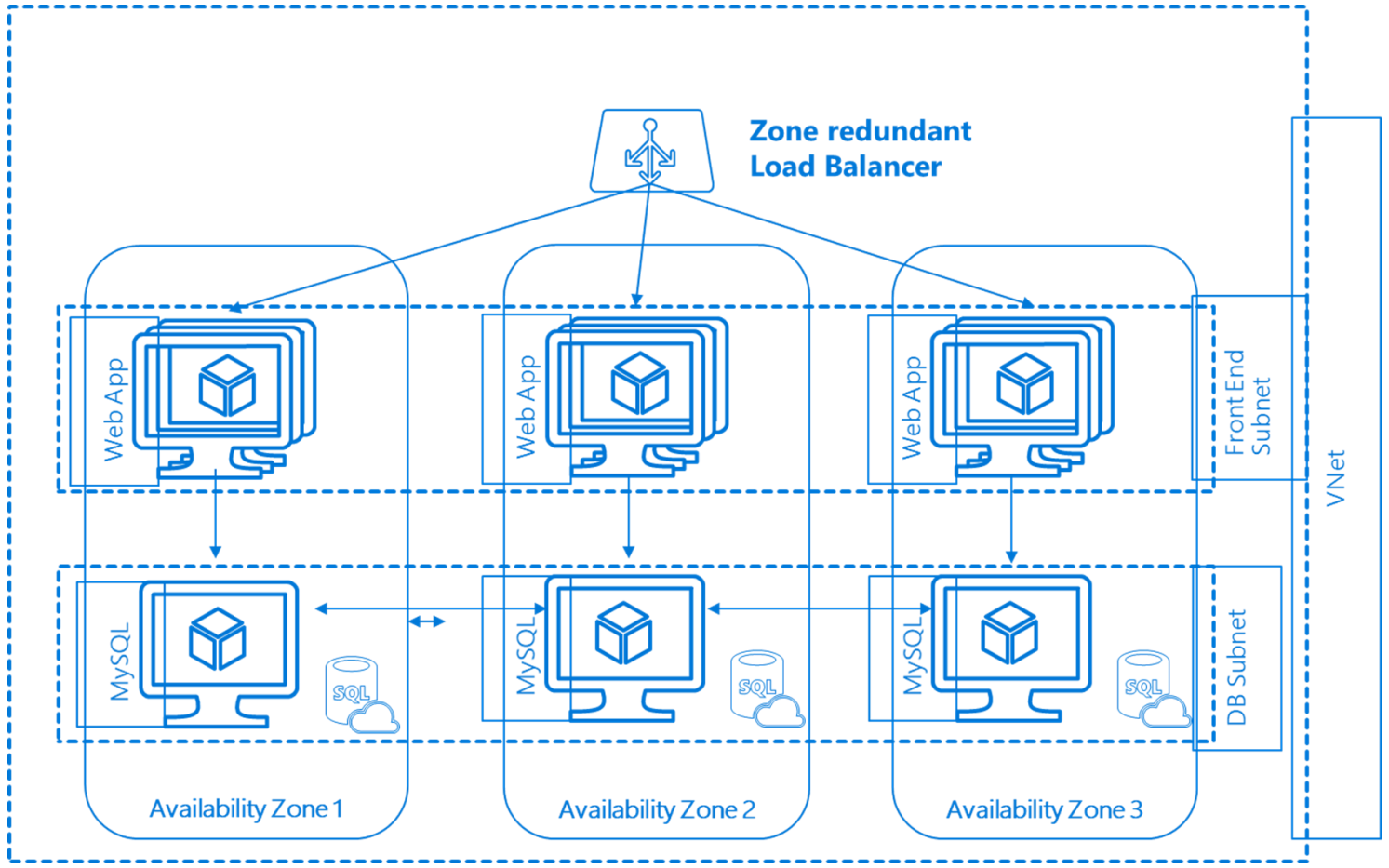
Feature	Capability / Provide
Availability Sets	High-availability **protection from hardware, network, and power failures in a DC**
Availability Zones	High-availability **protection** against the **loss** of **entire DC(s)**
Region pairs	Disaster Recovery that **protects from the loss of an entire region**

Availability Sets

- %99.95 Availability SLA with Availability set
- Must be configured at VM Deployment
- Otherwise %99.9 single instance SLA with Premium storage

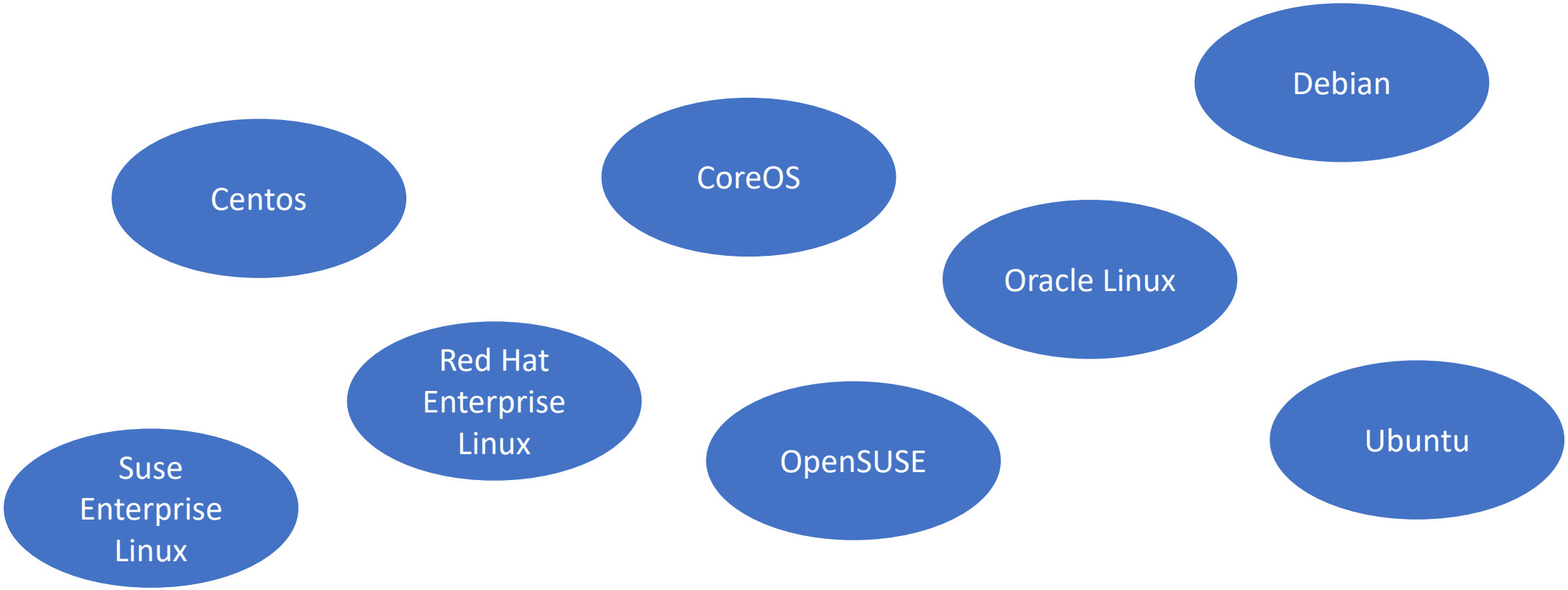


Availability Zone



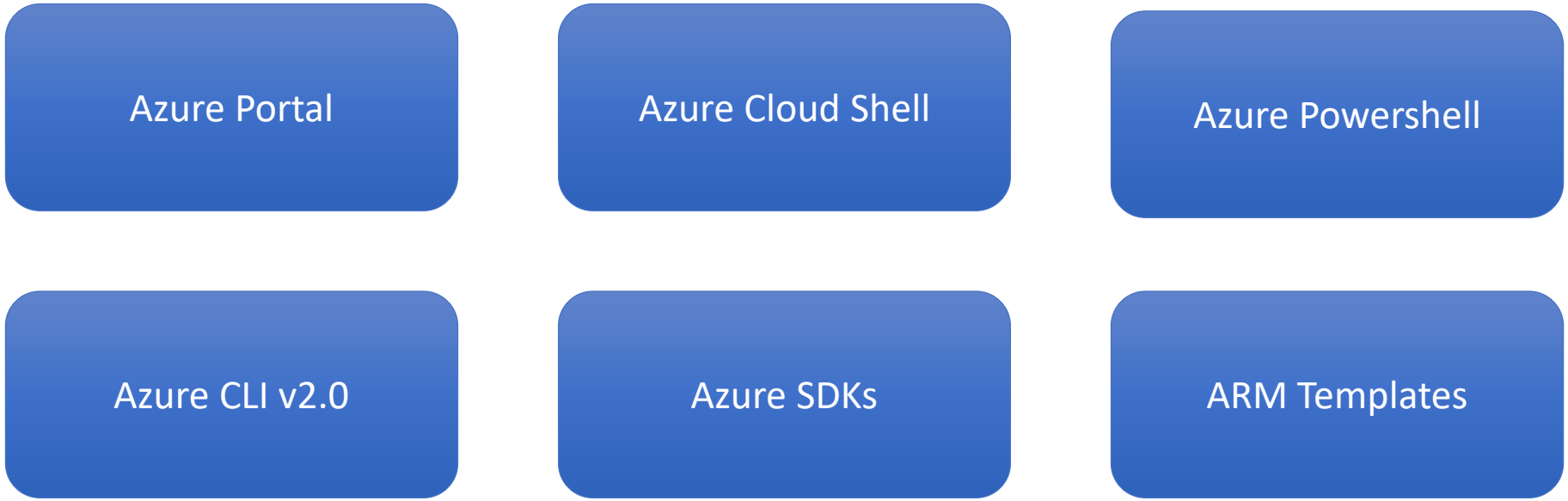
http://aka.ms/azoverview

Supported Linux Distributions in Azure



https://docs.microsoft.com/en-us/azure/virtual-machines/linux/endorsed-distros

Azure Deployment Tools



Demo

- Deploy a Linux VM in Azure
- Deploy a Windows VM in Azure with Visual Studio

Demo

Connect Windows VM via Serial

Azure VM Disk Types

OS Disk	Data Disk	Temporary Disk
Generation 1 .VHD	# dependent on VM instance size	D: or /dev/sdb1
Registered as SATA drive	Registered as SCSI disk	Bound to the hardware host
Max capacity 2 TB	Max capacity 4 TB	Do not store permanent data!

https://docs.microsoft.com/en-us/azure/virtual-machines/linux/disks-types

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/disks-types

Demo

- Add Data Disk to VM

Demo

- Deploy VM from Existing Managed Disk