

# AZURE STORAGE



**DEEP DIVE**

# Azure Storage Types

**Blob storage:** Unstructured file data

**Table storage:** NoSQL semi-structured data

**Queue storage:** Pub/sub messaging data

**File storage:** SMB file shares

# Binary Large Object (Blob)

A collection of binary data stored as a single entity in a storage system. Blobs are typically images, audio or other multimedia objects, or binary executable code. VM VHDs are stored as page blobs.

# Replication Options

Locally  
Redundant  
Storage  
(LRS)

3 copies within single data center

Premium storage

Zone-  
Redundant  
Storage  
(ZRS)

3 copies across 2-3 data centers

Block blobs only; available only during SA creation

Geo-  
Redundant  
Storage  
(GRS)

3 copies in primary region

3 copies in secondary region

Read-Access  
Geo-  
Redundant  
Storage (RA-  
GRS)

RO access to secondary region data

# OS and Data Disks

# Azure VM Disk Types

## OS Disks

Fixed disk VHD files stored as page blobs

Generation 1

Registered as SATA

Maximum size 1023 GB (1 TB)

## Data Disks

D: is a temporary disk that holds pagefile/swapfile

Attached VHD

Registered as SCSI

Maximum size 1023 GB

# Azure Storage Account Types

## Standard

HDD

Default for some instance sizes; others use SSD

IOPS values represent maximum values

Can use any redundancy option  
(Premium is LRS only)

## Premium

SSD

IOPS values represent expected performance levels

Great for I/O intensive workloads like Dynamics, Exchange Server, SQL Server, SharePoint Server

Not available in all Azure regions

Need a DS-, DSv2-, GS-, or FS-series VM

Available in 3 sizes (128 GB, 512 GB, or 1024 GB)

# Use Cases and Blob Types



# Azure Storage Account Use Cases

**VM disks**

**Unstructured data**

# VM Storage



## Traditional storage account

20K IOPS limit/storage account

200 storage accounts/subscription

VHDs getting “mixed up” with block blobs

Permissions bleed at the container level

HDD storage: IOPS represent maximums

SSD storage: IOPS represent guaranteed values

## Managed Disks

Azure handles VHD storage for you

10K VM disks/subscription

Increases VMSS scalability (1,000 nodes)

RBAC and SAS URI access to VHDs

Managed snapshots and images

Create a managed OS disk from a traditional VHD

`ConvertTo-AzureRMVMMManagedDisk`

# Diagnostics Data Stored in Blob Containers

## wad-iis-logfiles

- IIS logs

## Wad-iis-failedreqlogfiles

- Failed request tracing

# Blob Types



## Page

Optimized for random  
writes



## Block

Optimized for object  
streaming  
Unstructured data



## Append

Optimized for append  
operations  
Logging