Azure Storage

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Session Agenda

- What is Storage?
- Azure Storage Account Types
- Azure Storage Types
- Storage Tiers
- Endpoints & Security
- Costing Model & SLA
- Demo – Creating a Storage Account

What is Azure Storage?

- Traditional Storage Systems
  - Local HDD
  - NAS (Network Area Storage)
  - SAN (Storage Area Network)
  - Tapes (Magnetic Strip Devices)
- Azure Storage Serves all
- Part of Azure Data Services
- Azure Storage is Highly Available, Durable and Scalable
- Azure Storage is used for files, disks, websites etc.

Azure Storage Accounts

- Storage Account is mandatory to use Azure Storage
- Multiple Storage Accounts can be created
- Various Replication Options for Resilience
- Two Types of Storage Accounts
  - General-purpose Storage Accounts
  - Blob Storage Accounts
- To Create a Azure Storage Account
  - URL - Endpoint
  - Location - Region
  - Account Type
  - Replication Option

Storage Account Replication Options

- Locally Redundant (Standard_LRS)
  - 3 Data copies in a single facility in a Region
- Zone Redundant (Standard_ZRS)
  - 3 Data copies in two or more facilities in a Region
  - Only for Block Blobs
- Geo-Redundant (Standard_GRS)
  - LRS + 3 Data copies replicated to Paired Region (Most Resilient)
- Read Access Geo-Redundant (Standard_RAGRS)
  - GRS + Read Access to the data in the Secondary Location

General Purpose Storage Accounts

- Supports FOUR Storage Types
  - BLOB Storage (Binary Large Objects)
    - Unstructured data such as Documents, Videos, Pictures, VHDs (VM Disks)
    - Block Blobs and Page Blobs
  - Queue Storage
    - Asynchronous communication between application components
    - Messaging store for workflow processing
  - Table Storage
    - For structured No-Sql based data
  - File Storage
    - Shared storage for apps using the SMB protocol

General Purpose Storage Accounts

- → 500 TB Capacity Limit of the Storage Account
- → TWO Types of Performance Tiers
  - Standard Storage Tier
    - Uses Standard Disk Drives
    - Up to 20,000 IOPS Per Storage Account (500 IOPS / Disk)
  - Premium Storage Tier
    - Uses Solid State Drives (SSDs)
    - Up to 80,000 IOPS Per Storage Account (5000 IOPS / Disk)
    - Local Redundant Only

Blob Storage Accounts

- Specialized Storage account to store unstructured data as blobs
- Blob Storage Account Supports only Block Blobs
- Supports only Standard Storage Tier
- Supports TWO types of Access Tiers
  - HOT Access Tier
    - For more frequently accessed Blobs
    - Store data at lower access cost
  - COOL Access Tier
    - For less frequently accessed Blobs
    - Store data at lower data storage cost

Azure Storage End Points

- Blob - https://accountname.blob.core.windows.net
- Table - https://accountname.table.core.windows.net
- Queue - https://accountname.queue.core.windows.net
- File - https://accountname.file.core.windows.net

Azure Storage Security

- Protected by Access Keys
- Anonymous User Permissions to Containers and Blobs
  - Full Public Read Access
  - Public Read Access for Blobs only
  - No Public Read Access (Private)
- Role Based Access Control
- Delegated Access to Objects – Shared Access Signature
- Encryption in Transit – Https, SMB 3.0, Client Side Encryption
- Encryption at Rest – Storage Service, Disk, Client Side Encryption

Costing Model and SLA

- Storage Accounts price is based on following Factors

  Region, Storage Type, Storage Account Type, Performance Tier, Storage Transactions
- Storage SLAs are based on Read/Write Requests
- Read Success rate on LRS, ZRS and GRS is 99.9%
- Read Success rate on RAGRS accounts is 99.99%
- Write Success rate on LRS, ZRS, GRS and RAGRS is 99.9%
- Number of storage accounts per subscription - 200 Accounts
- Max Storage Per Storage Account – 500 TB

- Demo -
Create a Storage Account

Questions?

Thank you!

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