**Implement and manage storage**

**Secure storage (**Manage storage account)

Storage accounts supports 5 different types of data objects

Blob – unstructured data, (videos, pictures) – applications needing access to data anywhere

(this is storage in Container)

File – file access to applications using SMB protocol (server message block)

Queue – asynchronous message queueing for apps deployed in azure

Table – structured noSql data, for key attribute store without schema

Disk – virtual disk used by VM’s

Storage account – entity that holds and manages the data objects

Unique namespace to storage resources

Secure and scalable

http://storageaccount001.blob.core.windows.net/containername/pic.jpg

Types of storage account:

General purpose v2 – all types of data objects, recommended, only type support data lake gen2

General purpose v1 – Legacy

BlockblobStorage – premium performance accounts for block blobs and append blobs

File storage accounts – recommended for Files

BlobStorage – legacy blob only account (use v2 instead)

Performance tiers:  
 Standard – V2, V1, Blob storage

Recommended for backup, DR and media

Premium – available only for = BlockBlob storage, FileStorage, GPv1 and GPv2 (unmanaged VHD only)

Recommended for Interactive, analytics and AI

Need to understand workload performance needs and cost on determining what tier to select

Cannot convert, need to migrate files to new storage type (no conversion after deployment)

Access Tiers:  
 Hot – Highest storage cost, lower access cost

Cold – Lower storage cost, higher access cost (30 days min)

Archive – Lowest storage cost, highest access cost (180 days min)

with early deletion cost

Replication options:  
 Local-redundant storage (LRS) – single availability zone – will not survive physical dc/zone outage

Zone-redundant storage (ZRS) – 3 sync copies on 3 zones – safe for physical dc/zone outage

Geo-Redundant storage (GRS) – LRS on primary + LRS (read only) for 2nd region

Geo-Zone-Redundant storage (GZRS) – ZRS on primary + LRS on 2nd (read only)

GRS and GZRS 2nd can only be access when failover occurs

If you want to read access even if no failover, use the below

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

Read-acccess Geo-Zone-Redundant storage (RA-GZRS)

Ask yourself

What is Azure DC fails?  
 What is Azure region fails?

Do you need Read access to redundant data in another azure region?

Create storage account:  
 Go to storage account > Choose performance > Choose replication > choose blob access tier > choose connectivity endpoint (public all net, public selected net, private) > choose data protection options (soft delete, etc) > choose security options (TLS, datalake storage gen2, > tags > create

Configuring storage account:

Ex. V1 to upgrade  
 Go to the storage account > Configuration > upgrade > Confirm upgrade > Change replication (other settings)

Storage account > Encryption (Microsoft manage keys or Customer manage keys) >

If customer managed > Encryption key, choose Enter KEY URI or key vault

**Manage storage**

**Configure azure files and azure Blob Storage**