2- Types of blobs

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Types of Blobs in azure

azure provides 3 types of blob storages.

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- You specify the blob type when you create the blob.
- Once the blob type is created, Its type cannot be changed.

Block Blobs

- optimized for uploading large amounts of data efficiently.
- ! can store up to *4.75 TB* of data
- Large objects that doesn't use random read and write operations. e. g. *Pictures* source
- Block blobs are composed of blocks, identified by a block ID.
- ! Block Id can include 50,000 blocks.
- each block vary in size. source
- These blocks that can be *uploaded in parallel*
- you can upload multiple blocks in parallel to decrease upload time.
- ! each block can be a max of *100MB* in size.
- Block blobs are optimized for read and write operations.

- If you write a block for a blob that does not exist, a new block blob is created, with a length of zero bytes.
- Each block can include an *MD5 hash* to verify the transfer,
- You can track upload progress and re-send blocks as needed using that MD5 hash.

Create or modify a block blob

- write a set of blocks via the *Put Block* operation.
- commit the blocks to a blob with the *Put Block List* operation.
- source

Committing the blobs.

- When you upload a block to a blob in your storage account, it is associated with the specified block blob, but it does not become part of the blob.
- until you commit a list of blocks that includes the new block's ID.
- New blocks remain in an uncommitted state until they are specifically committed or discarded.
- ! There can be a maximum of *100,000* uncommitted blocks.
- Writing a block does not update the last modified time of an existing blob.
- source
- You can also upload a new block to replace an existing uncommitted block of the same block ID.
- You have one week to commit blocks to a blob before they are discarded.

sources

source

Page Blobs

- [page blobs, source 1](What are Page Blobs? (smikar.com))
- ! Can store up to *8 TB* of data.
- designed to store and manage large, random-access files.
- when you need to read and write small sections of a file without effecting the entire file.
- Page blobs are organized as a collection of *152-byte* pages.

features of Page blobs

- features of page Blob source
  - Random read-write access
  - Snapshots
  - Incremental updates
  - Concurrency control

Advantages of Page blobs

- suitable for use cases like Virtual Hard Drives and large databases
- 8TB of data can be stored
- provides data protection by snapshot functionality
- multiple users can work on a file simultaneously without conflicts or data corruption (*concurrency control*)

Pricing

- billed based on the total size of the provisioned pages, not the actual data stored.
- even if you're only using a portion of the provisioned pages, you'll still be billed for the entire capacity.

securing page blobs

source

- AD
- RBAC
- Storage Service Encryption

Append Blobs

source

- composed of blocks and is optimized for *append operations*
- When you modify an append blob, blocks are added to the end of the blob only.
- Updating and deleting existing blocks is not supported.
- does not expose its block IDs.
- each block vary in size.. up to a maximum of *4 MiB*.
- append blob can include up to *50,000* blocks.
- max size of append blob is therefore slightly more than *195GB (4 MiB* 50,000 blocks)*

other sources

What Are Append Blobs (smikar.com)
