Microsoft Azure Fundamentals
Training Bootcamp

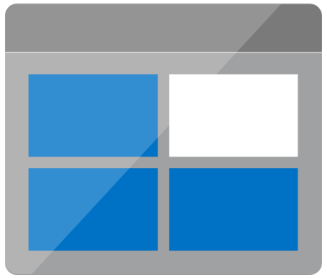
Azure Blob Storage Fundamentals 101

Azure Blobs Overview – Unstructured Data

- Azure Blob storage is Microsoft's object storage solution for the cloud, optimized to store massive amounts of unstructured data (text or binary data)

- BLOB – Binary Large Objects

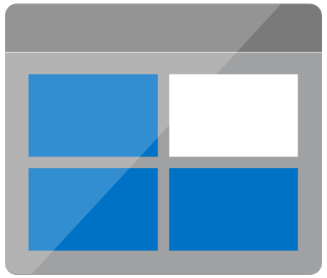
- Unstructured Data ?
  - Any type of data can be stored, no restrictions



Blob Storage

Azure Blobs Overview – Unstructured Data

- World wide reachable, only internet connection is needed; blobs accessed through HTTP/S
- Highly scalable Azure service, can support thousands of connections, massive amount of data
- Azure Blob storage supports Azure Data Lake Storage Gen2; this is Microsoft's data analytics solution for the cloud



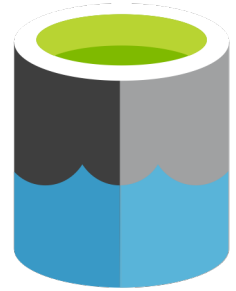
Blob Storage

Azure Data Lake Storage Gen2

- Azure service built using two existing services: Azure Storage and Azure Data Lake Storage Gen1

- Azure DLS Gen2 provides big data analytics capabilities, built on Azure Storage; stores both structured and unstructured data

- Scalable (up to exabytes of data = 1m TB), cost effective (blob storage lifecycle and access tiers)



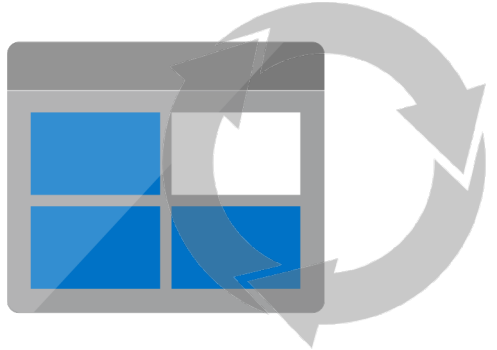
Data Lake Storage

Azure Blob Storage Lifecycle & Access Tiers

- Azure storage offers three access tiers:
  - Hot – frequently accessed data
  - Cool – infrequently accessed data (stored min. 30 days)
  - Archive – rarely accessed data (stored min. 180 days)

- Multiple access tiers available, we can build a storage lifecycle policy, which translates to cost-effective storage

- Policy : HOT → COOL → ARCHIVE

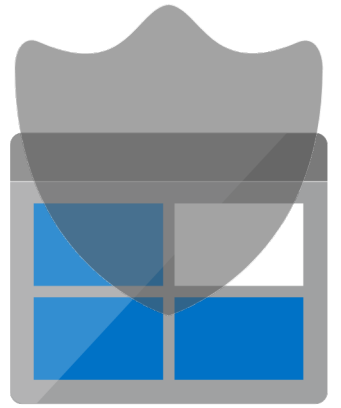


Blob Storage Lifecycle

Azure Storage Encryption

- Azure Storage automatically encrypts your data in Azure Cloud

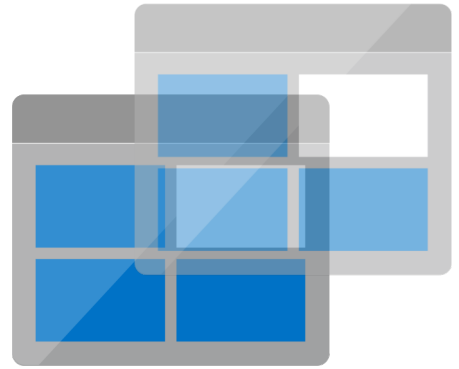
- Encryption is done using:
  - Microsoft-managed encryption keys (Azure Storage Service Encryption-SSE)
  - Customer encryption keys (client-side encryption)



Storage Encryption

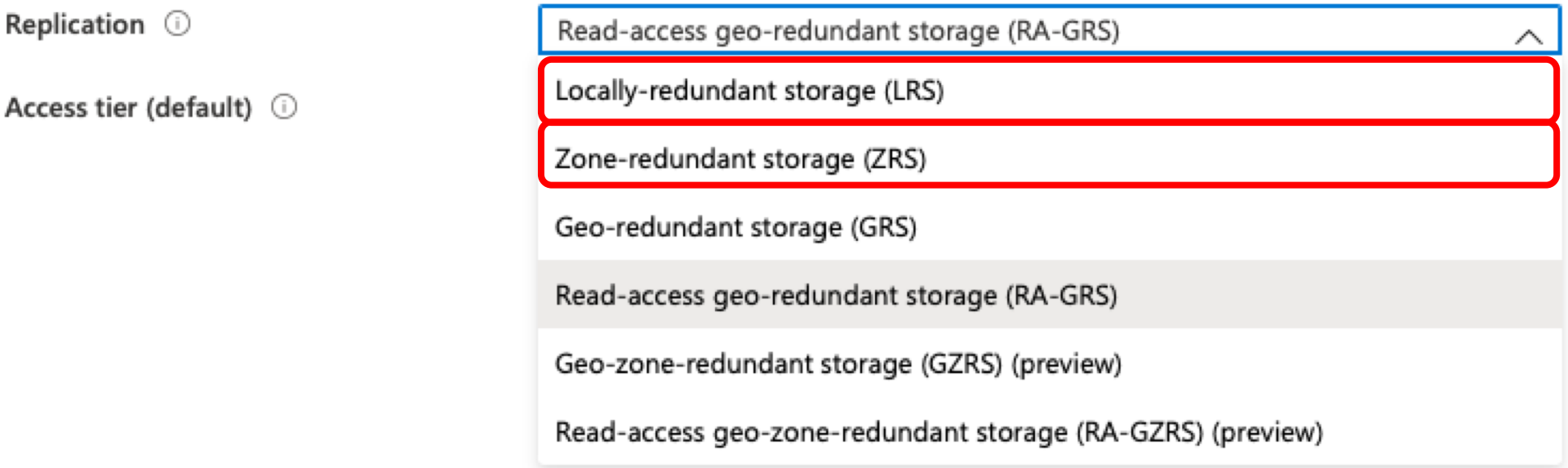
Azure Storage Replication

- Microsoft Azure always replicates data in your storage account to ensure durability and high availability
- Data can be replicated within the same DC, across zonal DCs within the same region or across geographically separated regions
- Multiple redundancy options exist, can be selected when storage account is created



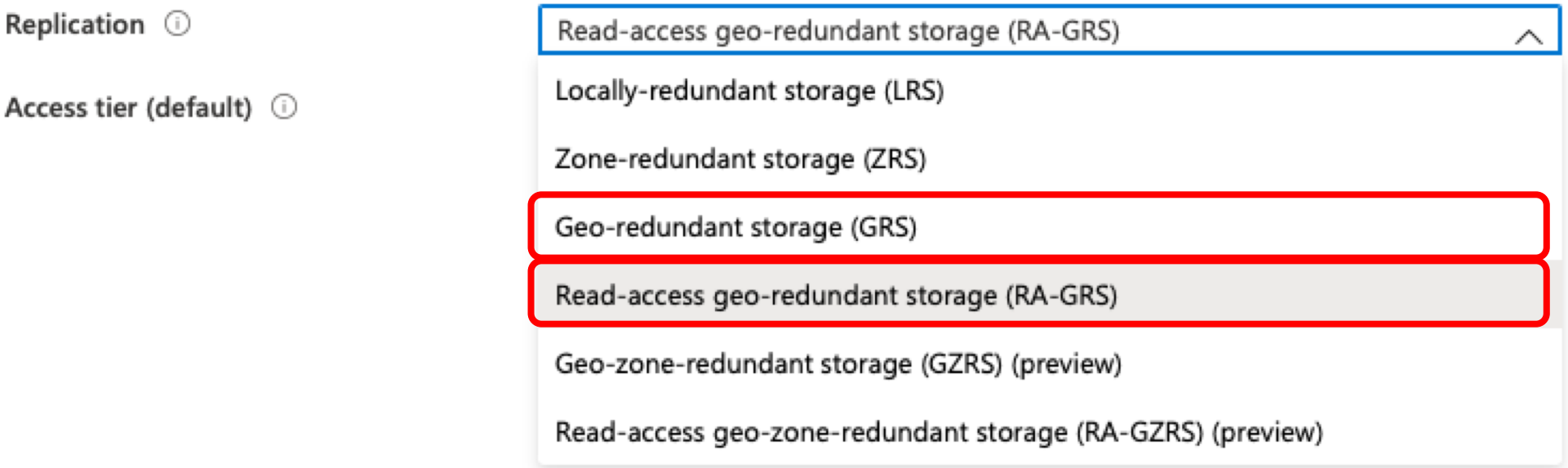
Storage Replication

Azure Storage Replication



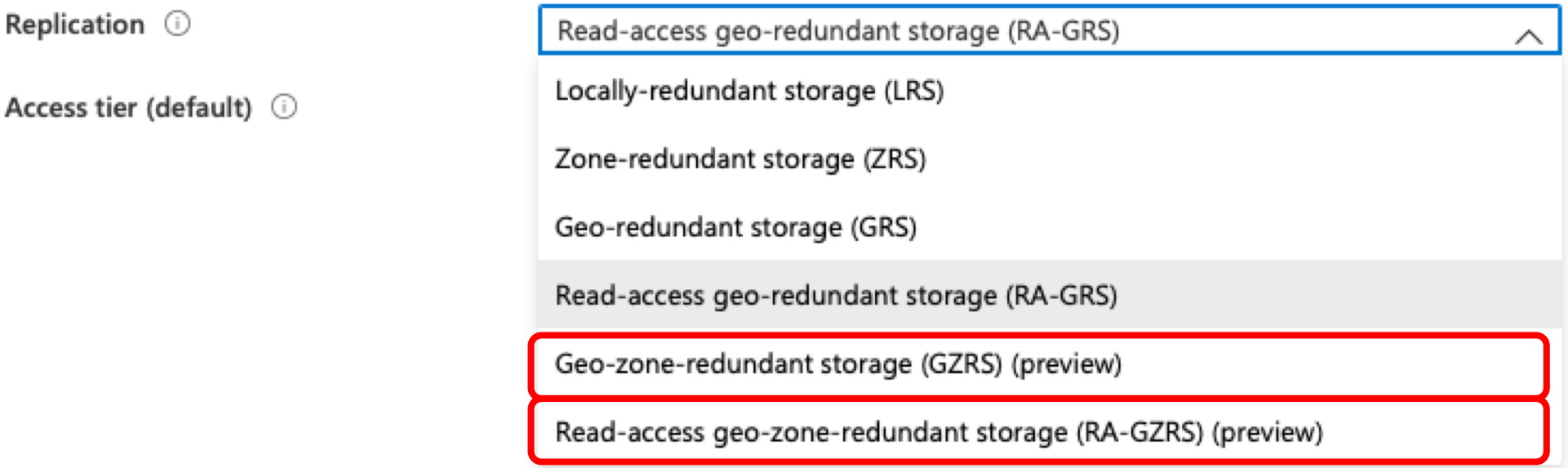
- Locally Redundant Storage (LRS) replicates your data three times within a single data center
- Zone-Redundant Storage (ZRS) replicates your data across three storage clusters in a single region (3 AZs)

Azure Storage Replication



- Geo-Redundant Storage (GRS) replicates data to a secondary region (min. 300 miles away)
- RA-GRS provides read-only access to the data in the secondary location, in addition to geo-replication across two regions (GRS)

Azure Storage Replication



- Geo-Zone-Redundant Storage (GZRS) combines ZRS and GRS, data in 3 AZs (1st region) and in a 2nd region
- Read-Access GZRS enables read access to data in the secondary region

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Thank you