Play Ground + Game

Cloud   Data

Scalable   DB & DWH

Microsoft Azure
DataBricks

Azure
- Set of Service's (Web)

Storage   Processing   PaaS

file   DB   ADBricks

CSV

Blob

Container
(Storage Account)

DWH

Storage Account
- File   - Queue   - Table   - Blob

Raw

Blob
- Serving Images, Documents directly to Browser.
- Storing files for distributed Access.
- Streaming Video & Audio.
- Writing/Reading to Log file's.
- Storing data for backup & Restore.
- DR, Archiving.

} Unstructured Data.

to Access Blob Storage
- HTTP/s
- SDK / API
- SFTP (Secure file Transfer Protocol)
- Mount ⟶ NFS 3.0

V1 ⟶ Blob Storage

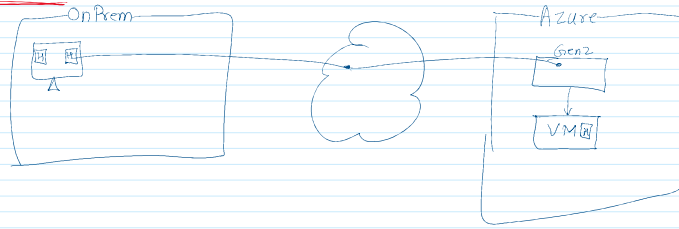V2 ⟶ Data Lake Storage Gen2 = (V1 + Extra feature's)
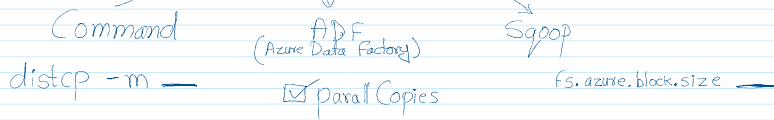
Gen2
- Low Cost
- Tiered Storage
- HA, DR Capabilities
- Strong Consistency

- HDFS

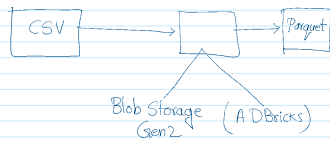- ABFS (Azure Blob File System)
- DFS
- Hierarchical

Use Case

- **Parallel Data Ingestion**

Command | ADF (Azure Data Factory) | Sqoop
distcp -m ___ | ☑ Parall Copies | fs.azure.block.size ___

- Time Series
- IoT

CSV → ☐ → Parquet

Blob Storage Gen2   (A DBricks)

End Point

(V1) Blob Storage   https:// SA. blob. core.windows.net
      Static Website.   web
(V2) DL Gen2   .dfs.
      Azure file   .file.
      Queue.   Queue
      Table Storage   table

Redundency:-

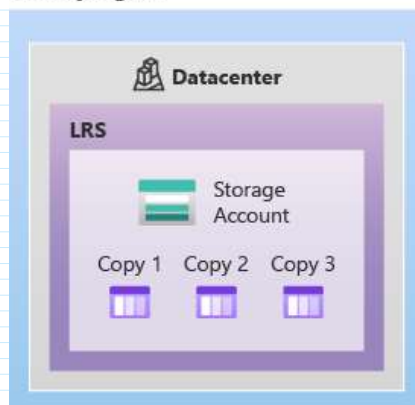LRS = Local Redundency Storage
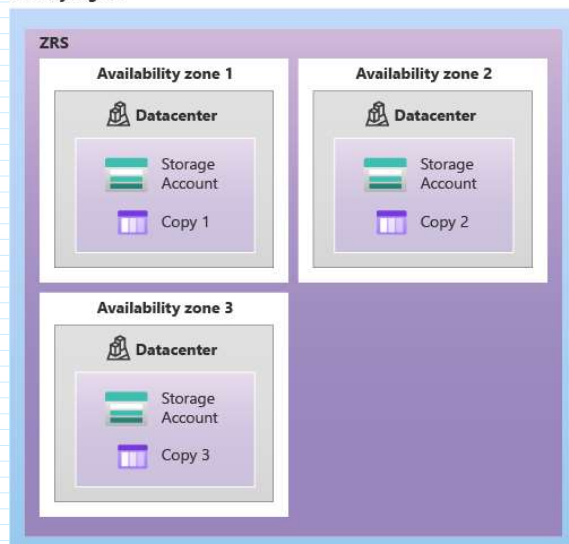
        3 replica
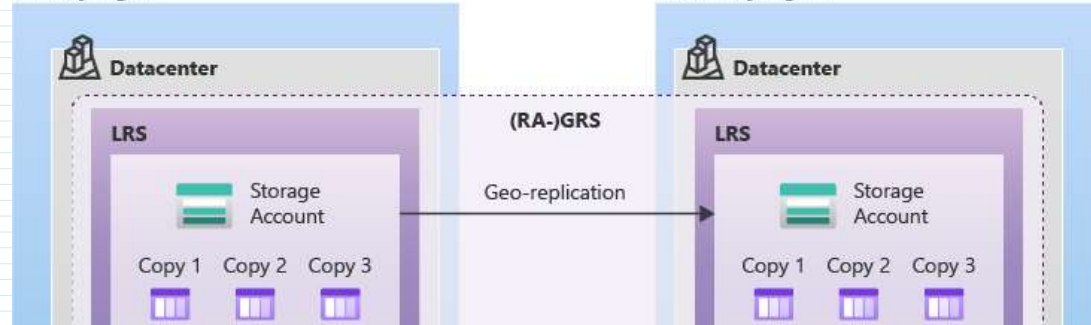   1 region
        1 zone

ZRS

3 Zone

Region.
AZone
Data Center
SA (Gen2)
CSV

AZ2 AZ3 AZ4

Primary region

Datacenter

LRS

Storage Account

Copy 1 Copy 2 Copy 3

Primary region

ZRS

Availability zone 1

Datacenter

Storage Account

Copy 1

Availability zone 2

Datacenter

Storage Account

Copy 2

Availability zone 3

Datacenter

Storage Account

Copy 3

GRS

Reg → Zone → Fi

Primary region

Datacenter

LRS

Storage Account

Copy 1 Copy 2 Copy 3

(RA-)GRS

Geo-replication

Secondary region

Datacenter

LRS

Storage Account

Copy 1 Copy 2 Copy 3

Primary region / **Secondary region**

Datacenter — LRS — Storage Account — Copy 1, Copy 2, Copy 3

(RA-)GRS — Geo-replication
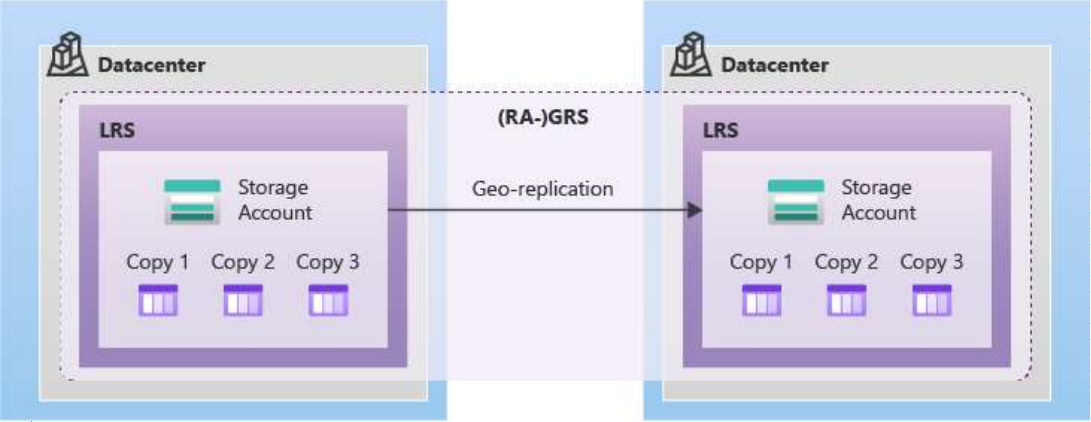
Reg → Zone → Fi

$ bash --version

$ az --version

Display all Resource Groups
$ az group list

Show a Resource Group
$ az group show --name rgCloudShell-mujahed

List all Resources within the Resource Group
az resource list --resource-group rgCloudShell-mujahed

To Export Resource Group to an ARM Template
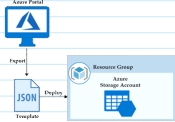# az group export --name groupName

ARM Template ——————→ CLI ——→ 📄
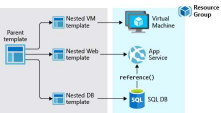
 ○ Infra. Resource's
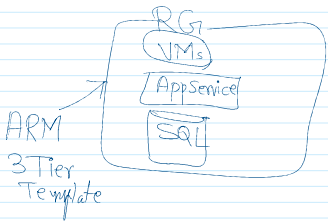 ○ Configuration
 ○ JSon
 {
① Schema = Rules
I/P ← ② Parameters
③ Variables
④ functions
⑤ Resources
O/P ← ⑥ output.

Azure Portal

JSON Template — Deploy → Resource Group / Azure Storage Account

ARM Templates:
➤ Declarative Syntax
➤ Repeatable Results
➤ Orchestration
➤ Tracked Deployment

Resource Manager Template / Non-template infrastructure as code
One template submitted / Multiple imperative PUT calls
Azure Resource Manager
Resource Providers

RG
VMs
AppService
SQL

ARM
3 Tier
Template

Parent template
Nested VM template — Virtual Machine
Nested Web template — App Service
reference()
Nested DB template — SQL DB
Resource Group

① SA → Blob ②
      → file ③
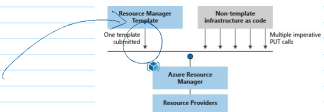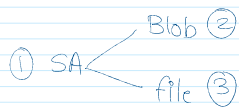
Srg = New-AzResourceGroup -Name armdemo-rg -Location WestUs2

Generate Code and Store in storageAccount.json file
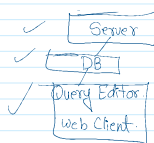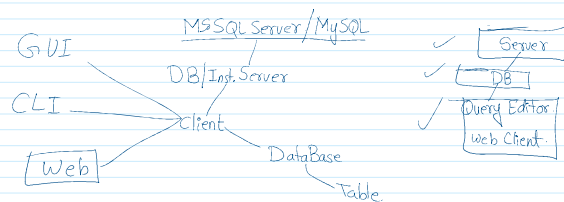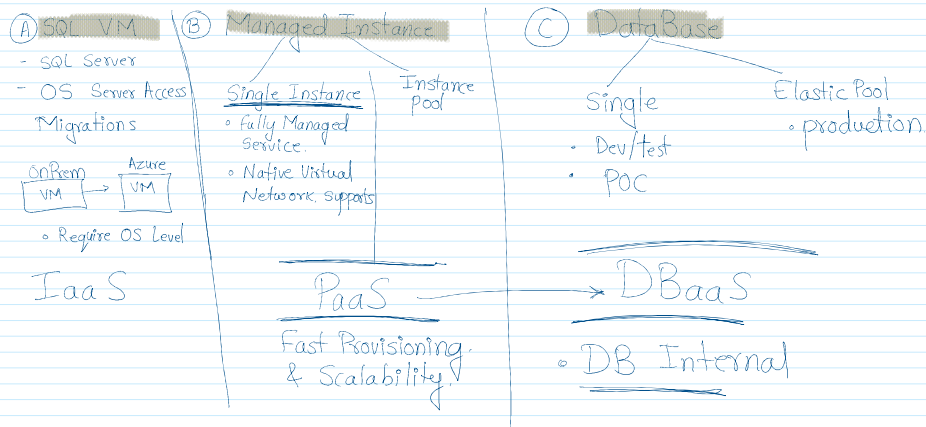   OR
Create ARM Template JSON File(storageAccount.json)
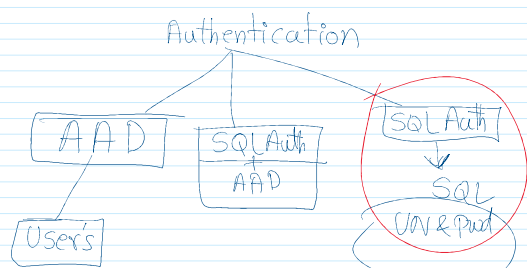
New-AzResourceGroupDeployment `
      -ResourceGroupName Srg.ResourceGroupName `
      -TemplateFile .\template.json `
      -StorageAccountName 'templatedemomujahed' `
      -TemplateParameterFile .\parameters.json `
      -Verbose

Remove-AzResourceGroupDeployment -ResourceGroupName Srg.ResourceGroupName -Name template

Azure SQL

A) SQL VM
- SQL Server
- OS Server Access
- Migrations

OnPrem   Azure
[VM] → [VM]

○ Require OS Level

IaaS

B) Managed Instance

Single Instance   Instance Pool
○ Fully Managed Service.
○ Native Virtual Network, supports

PaaS
Fast Provisioning.
& Scalability. √

C) DataBase

Single   Elastic Pool
○ Dev/test   ○ production.
○ POC

DBaaS
○ DB Internal

GUI   MSSQL Server/MySQL   ✓ [Server]
                  DB/Inst Server   ✓ [DB]
CLI ——— Client   ✓ Query Editor
                                                web Client.
[Web]   DataBase
                        Table.

1] Server
2] DB

Authentication

[AAD]   [SQL Auth]   (SQL Auth)
              + AAD   ↓
                                SQL
[User's]   UN & Pwd

Username: admin-mujahed
Password: Localhost@123