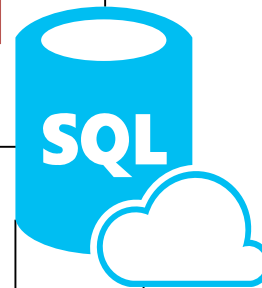**SQL Server**

- Auto patch & update
- Auto scale/resource
- Restore (point in time)
- Different regions = disaster recovery
- Advanced threat protection/security/vulnerability checks
  - SQL injection attacks
- Auditing (logs in storage account for compliance)
- Encryption
  - Transport Layer Security (TLS) for data in motion
  - Always encrypted for data in use (Encryption-in-use)
  - Transparent Data Encryption (TDE) @ rest

SQL DB Server

- Logical construct as central admin for 1/pooled DB, login, firewall, audit, threat & failover

IaaS

- Relational Data Base Management Software (DBMS)
- VM with full SQL Server in the cloud
- Replicates data
- Stored procedures/scripts => database workload automation
  - Some operations restructued in PaaS/IaaS
- Maintain SQL software & administration
- Lift & shift migration -> Existing apps may require configuration
- Use case: Hybrid Deployment
  - Create development and test environments
  - Lift & shift apps with minimal/no changes
  - Scale memory/CPU/disk space

PaaS

Managed Instance

Azure SQL Database

Single Database

- Create & run DB cloud
- Microsoft managed server
- Configure DB, create tables & data
- Charged per hour for server resouces
- Serverless (shared isolated DB)
- Auto scale/resource

Elastic Pool

- Pool = Multiple DB share resources (memory/storage/CPU) through multiple tenancy
- Create & run pool
- Fixes price/budget for pool (pay per resource not per DB & resources used as required)
- Data Migration Assistant (check compatibility issues)
- Modern cloud apps
- High availability
- Variable load
- 99.99% SLA

aRt Verse
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Compiled by Dr T Oberholster
DP-900 version: March 2021

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