
It's Just SQL Server on Azure, Right?

Understanding SQL Server Options on Azure

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Moving SQL Server to Azure

- Moving to Azure changes your model for data
- Moving to Azure will give you more flexibility in the future
- Moving to Azure does not eliminate a DBA's job, it does change it though
- New solutions or applications should be built cloud ready, pay attention to the details
- Let's check out the options...

Azure SQL Server Targets

Azure SQL Database -
Managed Instance



Azure SQL Database –
Single Database



SQL Server on Azure VMs



*What about Azure SQL Data Warehouse?
What about Azure SQL Database Elastic Pools?*

Top Considerations

- Operational Ease
- Secure Environment
- Functional Equivalence
- Migration Options

Operational Ease

- Patches and Updates applied by Microsoft on PaaS solutions
 - SQL Server on VMs require the customer to manage patches on SQL Server and Windows
 - PaaS solutions are “versionless”
- Automated backups
 - At least 7 day recovery period
 - Managed Instance can do formal backups
 - VMs must be programmed
- Disaster Recovery
 - PaaS SQL Database solutions can be set up within Azure framework

Secure Environment

- Compliance
- Azure Active Directory vs SQL Logins vs Active Directory
- PaaS
 - SQL Database – Single Database
 - Public Endpoint
 - SQL Database – Managed Instance
 - VNET Secured
- IaaS
 - VMs secured similar to what you have on premises

Functional Equivalence (Key Comparison)

Single Database

- Most T-SQL Covered
- Automatic Tuning
- Temporal Tables
- Row Level Security
- **High Availability**
- Much more

Managed Instance

- **BACKUP command**
- Change Data Capture
- CLR (no file system access)
- **Cross database functionality**
- DBMail
- Service Broker (limited)
- **SQL Server Agent**

SQL on VM

- Everything there
- **FILESTREAM**
- Attach a database
- Extended Stored Procedures
- Polybase

Migration Options

- Azure Data Migration Assistant – Generates assessment
- Azure Data Migration Service – Supports online and offline migrations
- Migrating to PaaS
 - Managed Instance >
 - Backup & Restore
 - DMS
 - Single Database
 - DMS

Easy migration: nearly 100% like SQL Server

Data migration

- Native backup/restore
- Configurable DB file layout
- DMS (migrations at scale)

Security

- Integrated Auth (Azure AD)
- Encryption (TDE, AE)
- SQL Audit
- Row-Level Security
- Dynamic Data Masking

Programmability

- Global temp tables
- Cross-database queries and transactions
- Linked servers
- CLR modules

Operational

- DMVs & XEvents
- Query Store
- SQL Agent
- DB Mail (external SMTP)

Scenario enablers

- Service Broker
- Change Data Capture
- Transactional Replication

Making a Choice

	Single Database	Managed Instance	Virtual Machine
Operational Ease	Easy	Moderate	On your own
Security	External Endpoint	VNET Secured	Self Managed
Functionality	Most key functionality	High level of compatibility	Same functionality
Migration	More difficult; bacpac; green field is easier	Easy, backup/restore	Easy, backup/restore, detach/attach
Server	Completely managed, single database management	Completely managed, multiple databases on instance with cross database functionality	Self managed, multiple instances, multiple databases
Price for 1 TB database per month (West US); 8 core, general purpose, backup storage	\$1819 (1 TB retention)	\$1702	\$5723 (two VMs with Enterprise SQL Included)

Estimates are just that, estimates. All can be reduced by bringing your own licenses and other options available from Microsoft. Your experience will be different.



Final thoughts

The overall best solution that we recommend is moving to SQL Server Database – Managed Instances. In most cases, it provides the best functional equivalence and operational ease for the price. It is more secure from the ground up than single databases without the complexity of managing it yourself.

Every customer should evaluate the best choice for their environment and requirements. Ask us! We are happy to help

Have Any Questions?

Which Azure SQL option is best for you?

