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# Migrating SQL Server Databases to Azure

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He/Him/His





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## Data Professional

Microsoft Data Platform MVP. 16 Years working with Microsoft Data Platform. Microsoft and MongoDB certified. Worked in ecommerce, healthcare and finance industry.

## Giving Back

Board member NESQL user group and Founder of DBA virtual group. Organizer of Boston SQL Saturday. Frequent speaker at local and virtual user groups, SQL Saturdays and Azure conferences.

## When Not Working

Running – 1x26.2 and many 13.1, Learning US history. Shuttling 3 kids.

# Options



Azure SQL  
Database  
(PaaS)

Azure SQL  
Managed  
Instance (PaaS)

SQL Server on  
Azure VM  
(IaaS)

	Azure SQL Database	Azure SQL Managed Instance	SQL Server on Azure VM
Size	100 TB	16 TB <sup>1</sup>	256 TB
SLA	99.995%	99.99%	99.99%
Backups	✓	✓	<sup>2</sup> ✗
Patching	✓	✓	<sup>2</sup> ✗
Version	Compatibility Level	Compatibility Level	Both
Scaling	Online	Online	Offline
HA/DR	✓	✓	✗

1 = Datafile is limited to 8TB

2 = SQL Server IaaS Agent extension

# Key Factors

- Number of servers and databases
- Size of databases
- Downtime available

# Deployment Models

- Single database
- Elastic pool



# Purchasing Models

- Virtual core (vCore) model
- DTU model
- Serverless model<sup>1</sup>

<sup>1</sup>=only supported General purpose, Gen5 hardware and vCore purchasing mode

# Service Tiers

- General purpose/Standard service
- Business critical/Premium service
- Hyperscale service tier



# Transaction log rate governance

# Features



# Feature Considerations

- SQL Server Integration Services
- SQL Server Reporting Services
- High availability
- Logins and Groups
- SQL Agent jobs
- System Databases

# Features in Azure

- Automated backups
- Azure AD authentication
- Auditing
- Ledger
- Threat detection
- SQL insights (Preview)
- Intelligent Performance
- Monitoring with Metrics+Diagnostics

# Migration Tools

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# Discover

**Discovery and  
Assessment**

**Data Migration  
Assistant**

# Assess

**Data Migration  
Assistant**

**Database  
Experimentation  
Assistant**

**Movere**

# Migrate

**DACPAC/BACPAC**

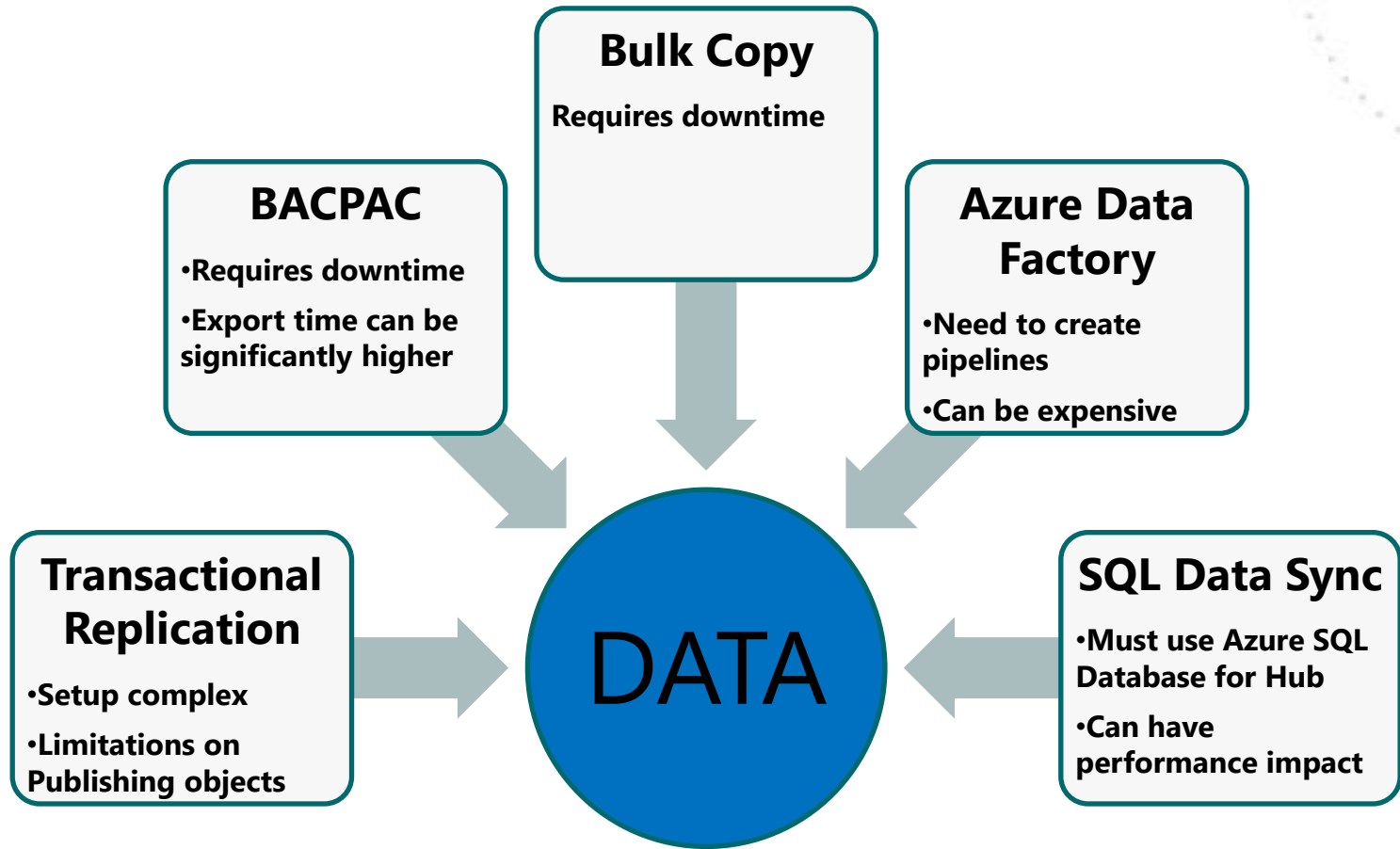
**Azure Database  
Migration Services**

**Server Migration**

**Azure Data Box**



# Compare SQL data migration tools



# Azure Data Box



## DEMO

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SQL 2019 CU15

Azure Portal

Azure Data Studio

Visual Studio

PowerShell

PowerShell Notebook

SQL Server Management Studio



# Reference

- **Azure Database Migration Guides**
- **Azure Database Migration Service**
- **Migration guide: SQL Server to Azure SQL Database**
- **Perform a SQL Server migration assessment with Data Migration Assistant**
- **Configure public endpoint in Azure SQL Managed Instance**
- **Migrate a SQL Server database to Azure SQL Database using Azure PowerShell**



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