

# Managing Azure SQL Server Database Performance

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## HOSTING SQL SERVER DATABASES IN AZURE



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# Introduction



## Hosting options for SQL Databases

- Infrastructure-as-a-Service (IaaS) options
- Platform-as-a-Service (PaaS) options
- Factors to consider when choosing the data offering
- Demo: Create a single database in Azure SQL Database

## Migration Methods

- Online methods
- Offline methods
- Demo: Migrating SQL Server database to Azure using Data Migration Assistant (DMA)



# Hosting Options for SQL Databases

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# Options to Host your SQL Server Workloads

## Infrastructure-as-a-Service (IaaS)

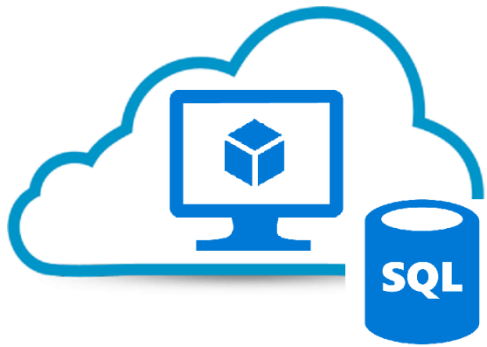
- Host model
- Full control over the database engine
  - Requires to manage infrastructure
    - Requires to manage software updates and security
- Expensive option for high available databases

## Platform-as-a-Service (PaaS)

- Build model
- No need to set up infrastructure
- No need to manage software updates
- Fully managed service
- Autoscale feature
- Cost effective solution



# IaaS Hosting Options



SQL Server on Azure  
virtual machines

- Lift and shift ready for existing applications
- Fast migration to the cloud
- Minimal changes or no changes
- Full control over the database engine

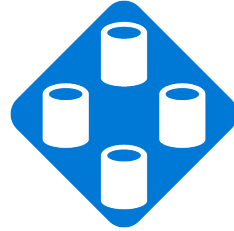
# PaaS Hosting Options

## Single Database



- Fully managed service
- Built-in intelligence support
- Active geo-replication
- Advanced Threat Protection
- Serverless compute tier available

## Elastic Pool



- Shared resource model (compute and storage)
- Cost effective solution with fixed budget
- All benefits of single database
- Elastic jobs feature

## SQL Managed Instance

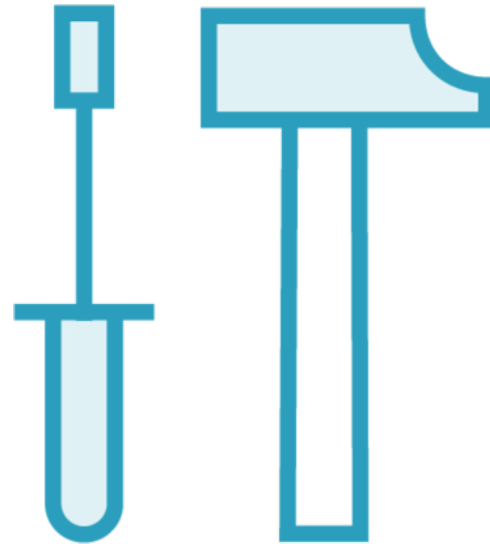


- Compatibility with SQL CLR, SQL Server Agent and Cross Database Queries
- Easy lift and shift
- Full isolation and security

# Factors to Consider When Choosing the Data Offering



Cost



Administration



Service-level  
Agreement



Time to move to  
Azure

# Demo



## Steps

- Create Azure SQL Database
- Explore the database features available



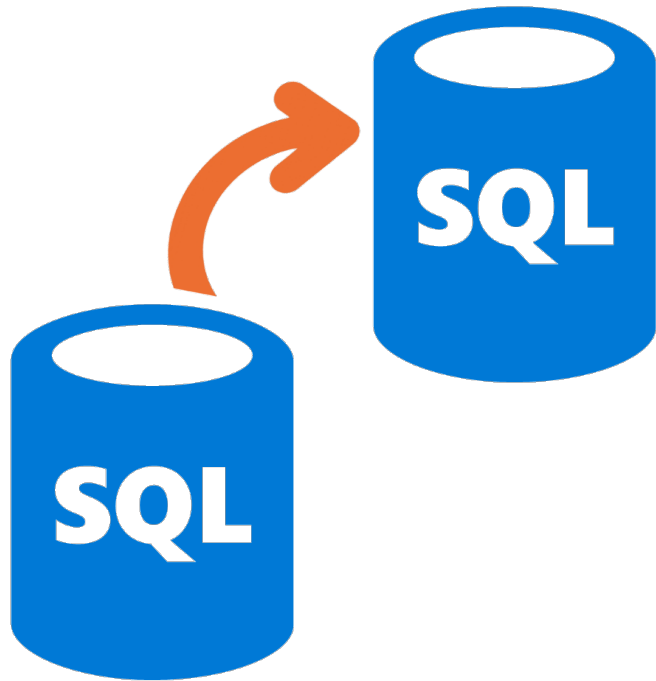


# Migration Methods

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# Migration Options



**Transactional Replication**

- Near real-time synchronization
- Synchronize changes between distributed databases
- Publisher and Subscriber mode
- Changes managed by Distributor component
- Multiple types of replication

# Migration Options



**Bulk Load**

- Migrate full database using BACPAC file
- Migrate data file using Bulk Insert statement
- Bulk copy data using Bulk Copy Program (BCP) utility
- Manual and Offline migration



# Migration Options



**SQL Server Management  
Studio Database Deploy**

- Available since version SQL Server 2012
- Manual scripting migration
- Few limitations and requirements  
(clustered indexes, extended properties)



# Migration Options

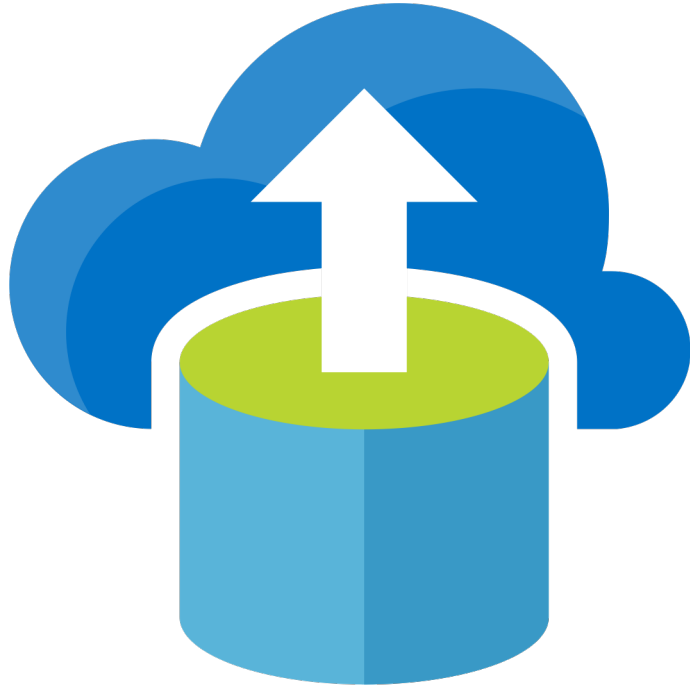


Azure Database Migration Assistant (DMA)

- Schema only, Data only or Schema and Data migration
- Assess the migration
- Recommendations feature
- Migration of single source to single target
- Free migration



# Migration Options



Azure Database Migration  
Service (DMS)

- Fully managed service
- Multiple sources
- Multiple targets
- Offline and Online migration support
- Migration reports using DMA tool
- Automated migration
- Continuous sync

# Demo



## Steps

- Migrate SQL Server database to Azure using DMA
- Explore DMA features



# Summary



How to pick the best option to host your SQL Database in Azure

Understand the factors to decide between the different options to host your SQL Database in Azure

Options available to migrate your SQL Server database to Azure

How to create a single database in Azure SQL Database

How to migrate a SQL Database to Azure

