

Migrating SQL Server Databases to Azure

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Azure Database Migration Guides

Step-by-step guidance for modernizing your data assets.

<https://learn.microsoft.com/en-us/data-migration/>

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Log generation
rate maximum



Transaction log rate governance

.DACPAC

.BACPAC

Can be interacted using SSMS, PowerShell and .NET

Can see XML content by renaming to .zip

Schema

**Schema +
Data**

Options





Azure SQL Database



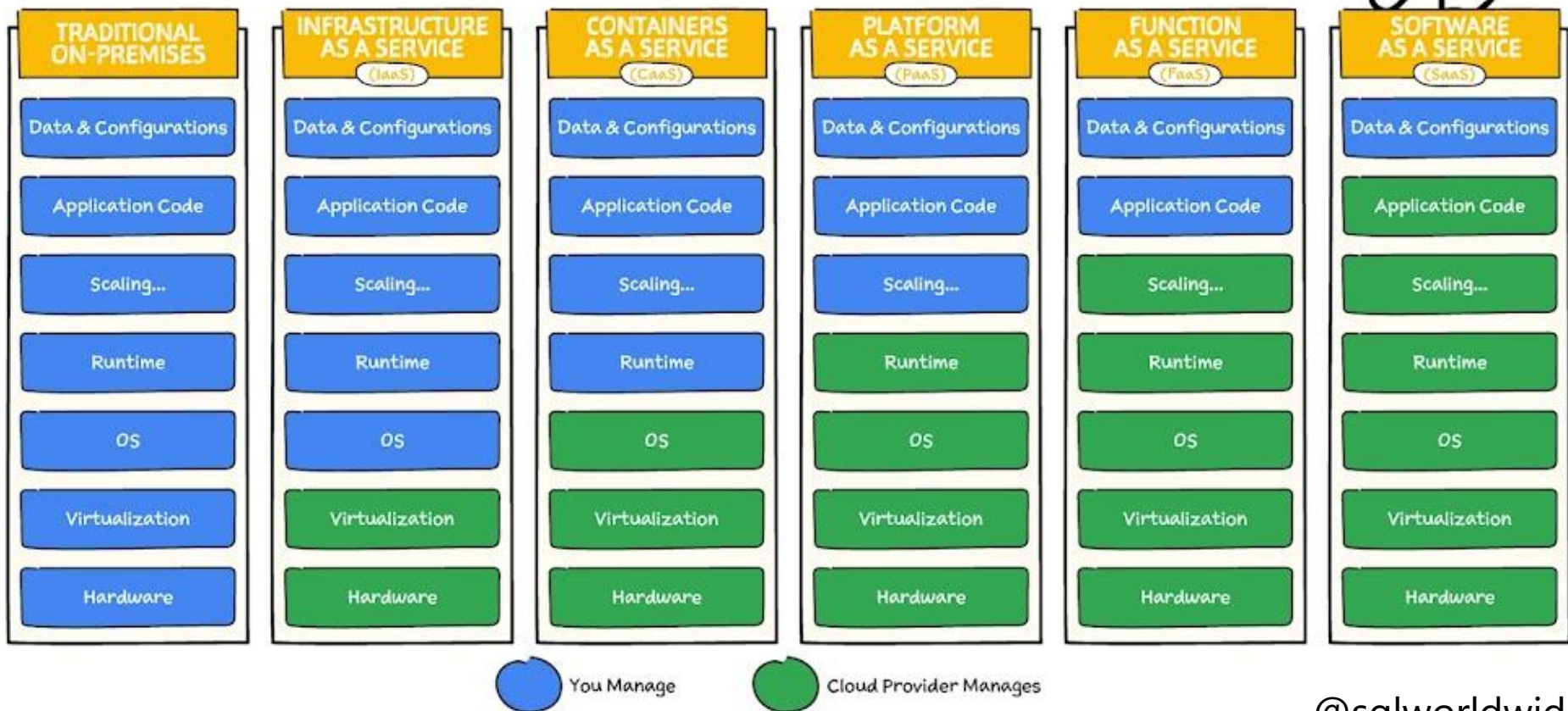
Azure SQL Managed Instance



SQL Server on Azure VMs



Wait... what is Cloud again?



	Azure SQL Database	Azure SQL Managed Instance	SQL Server on Azure VM
Size	4 TB/128 TB	16 TB ¹	2 PB
SLA	99.995%	99.99%	99.99%
Backups	✓	✓	² ✗
Patching	✓	✓	² ✗
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
 - Offline
 - Online

Deployment Models (PaaS)

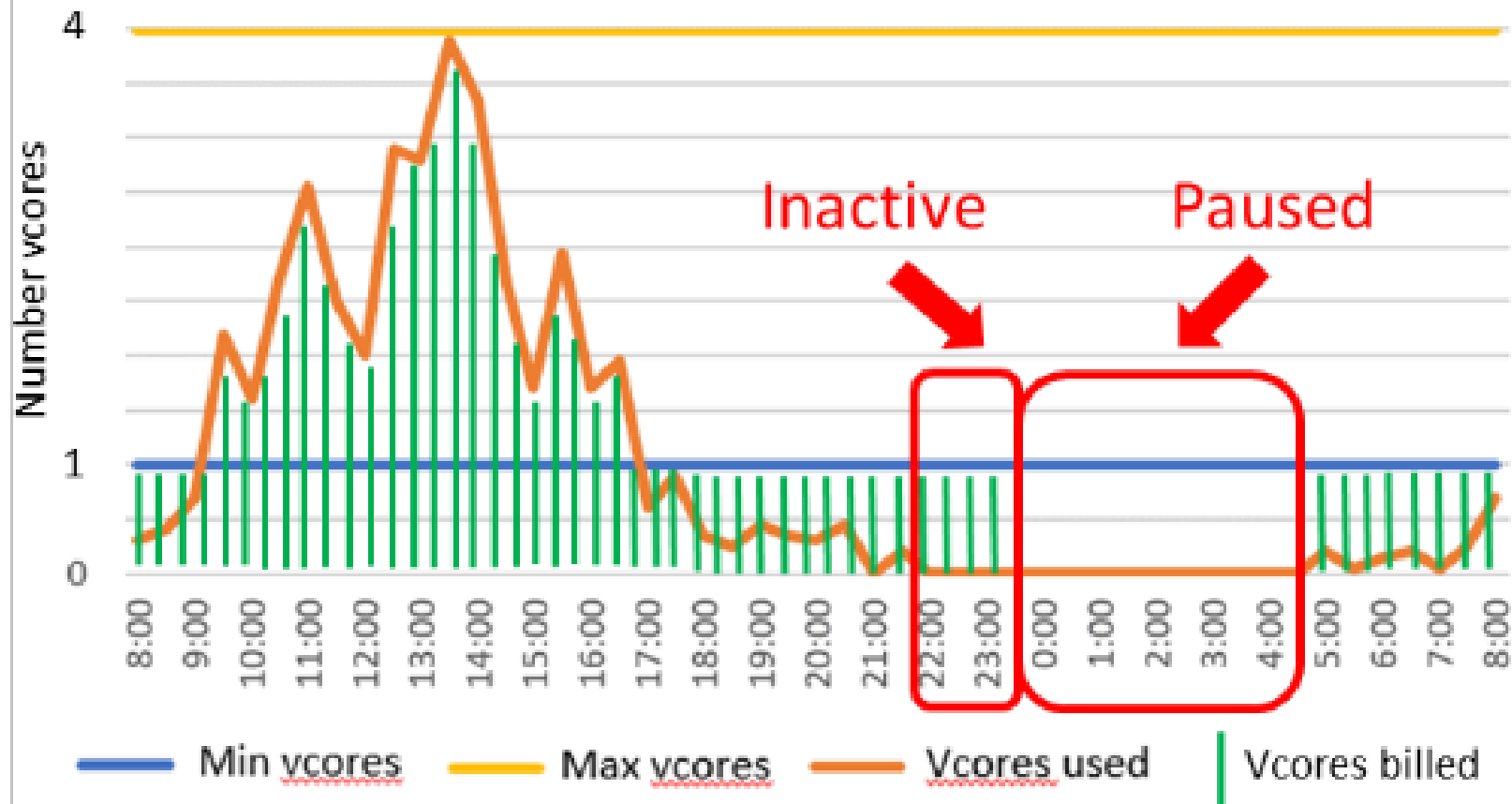
- Single database
- Elastic pool

Purchasing Models (PaaS)

- Virtual core (vCore) model
- Database Transaction Unit (DTU) model
- Serverless model¹

¹=SQL Database serverless compute tier is available in General-Purpose and Hyperscale Service tier on Standard-series (Gen5) hardware configuration only.

CPU usage



Service Tiers (PaaS)

- Basic (DTU only)
- General purpose/Standard service
- Business critical/Premium service
- Hyperscale service tier

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
- Microsoft Entra authentication
- Auditing
- Ledger
- Defender for Azure SQL
 - Vulnerability assessment
 - Threat protection
- Database Watcher (Preview)
- Intelligent Performance
- Query Performance Insight
- Monitoring with Metrics and Diagnostic
- Scale up and down

Migration Tools



Discover/Assess

Azure Migrate

Data Migration Assistant

**Database Experimentation
Assistant**

Migrate

DACPAC/BACPAC

Azure Migrate

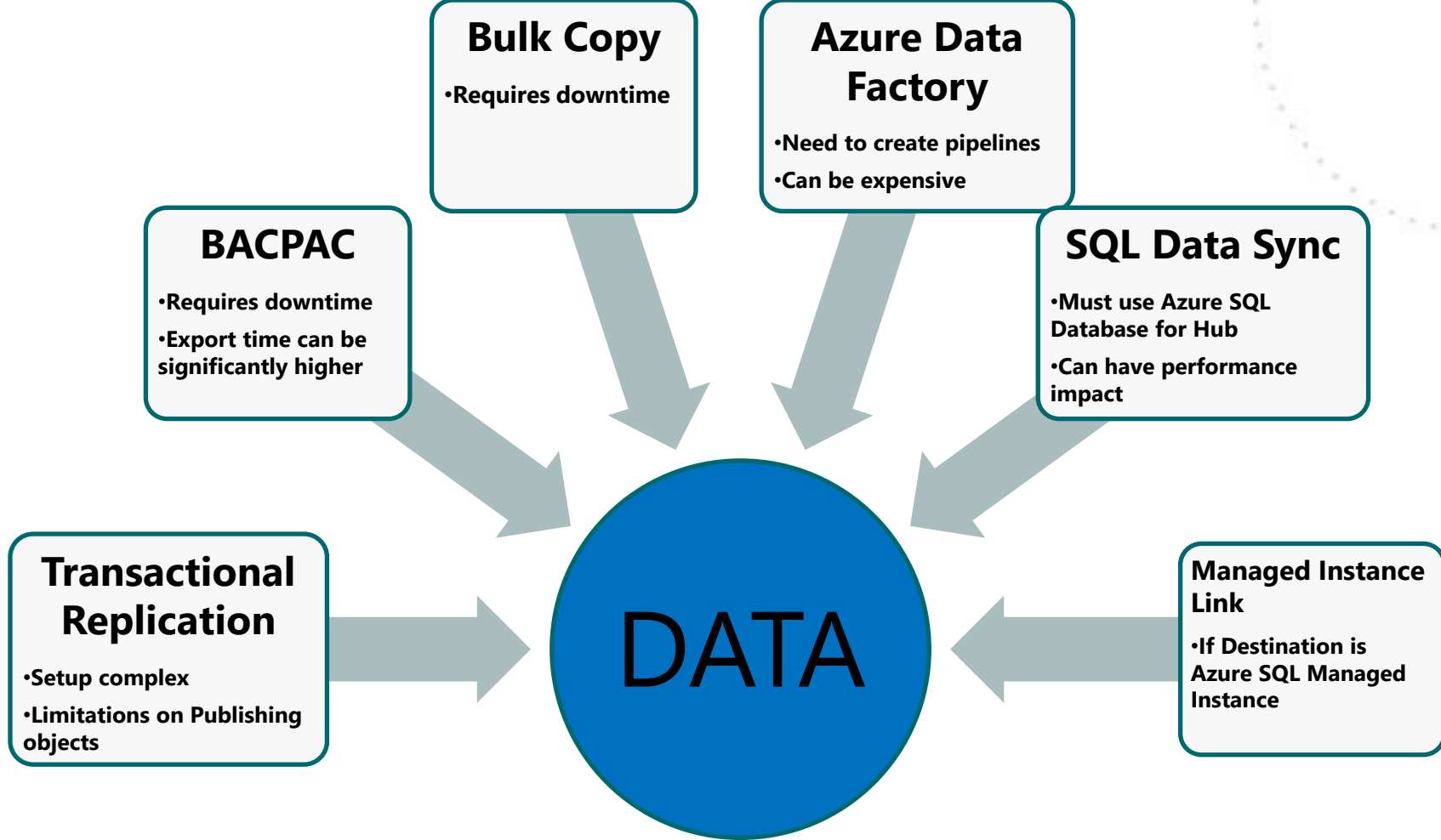
Database Migration Assistant

**Azure Database Migration
Services**

Azure Data Box

Compare SQL data migration tools

Capability	Azure Migrate	Data Migration Assistant (DMA)	SQL Server Migration Assistant (SSMA)	Azure Database Migration Service (DMS)	Database Experimentation Assistant (DEA)	ADS Extension
Discover and assess SQL data estate	Y	Y	N	N	N	Y
Migrate SQL Server objects to SQL Database or SQL Managed Instance	N	Y	N	Y	N	Y
Lift and shift SQL Server to SQL Server on Azure VM	Y	N	N	N	N	N
Migrate (and/or upgrade) SQL Server to SQL Server on Azure VM	N	Y	N	N	N	N
Migrate non-SQL objects (Oracle, Access, DB2, and so on)	N	N	Y	N	N	N
Migrate open-source databases (MySQL, PostgreSQL, MariaDB, and so on)	N	N	N	Y	N	N
Compare workloads between on-premises SQL Server and SQL Server on Azure VM	N	N	N	N	Y	Y



Azure Data Box

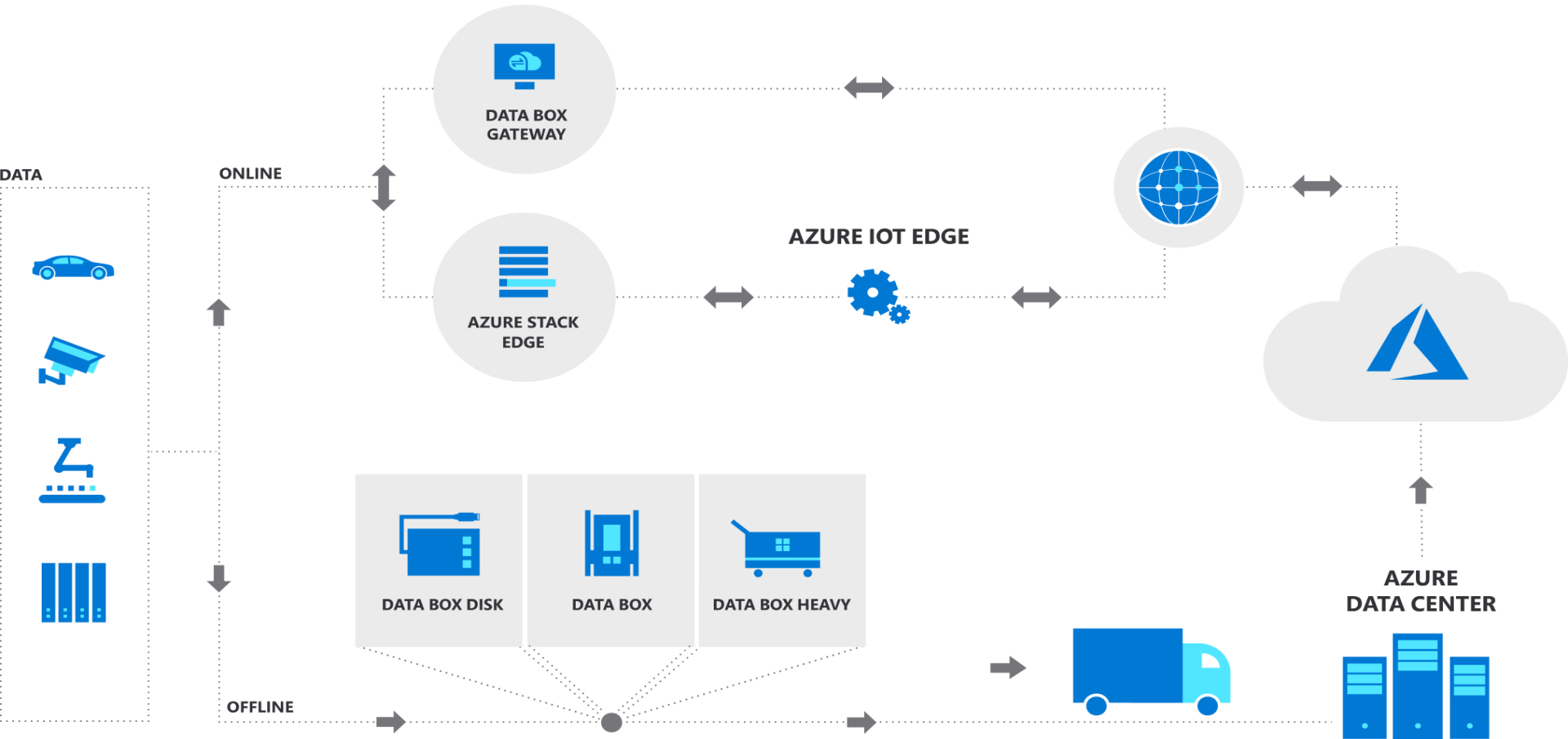


<https://azure.microsoft.com/en-us/products/databox/>

Data Box

Get your data to the cloud

<https://azure.microsoft.com/en-us/products/databox#overview>



DEMO

SQL 2022 CU15

Azure Portal

Azure Data Studio

Visual Studio

PowerShell

PowerShell Notebook

SQL Server Management Studio



Reference

- **[Azure Database Migration Guides](#)**
- **[What is 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](#)**
- **[Assess the readiness of a SQL Server data estate migrating to Azure SQL Database using the Data Migration Assistant](#)**



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