
Microsoft
Ready for take-off
How to get your databases into the cloud

DATAmasterminds

POWER BI SENTINEL

Documentation · Data Lineage · Change Tracking · Backup

ROSEN

empowered by technology

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SHOP APOTHEKE
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dbWatch
DATABASE CONTROL

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Andre advises customers in topics all around the Microsoft Data Platform. Since version 7.0, Andre gathering experience with the SQL Server product family. Today Andre concentrates on working with data in the cloud, like Modern Data Warehouse architectures, Artificial Intelligence and new scalable database systems like Azure Cosmos DB.

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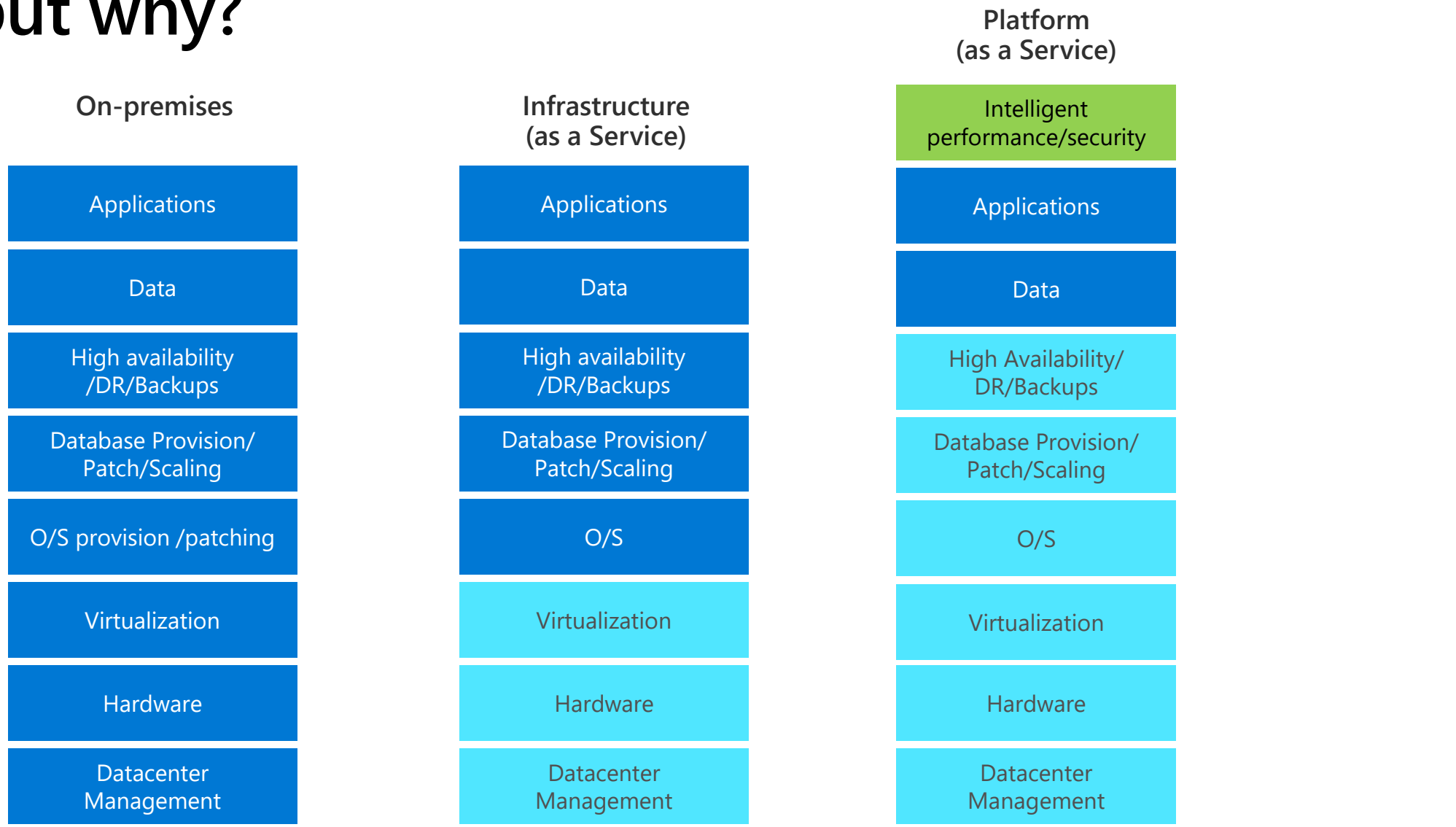
Cloud, but why?

Cloud, but why?



The modern data estate

Microsoft's cloud solution

Azure Data Services

Operational databases

Azure SQL Database
for relational data
Managed and intelligent, auto-scales up to 100TB per database

Azure Cosmos DB
for non-relational/NoSQL data
Guarantees high availability and <10ms latency SLAs

Azure databases for MySQL, PostgreSQL, and MariaDB
for open source
Enterprise-ready, fully managed database as a service

Data lakes & analytics

Azure Data Lake
for processing and analytics on data of any size, shape, and speed
99.9% SLA

Azure Databricks
for big data analytics and AI solutions
Apache spark-based analytics

Azure HDInsight
for open source analytics
Enterprise-grade with over 30 compliance certifications

Data warehouses

Azure SQL Data Warehouse
for complex queries across petabytes of data
40 Azure regions, most availability among all cloud-based data warehouse providers

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Reason over any data, anywhere

Flexibility of choice

Security and performance

Azure SQL Database hosting options

Azure SQL Database

Single

Database-scoped deployment option with predictable workload performance

Best for apps that require resource guarantee at database level

Elastic Pool

Shared resource model optimized for greater efficiency of multi-tenant applications

Best for SaaS apps with multiple databases that can share resources at database level, achieving better cost efficiency

Managed Instance

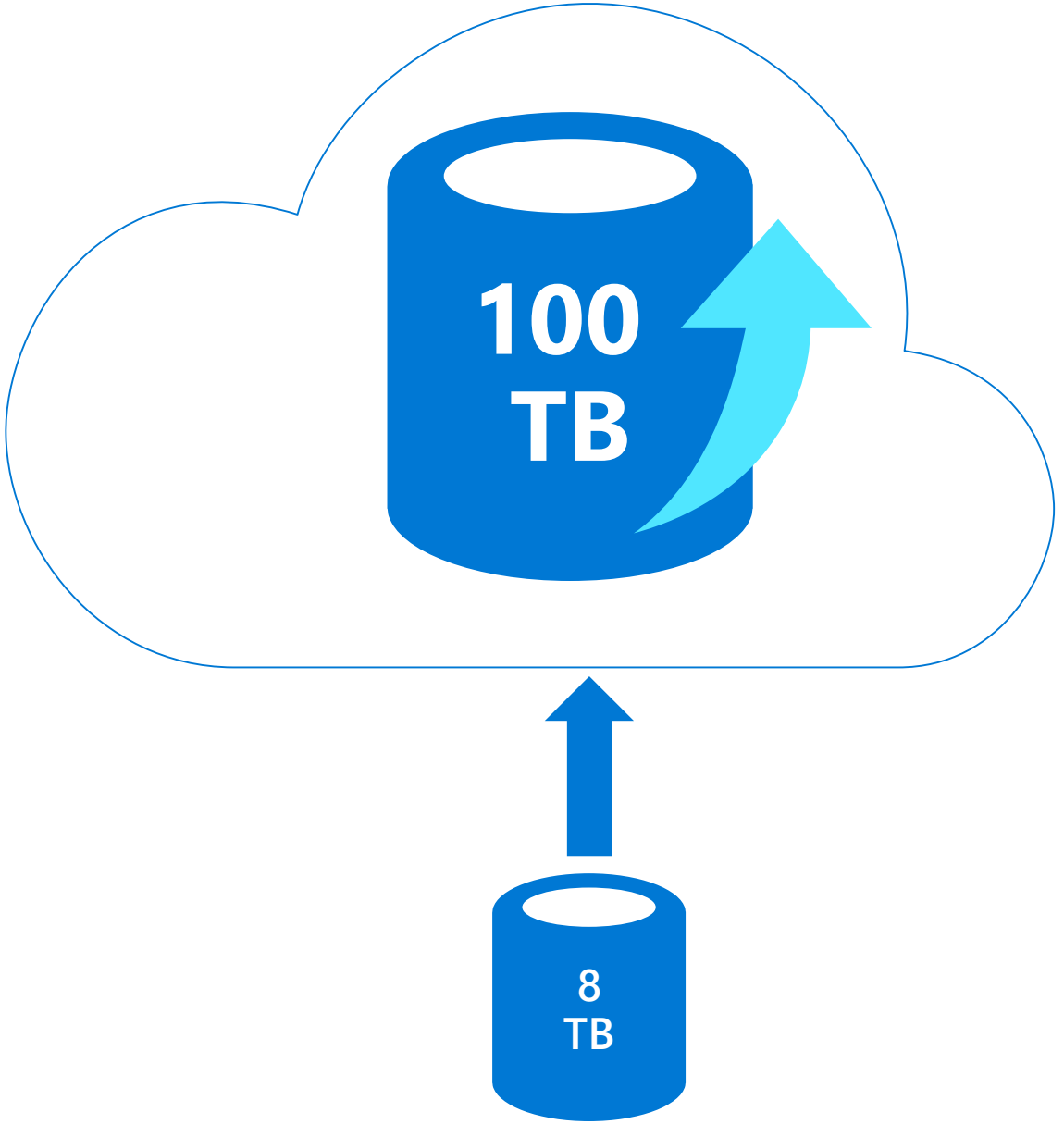
Instance-scoped deployment option with high compatibility with SQL Server and full PaaS benefits

Best for modernization at scale with low friction and effort

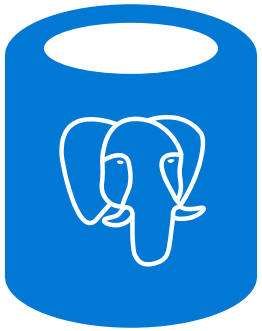
Hyperscale your database

Hyperscale is a new, highly scalable service tier that adapts on-demand to your workload's needs, auto-scaling up to 100TB per database.

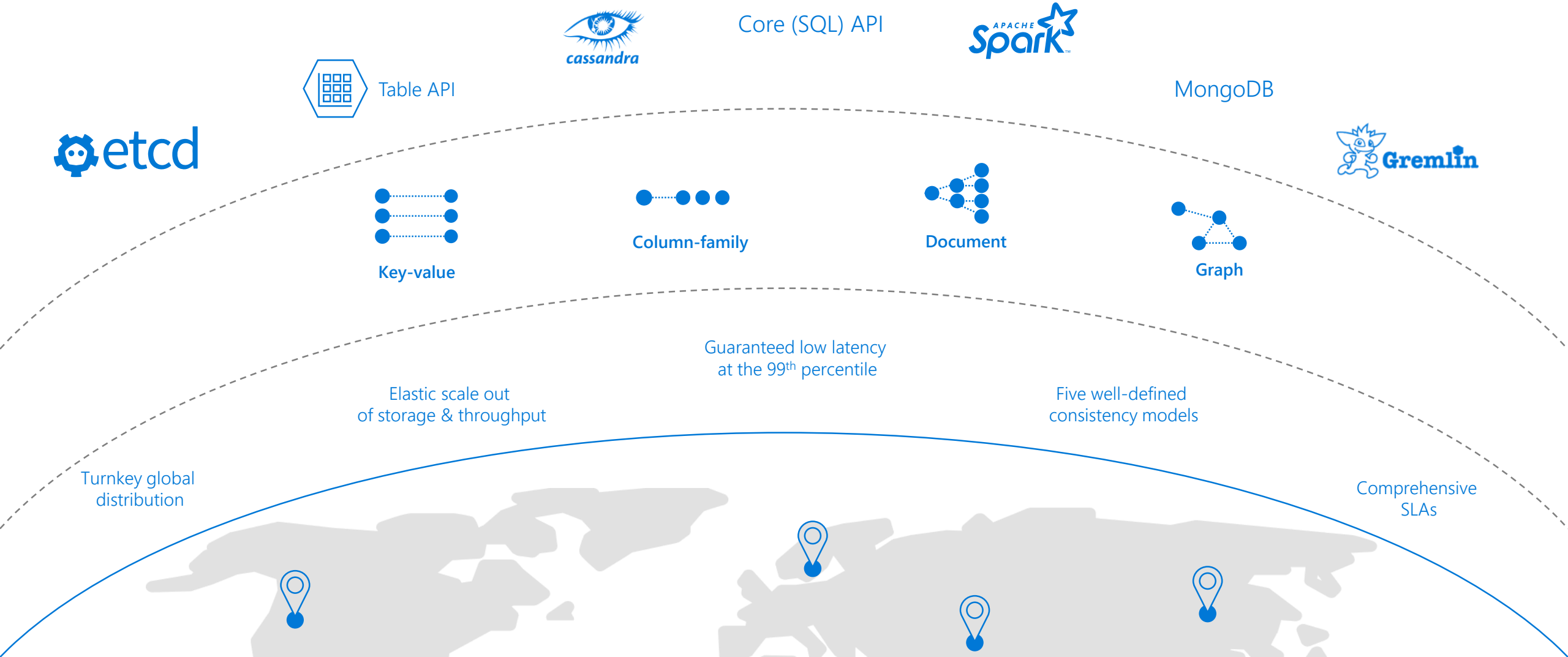
- Storage dynamically adapts to your workloads' needs, auto-scaling up to 100TB.
- Provision one or more additional compute nodes that can serve your read-only workload and use them as a hot-standby, in case of failover.
- Perform operations in constant time, regardless of the size of the data operation.
- Compute and storage resources scale rapidly and independently without sacrificing performance.



AZURE DATABASE SERVICES FOR MYSQL, POSTGRESQL, AND MARIADB DEMONSTRATE MICROSOFT'S COMMITMENT TO OPEN SOURCE



AZURE COSMOS DB



Cloud, ok - but how?

Cloud migration strategies

Rehost

Often referred to as "**lift and shift**" migration, this no-code option lets you migrate your existing applications to Azure quickly. Each *application is migrated as-is*, which provides the benefits of the cloud without the risks or costs of making code changes.

Refactor

Often referred to as **repackage**, this cloud migration strategy involves *some change to the application design but no wholesale changes to the application code*. Your application can take advantage of infrastructure as a service (IaaS) and platform as a service (PaaS) products, such as Azure App Service, Azure SQL Database Managed Instance, and containers.

Rearchitect

Modify or extend your application's code base to scale and optimize it for the cloud. *Modernize your app into a resilient, highly scalable, independently deployable architecture* and use Azure to accelerate the process, scale applications with confidence, and manage your apps with ease.

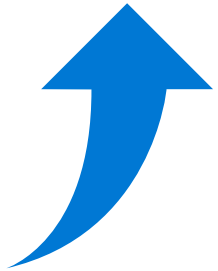
Rebuild

Rebuild an application from scratch using cloud-native technologies. Azure platform as a service (PaaS) provides a complete development and deployment environment in the cloud, without the expense and complexity of software licenses, the need for underlying application infrastructure, or middleware and other resources. With this cloud migration strategy, *you manage the applications and services you develop*, and Azure manages everything else.

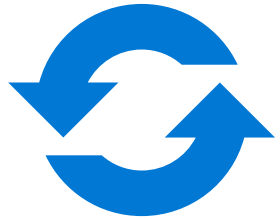
For more information about cloud migration strategies, see Start your cloud migration process.

Cloud migration strategies

Rehost and refactor offer the best migration experience for on-premises to Azure migrations

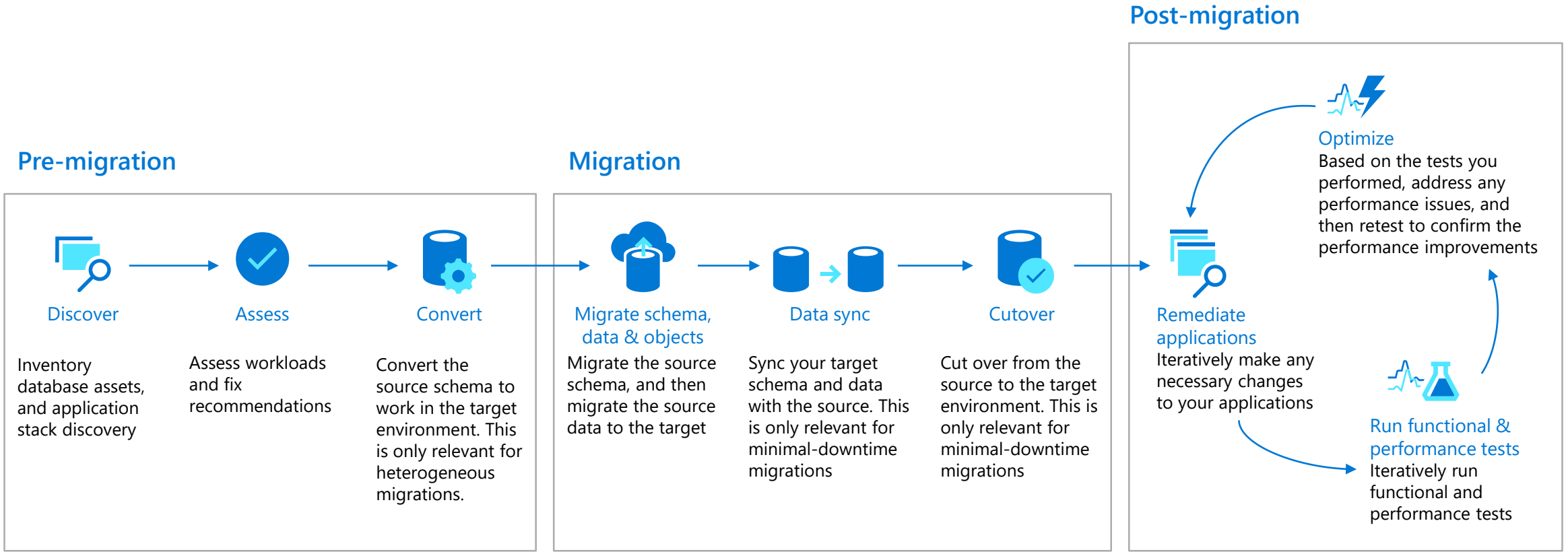


Rehost
(lift and shift)

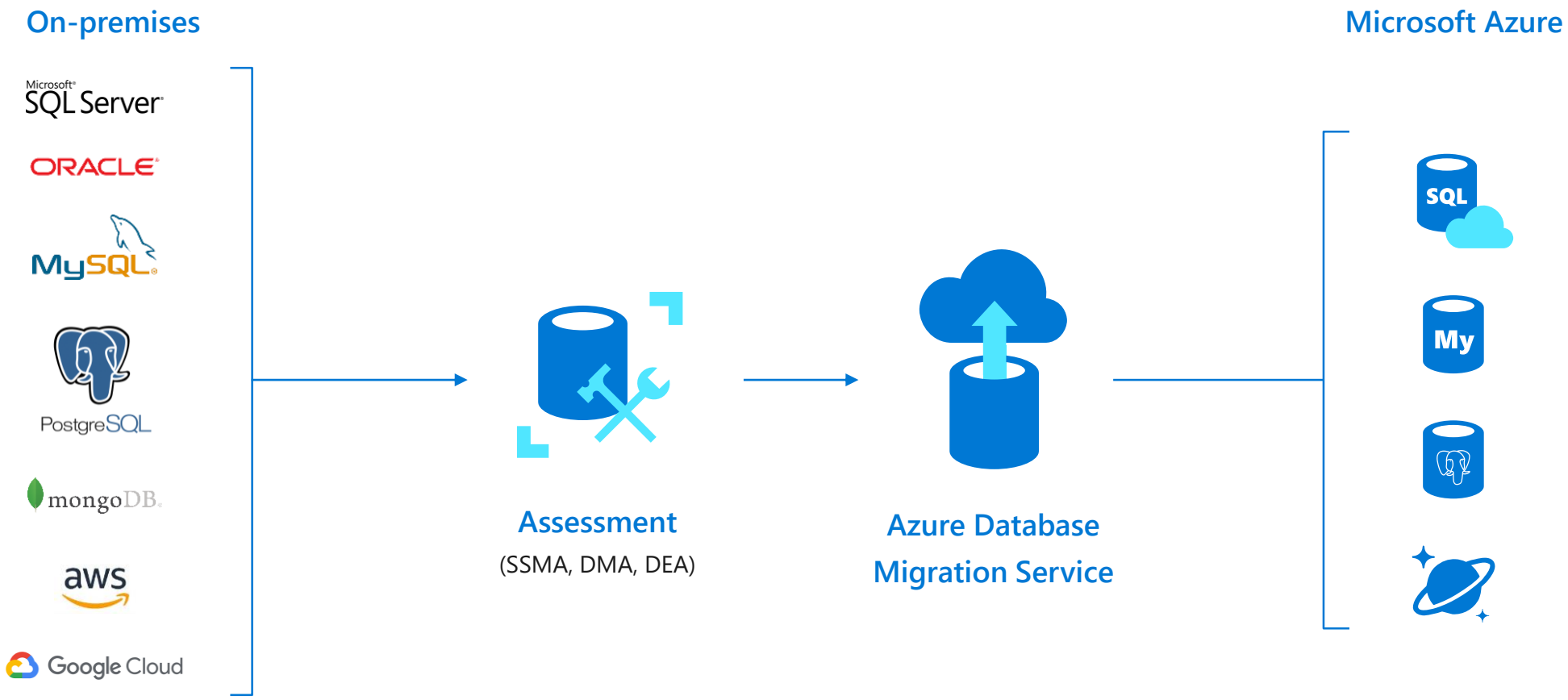


Refactor

Database migration process overview



Tools and services for your migration journey



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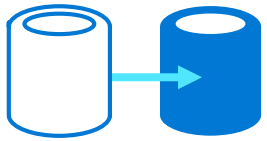
Data Migration Assistant

Azure Database Migration Service

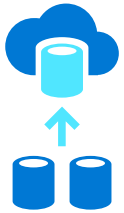
Accelerate your transition to Azure

Homogeneous sources



Heterogeneous sources

Orchestration



Scale migration

Near-zero downtime

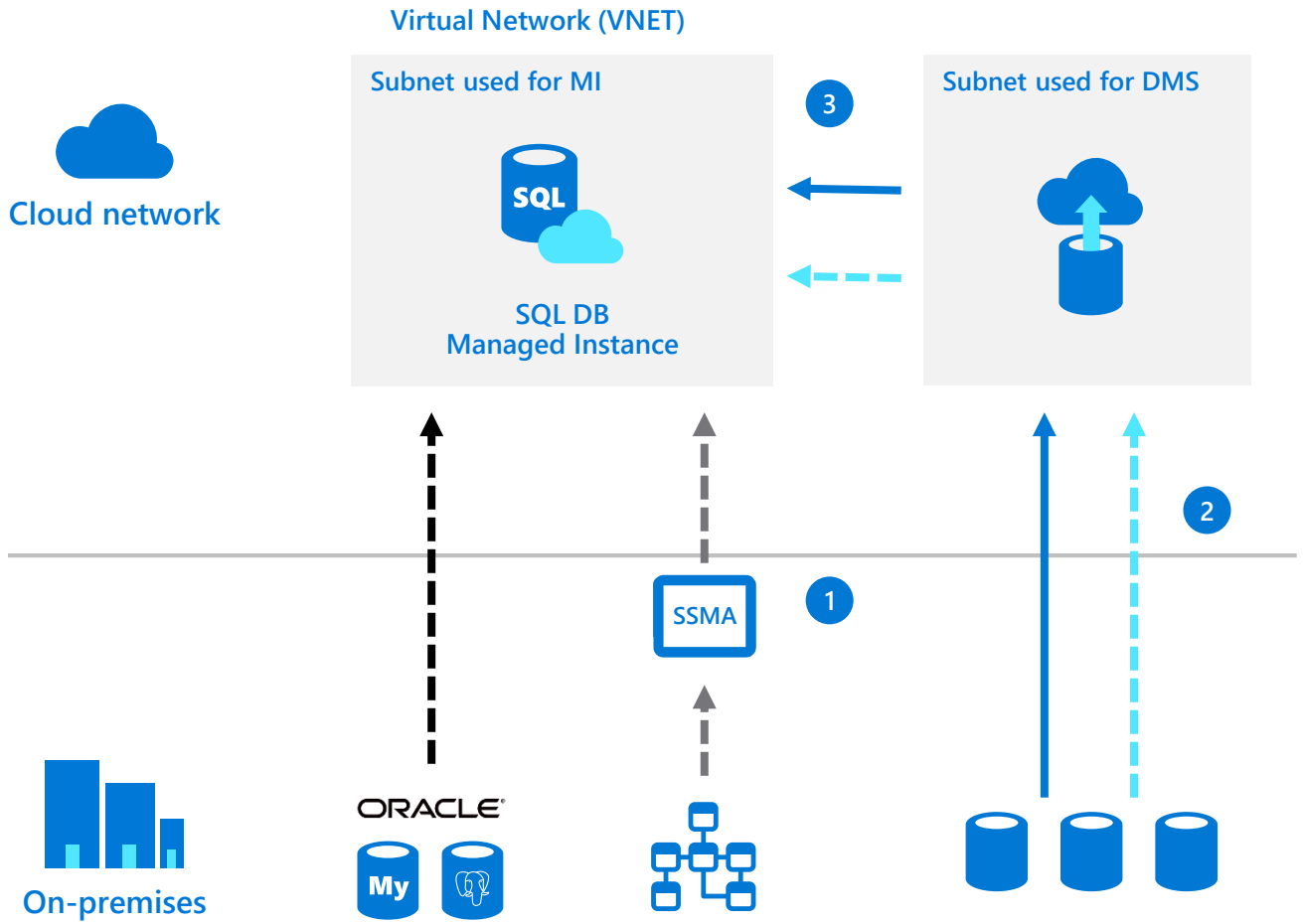
A seamless, end-to-end solution for moving on-premises databases to Azure

Online migration using logical replication

Competitive, MySQL and PostgreSQL migration example

1. Convert database schema using SSMA
2. DMS reads existing data and tracks changes
3. DMS applies all data changes until cutover

Convert schema with SSMA, setup replication through DMS, initiate cutover and change the application connection strings



Legend

- Initial data load
- Incremental data changes
- Site to site connectivity (VPN or ExpressRoute)
- Database schema objects

DEMO

Online migration using logical replication

Online migration with backup and restore technology

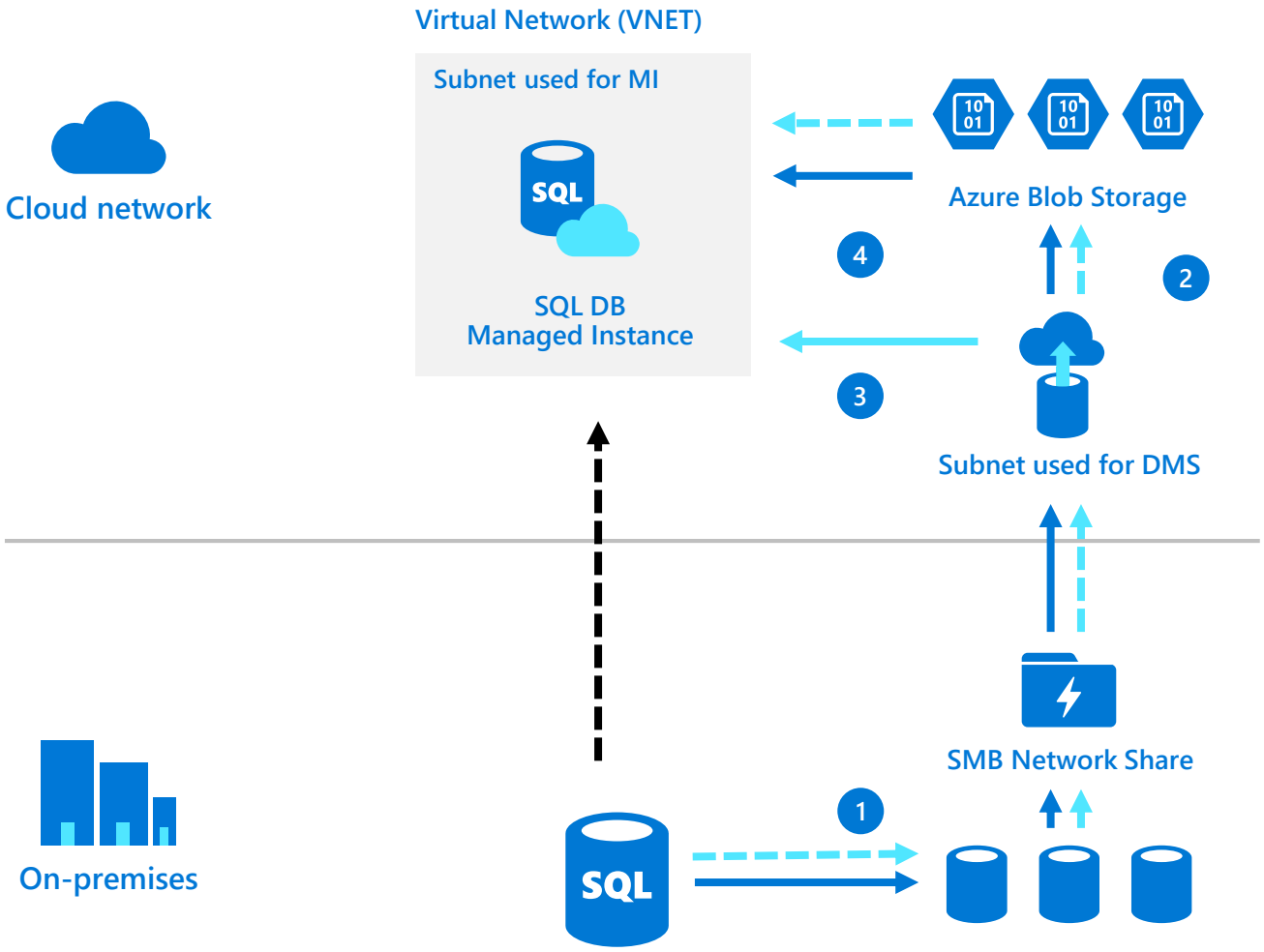
SQL Server to Azure SQL Database Managed Instance example

1. Provide existing backups in network share
2. DMS upload backup files to Azure storage
3. DMS initiate the migration to Managed Instance
4. Full backup restored and Transaction log backups continuously applied until cutover

Stop incoming traffic to source databases, provide Tail-Log backup, initiate cutover in DMS and change the application connection strings

Legend

- Full Database backup files
- Transaction log backup files
- Site to site connectivity (VPN or ExpressRoute)



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Online migration with backup and restore technology

How to start your migration journey

Database migration journey

Assess

- Involve stakeholders
- Calculate your TCO
- Discover and evaluate apps

Migrate

- Select a migration strategy
- Find recommended tools
- Apply the migration strategy

Optimize

- Analyze your costs
- Save with offers
- Reinvest to do more

Secure and manage

- Industry-leading security
- Protect your data
- Monitor cloud health

Start your migration journey today

Assess

Calculate savings with the Azure TCO calculator

Migrate

Use the Azure Database Migration Service and Data Migration Assistant to migrate your on-premises database to Azure

Optimize

Take advantage of offers such as Azure Hybrid Benefit and Azure Reserved Virtual Machine Instances

Secure and manage

Get industry-leading security with Azure Security Center, and protect your data in the cloud with Azure Backup

Resources for migration

Azure migration center
https://azure.microsoft.com/en-us/migration/

Azure Database Migration Guide
https://aka.ms/dmguide

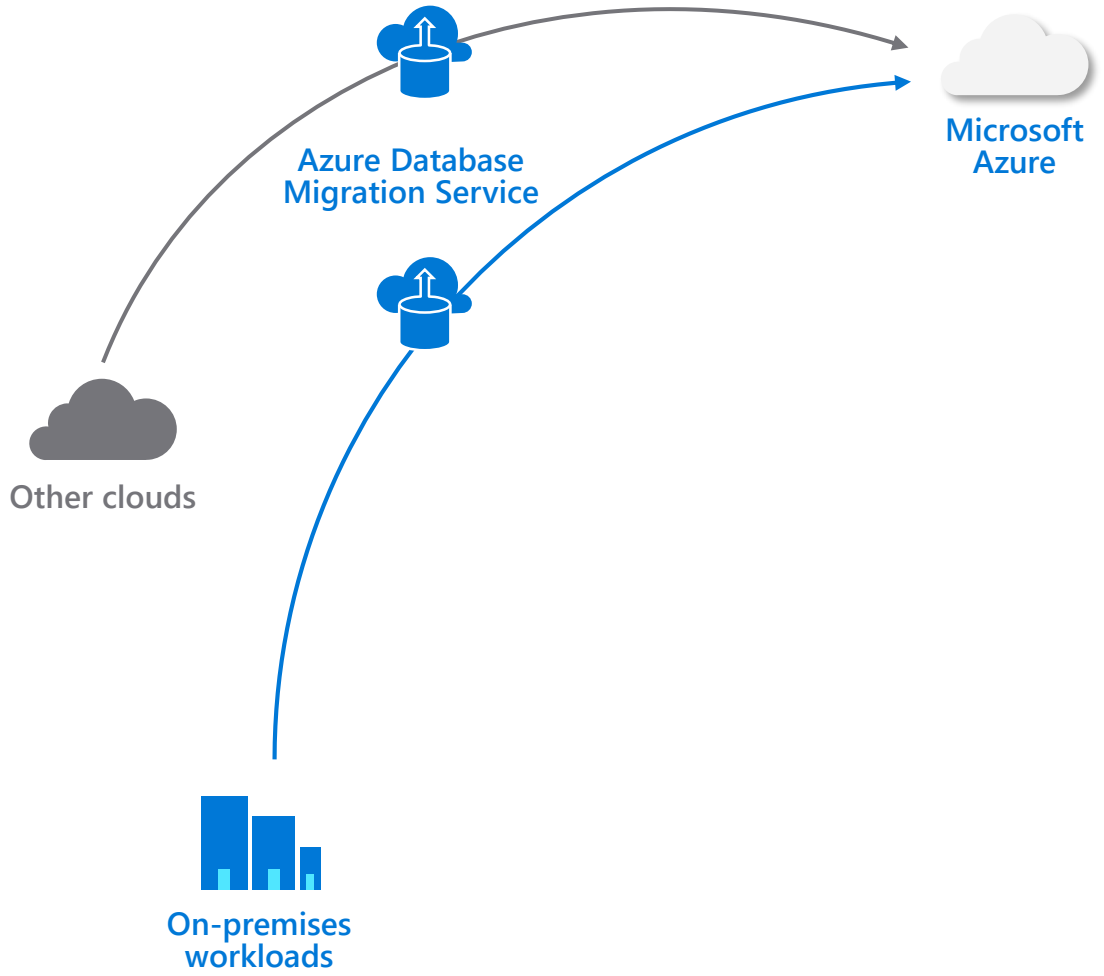
Find a partner: http://migration/Pages/SearchPartners.aspx

Azure Database Migration Service (DMS)
https://aka.ms/get-dms

Azure DMS documentation
https://aka.ms/dms-docs

Demos
- Migrating and modernizing your data estate to Azure with Data Migration Services
- Database migration roadmap with Microsoft

Blog
Data Migration Team Blog



Session Feedback Day 1
(not optional!)

http://bit.ly/DataGrillen2019Day1

Event Feedback
(not optional!)

http://bit.ly/DataGrillen2019Event

Microsoft Azure