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SQL SERVER MIGRATION

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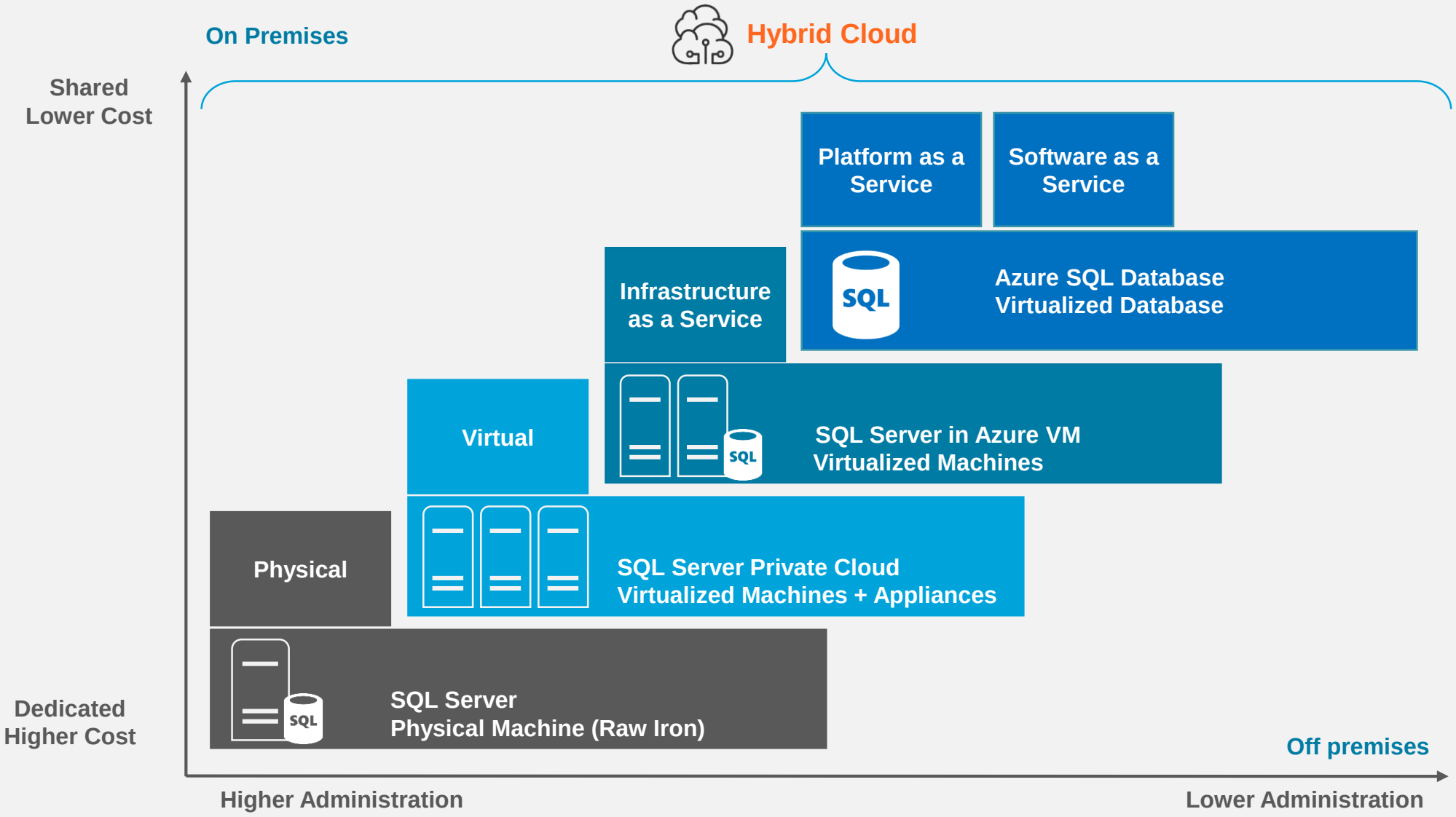
WHY MIGRATE / UPGRADE

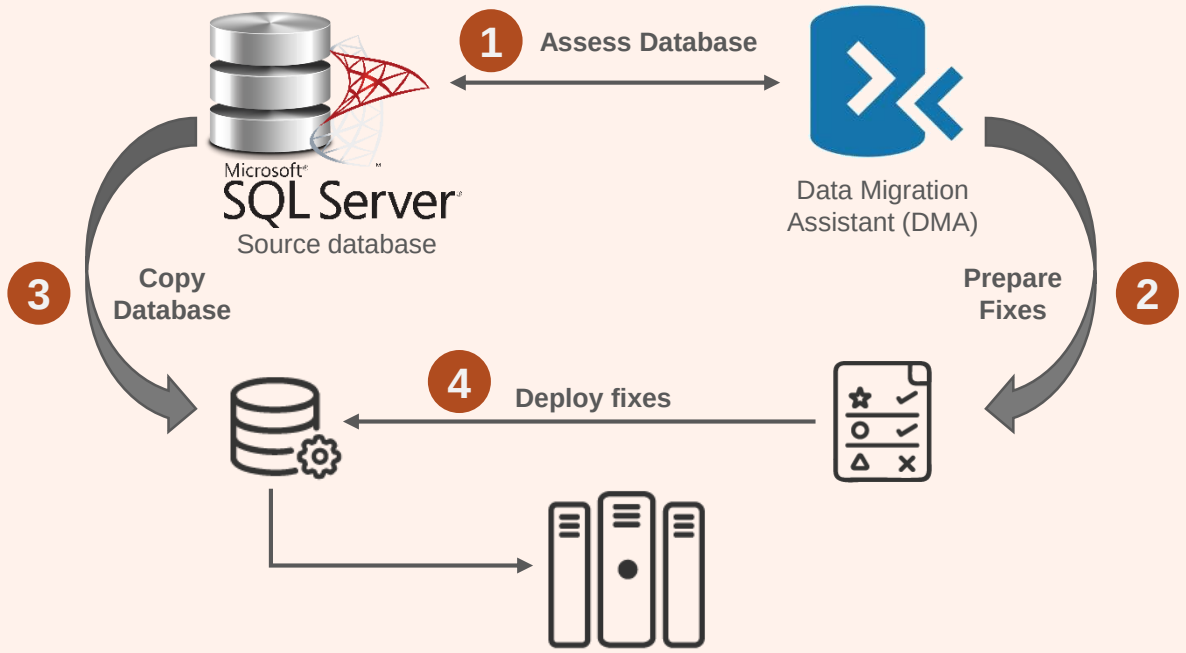
- SQL Server 2008 R2 is going out of extended support by 7/9/2019
- SQL Server 2012 mainstream support ended on 7/11/2017 and extended support will end on 7/12/2022
- SQL Server 2014 mainstream support will end on 7/9/2019 and extended support will end on 7/9/2024
- New cloud enabled SQL Server engine for better performance, security and scalability
- Hybrid cloud using Stretch Databases
- Cross-Platform Compatibility with Windows, Linux, Mac OS and Docker containers
- Run R and Python right from the SQL Server
- Leverage Encryption at rest and in transit along with Dynamic data masking

SQL SERVER COST OPTIMIZATION MODELS

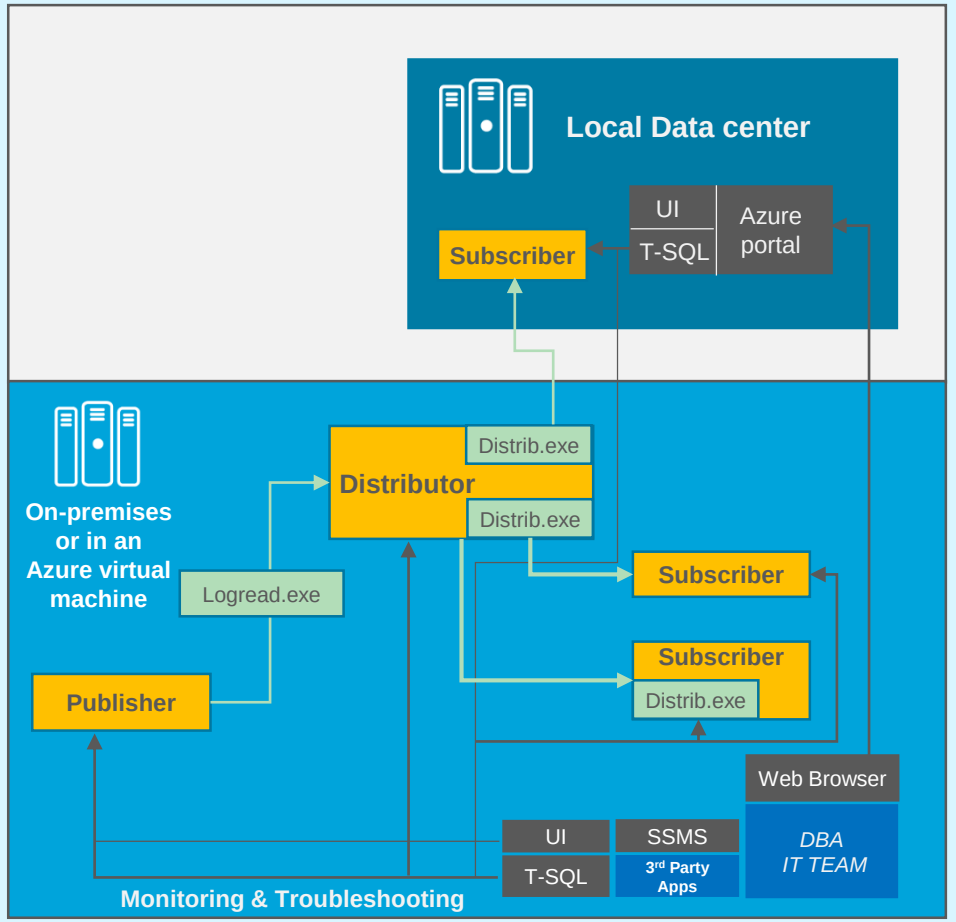


APPROACH 1: MOVE TO ON-PREM SQL 2017

DOWNTIME DURING THE MIGRATION

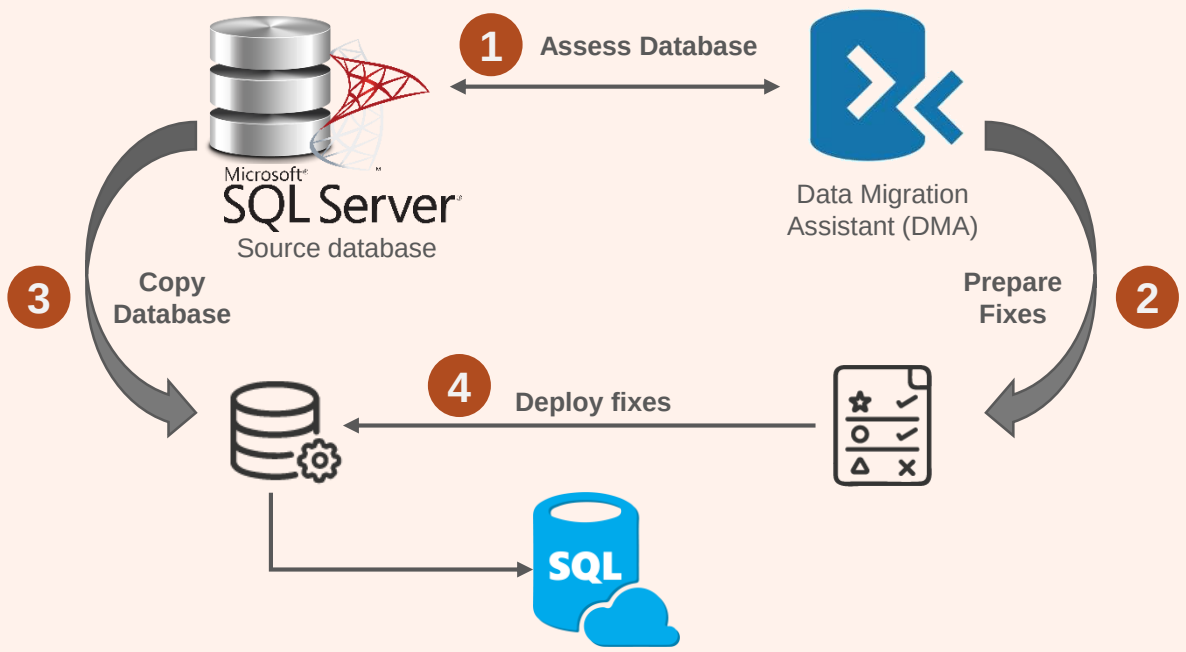


USE TRANSACTIONAL REPLICATION

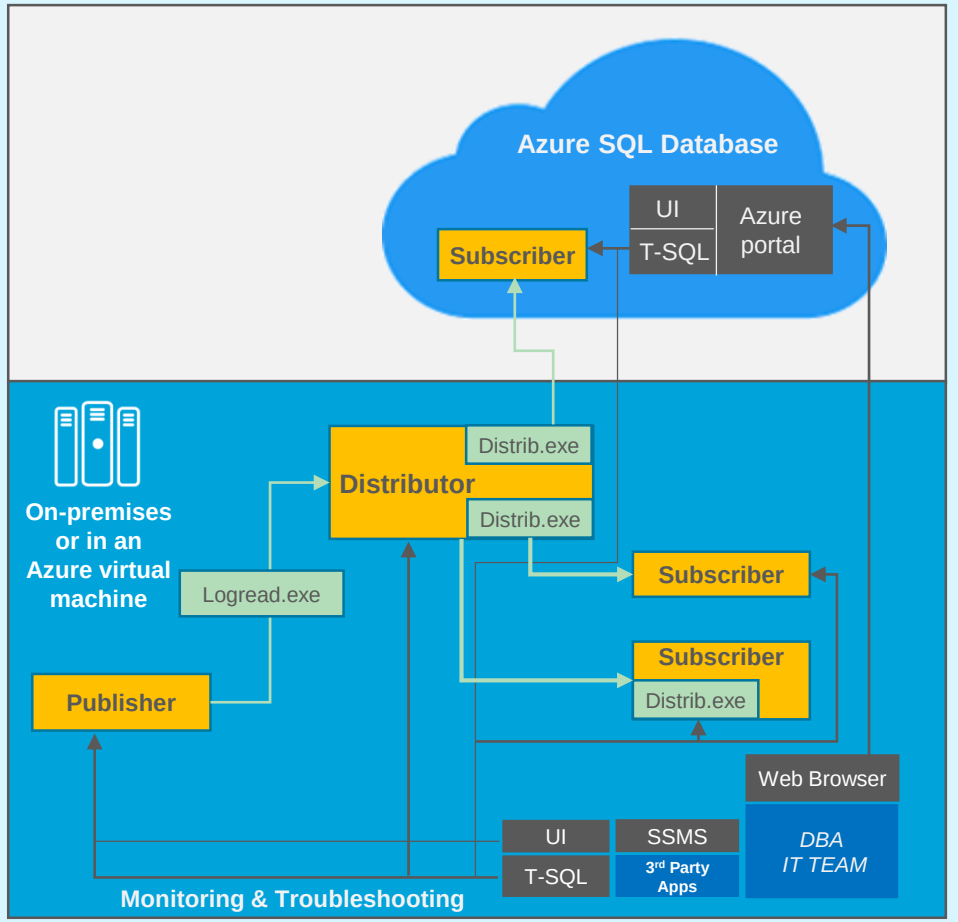


APPROACH 2: SQL SERVER ON AZURE VM

DOWNTIME DURING THE MIGRATION



USE TRANSACTIONAL REPLICATION



WHY USE SQL SERVER ON AZURE VMS?

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1. Configure and manage high availability, disaster recovery, and patching for SQL Server easier than on-premises machines
2. Customized environment with full administrative rights
3. SQL Server instances with up to 64 TB of storage and as many databases as needed
4. Fully supports SQL Server transactional replication, AlwaysOn Availability Groups, Integration Services, Log Shipping to replicate data, and traditional SQL Server backups
5. VMs are great for existing applications that require fast migration to the cloud with minimal changes
6. VMs are well suited for rapid development and test scenarios when you do not want to buy on-premises non-production SQL Server hardware

APPROACH 3: MOVE TO AZURE SQL MANAGED INSTANCE

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Assess Managed Instance capability

- Make sure Managed Instance is compatible with the on-prem database requirements
- Use Data Migration Assistant to detect potential compatibility issues

Select Migration Methods

- Azure Database Migration Service
- Native restore from URL

Monitor Application

- Take performance benchmark before and after the migration
- Setup DB recovery options using point-in-time recovery
- Test backup and restore

WHY USE AZURE SQL DATABASE MANAGED INSTANCE

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1. Isolated environment (single-tenant service with VNET, dedicated compute and storage resources)
2. No patching and version upgrade overhead
3. Monitor, troubleshoot and manage at scale
4. Automatic database tuning and maintenance for predictable performance
5. Adheres to same compliance standards as Azure SQL Database
6. Encryption of the data in transit and rest with customer provided encryption keys
7. Customer configurable backup retention and recovery

UPGRADE TO SQL ON LINUX

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Backup and Restore

- Create Backup
- Transfer backup to Linux machine
- Restore backup

Export Import via SSMA and SQLPackage.exe

- Export DB with SSMS
- Connect to SQL Server on Linux remotely from windows machine
- Import DB with SSMS

WHY UPGRADE TO SQL ON LINUX

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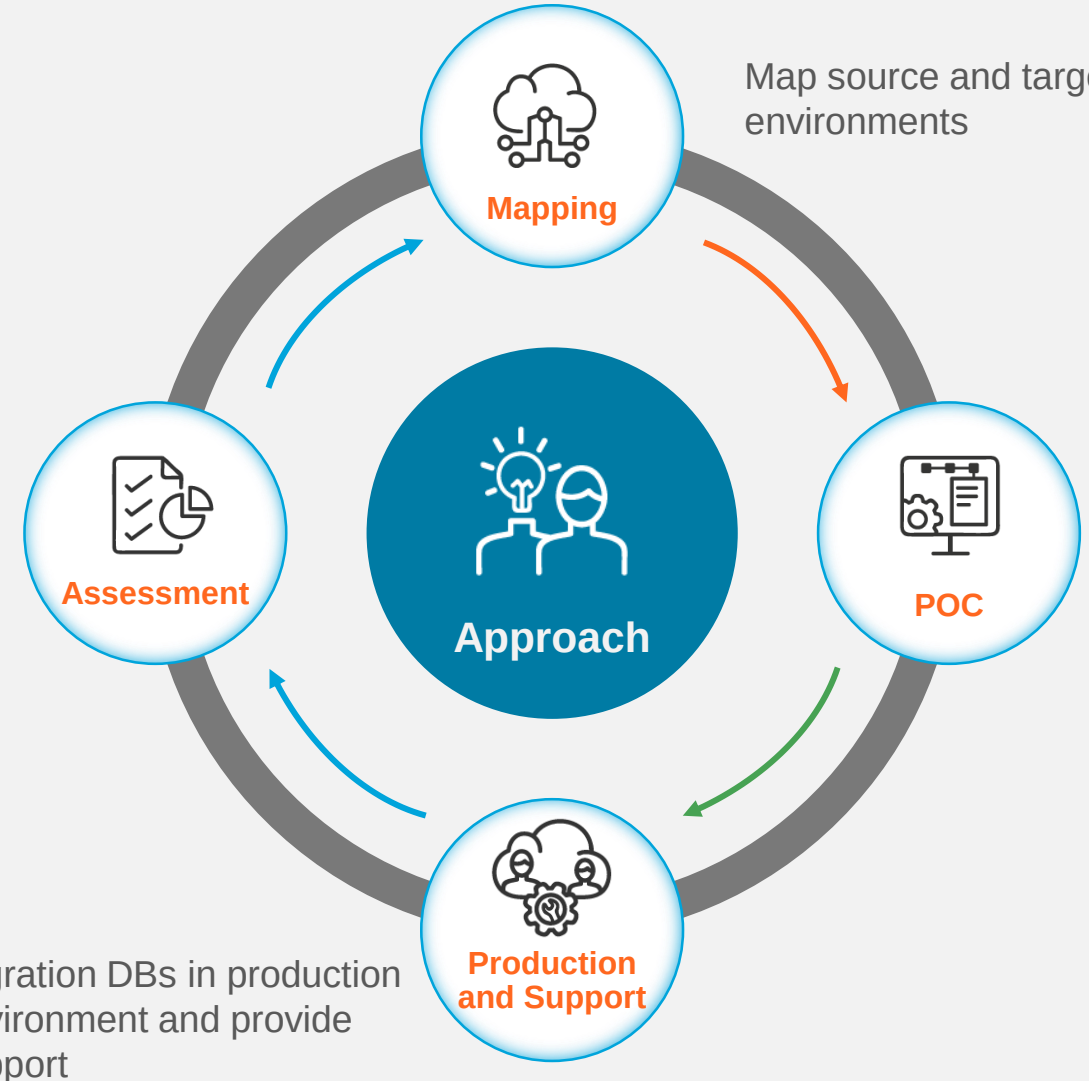
1 No additional licensing cost

2 Opensource friendly

3 No need to change opensource application layer

4 Highly scalable environment using containerization

OUR APPROACH



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Financials

ASSESSMENT PHASE

Assessment Workshops	Duration	Cost
○ Run Microsoft Assessment and Planning (MAP) Toolkit to get inventory of existing database footprint ○ Prepare assessment report ○ Identify and get approval on migration candidate along with their application owners ○ Map database to target environment (on-prem, Azure IaaS, Azure Managed SQL, SQL on Linux) ○ Provide full migration SOW	1 week	$10,000

ASSUMPTIONS & DEPENDENCIES

1	Database with SSAS, SSIS and SSRS functionality is out of scope
2	If migrating to Azure, Azure subscription is already configured and ready to use
3	Customer has purchased all necessary SQL licenses and any 3rd party tool licenses
4	Customer should provide full access to the SQL Database at source and at target
5	Customer team both IT and Business are available for knowledge transfer and acceptance testing
6	Timely access to environment, database administrators and provision of extra storage during migration is readily available.
7	Any onsite travel cost will be separate from the initial estimates
8	Customer is responsible for the database backup configuration

RISKS & MITIGATIONS

TRIANZ WILL NOTIFY CUSTOMER ABOUT ADDITIONAL RISKS AS THEY ARE IDENTIFIED DURING PROGRAM EXECUTION AND WILL MUTUALLY AGREE ON THE MITIGATION STRATEGIES.

RISK	RISK LEVEL	IMPACT	MITIGATION
Lack of clarity on the database and targeted environment may delay the key deliverables	High	○ Additional time will be required to analyze the database, identify the key information architecture and delivery of the reports	○ Work with customer to identify the database prior to the start of the program ○ Collaborate with customer to identify the key success criteria early in the program
Slower connectivity between on-prem data center and Azure data center may add to latency and may reduce over migration timelines	High	○ Impact to overall migration timelines	○ Conduct multiple performance test run under varying network speeds to understand the impact and leverage additional technology solutions such as WAN Accelerators to optimize the connectivity latency
Hard application dependency on the databases may result in application not functioning properly after the migration	High	○ Dependent application may not function as expected	○ Identify the dependencies and finalize the architecture in first 2 weeks of the program ○ Test the architecture in production environment early during UAT phase to mitigate the issues

Q & A AND NEXT STEPS

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THANK YOU