Azure SQL Server Managed Instance



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Agenda

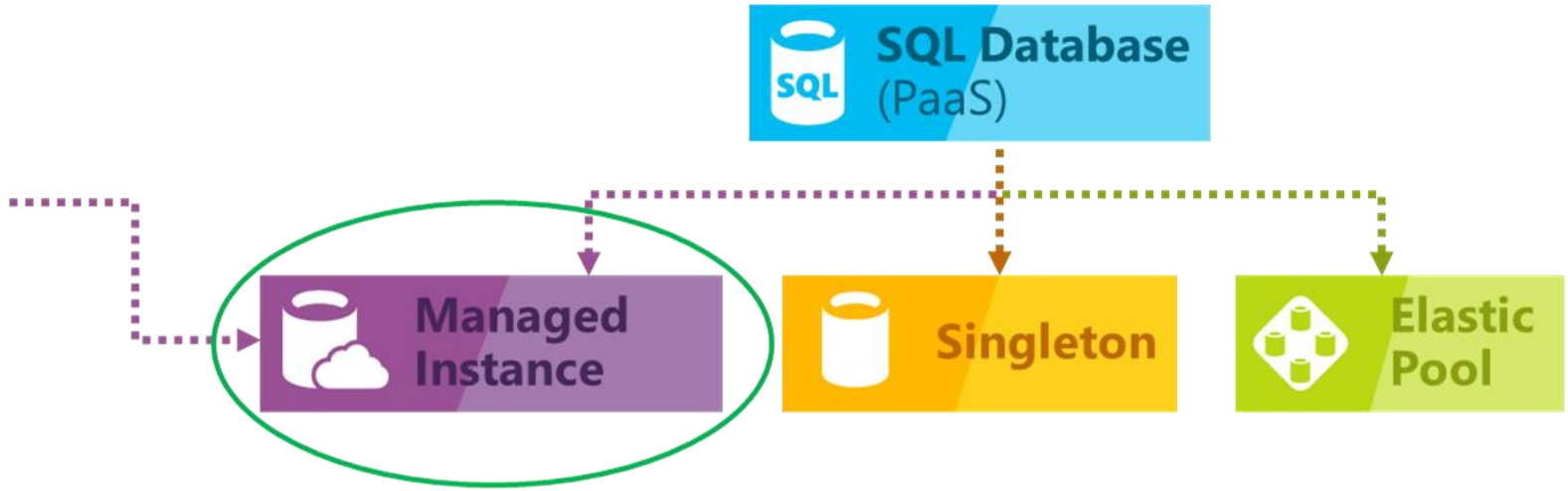
- Introduction
- PaaS and SaaS
- Azure SQL DB
- Azure SQL Database Managed Instance (Preview)
- Migration
- DEMO
- New DBA Role

What is a Managed Instance (preview)

- Azure SQL Database Managed Instance (preview) is a new capability of Azure SQL Database, providing near 100% compatibility with SQL Server on-premises, providing a native virtual network (VNet) implementation that addresses common security concerns, and a business model favorable for on-premises SQL Server customers. Managed Instance allows existing SQL Server customers to lift and shift their on-premises applications to the cloud with minimal application and database changes. At the same time, Managed Instance preserves all PaaS capabilities (automatic patching and version updates, backup, high-availability), that drastically reduces management overhead and TCO.

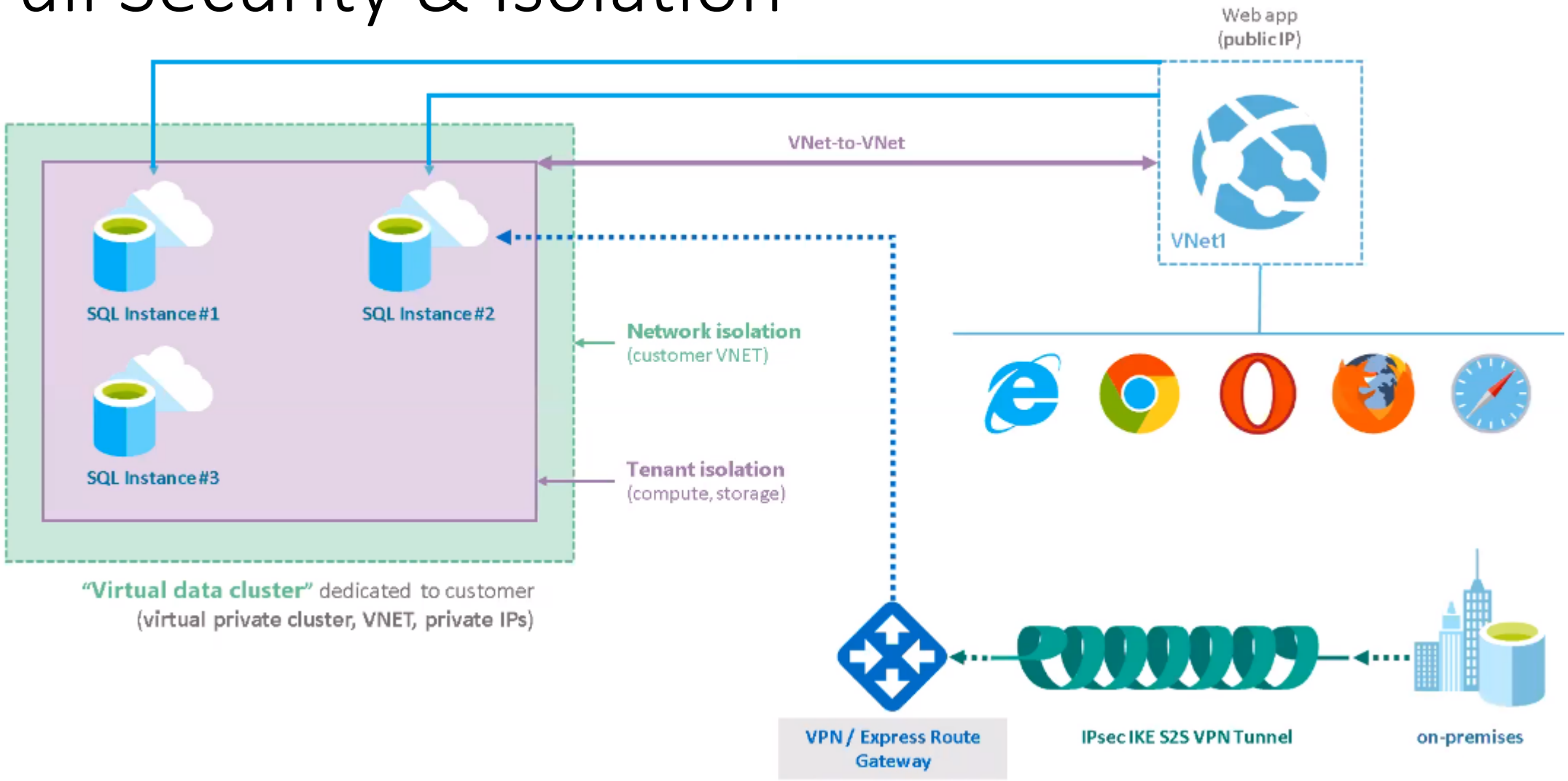
What is SQL Database Managed Instance?

New deployment option that enables frictionless migration for SQL apps and modernization in a fully managed service



Easy lift and shift	Fully managed PaaS	Full isolation and security	New business model
• Fully-fledged SQL instance with nearly 100% compat with on-prem	• Built on the same PaaS service infrastructure • All PaaS features	• Native VNET implementation • Private IP addresses	• Competitive • Transparent • Frictionless

Full Security & Isolation



What is a Managed Instance (preview)

- Managed Instance is envisioned as preferred platform for the following scenarios:
  - SQL Server on-premises / IaaS customers looking to migrate their applications to a fully managed service with minimal design changes.
  - ISVs relying on SQL databases, who want to enable their customers to migrate to the cloud and thus achieve substantial competitive advantage or global market reach.

- By General Availability, Managed Instance aims to deliver close to 100% surface area compatibility with the latest on-premises SQL Server version through a staged release plan.

What is a Managed Instance (preview)

- The following table outlines key differences and envisioned usage scenarios between SQL IaaS, Azure SQL Database, and Managed Instance:

Usage scenario	
Managed Instance	For customers looking to migrate a large number of apps from on-premises or IaaS, self-built, or ISV provided, with as low migration effort as possible, propose Managed Instance. Using the fully automated Data Migration Service (DMS) in Azure, customers can lift and shift their on-premises SQL Server to a Managed Instance that offers compatibility with SQL Server on-premises and complete isolation of customer instances with native VNET support. With Software Assurance, you can exchange their existing licenses for discounted rates on a SQL Database Managed Instance using the Azure Hybrid Use Benefit for SQL Server. SQL Database Managed Instance is the best migration destination in the cloud for SQL Server instances that require high security and a rich programmability surface.
Azure SQL Database	•For customers developing new SaaS multi-tenant applications or intentionally transforming their existing on-premises apps into a SaaS multitenant app, propose elastic pools. Benefits of this model are: Conversion of the business model from selling licenses to selling service subscriptions (for ISVs) •Easy and bullet-proof tenant isolation •A simplified database-centric programming model •The potential to scale out without hitting a hard ceiling •For customers developing new apps other than SaaS multi-tenant, whose workload is stable and predictable, propose single databases. Benefits of this model are:A simplified database-centric programming model •Predictable performance for each database
SQL IaaS	For customers needing to customize the operating system or the database server, as well as customers having specific requirements in terms of running third-party apps by side with SQL Server (on the same VM), propose SQL VMs / IaaS as the optimal solution

How to programmatically identify a Managed Instance

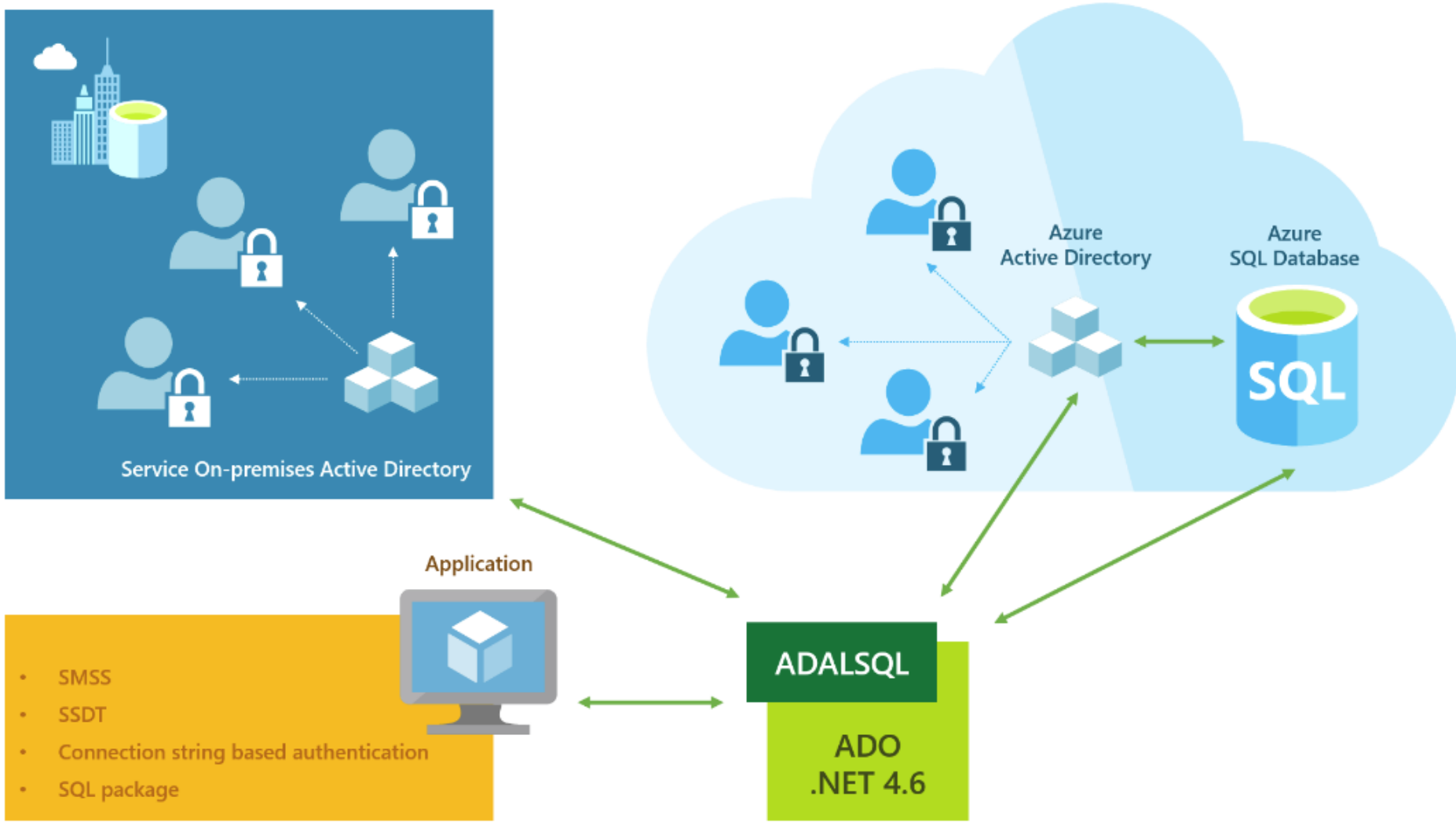
- The following table shows several properties, accessible through Transact SQL, that you can use to detect that your application is working with Managed Instance and retrieve important properties.

Property	Value	Comment
@@VERSION	Microsoft SQL Azure (RTM) - 12.0.2000.8 2018-03-07 Copyright (C) 2018 Microsoft Corporation.	This value is same as in SQL Database.
SERVERPROPERTY ('Edition')	SQL Azure	This value is same as in SQL Database.
SERVERPROPERTY('EngineEdition')	8	This value uniquely identifies Managed Instance.
@@SERVERNAME, SERVERPROPERTY ('ServerName')	Full instance DNS name in the following format:..database.windows.net, where is name provided by the customer, while is auto-generated part of the name guaranteeing global DNS name uniqueness (“wcus17662feb9ce98”, for example)	Example: my-managed-instance.wcus17662feb9ce98.database.windows.net

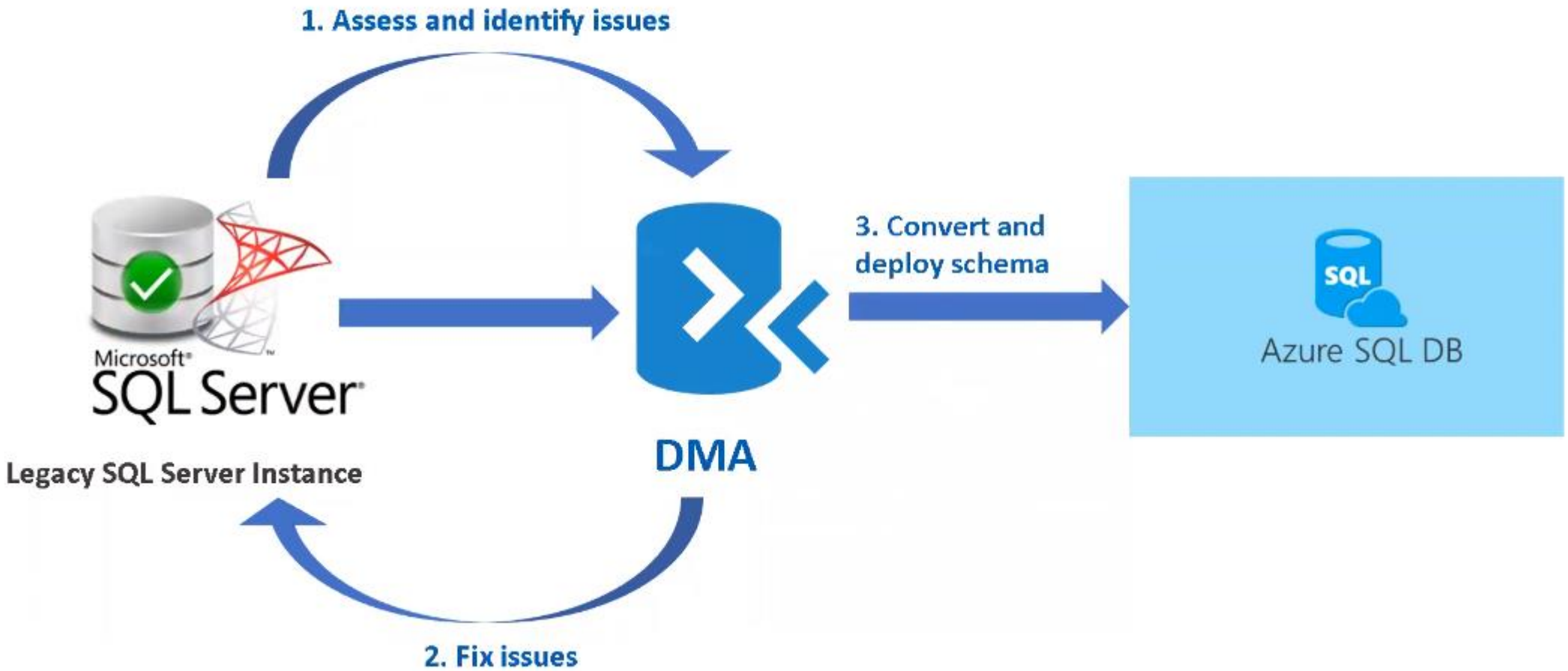
Key features and capabilities of a Managed Instance

PaaS benefits	**Business continuity**
No hardware purchasing and management No management overhead for managing underlying infrastructure Quick provisioning and service scaling Automated patching and version upgrade Integration with other PaaS data services	99.99% uptime SLA Built in high availability Data protected with automated backups Customer configurable backup retention period (fixed to 7 days in Public Preview) User-initiated backups Point in time database restore capability
Security and compliance	**Management**
Isolated environment (VNet integration, single-tenant service, dedicated compute and storage Encryption of the data in transit Azure AD authentication, single sign-on support Adheres to compliance standards same as Azure SQL database SQL auditing Threat detection	Azure Resource Manager API for automating service provisioning and scaling Azure portal functionality for manual service provisioning and scaling Data Migration Service

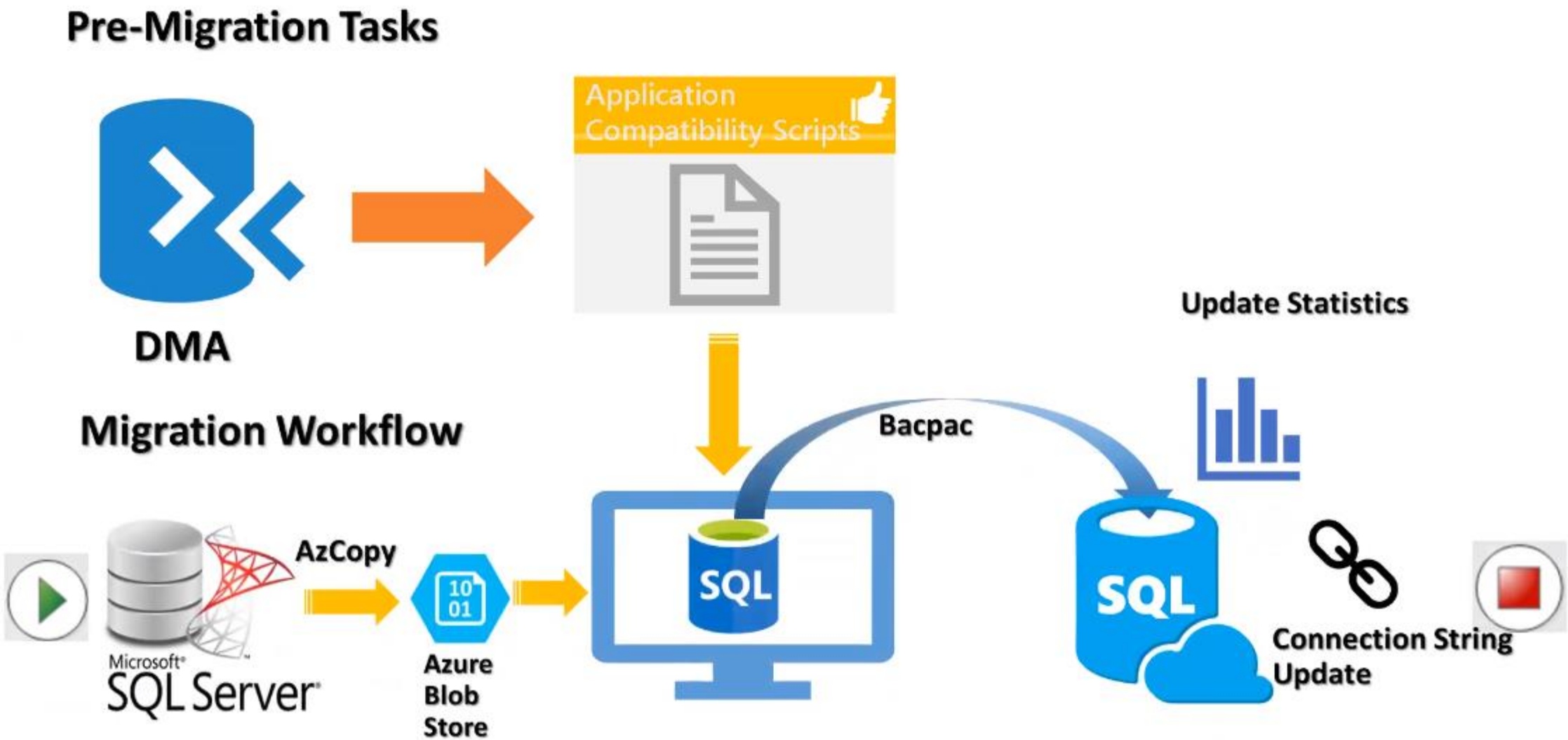
What is a Managed Instance (preview)



Assess and Convert



Migration Workflow



Migration Tools & Services





Data Migration Assistant

Rich assessments at scale

Feature recommendations

Schema conversions



Azure Database Migration Service

MS and non-MS source support

Built for scale and reliability

Built with enterprise security and privacy

DEMO

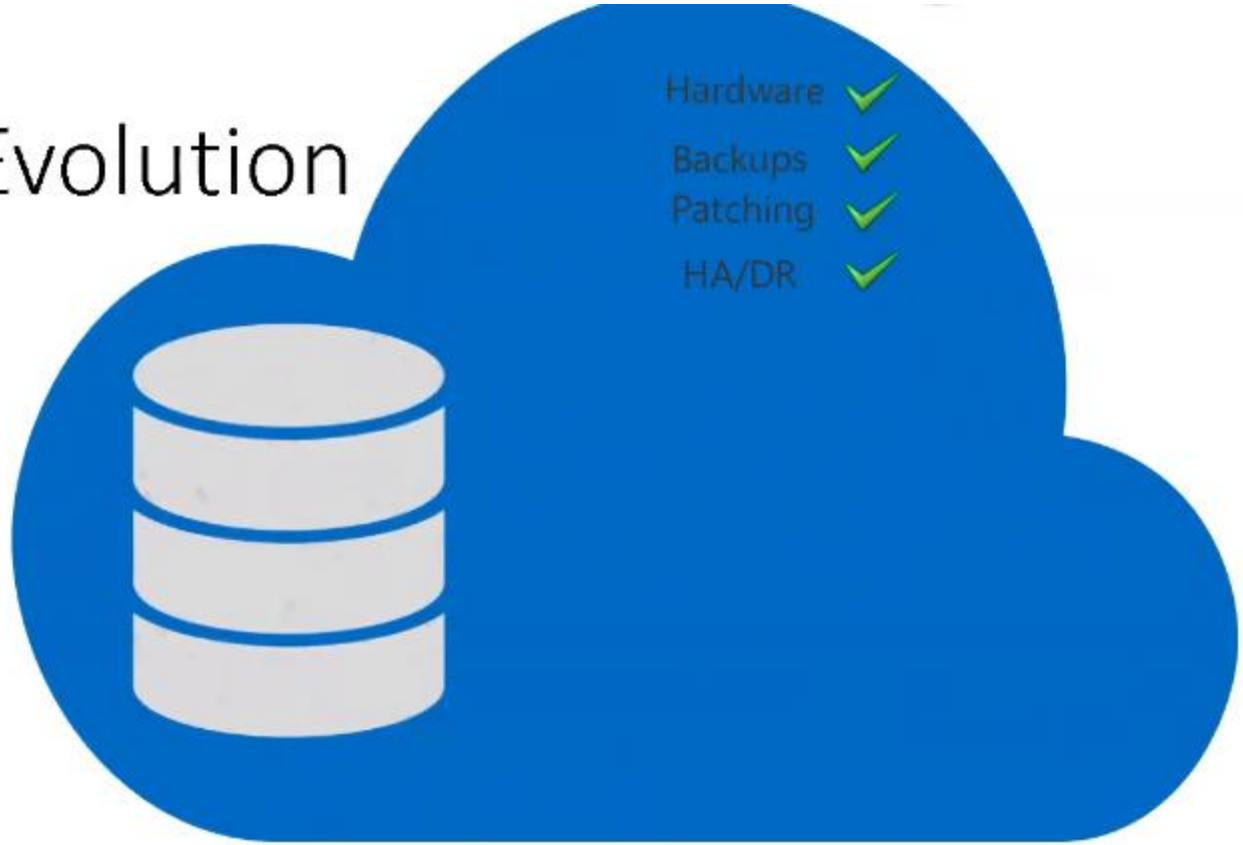
- Recording

Database as a Service Evolution



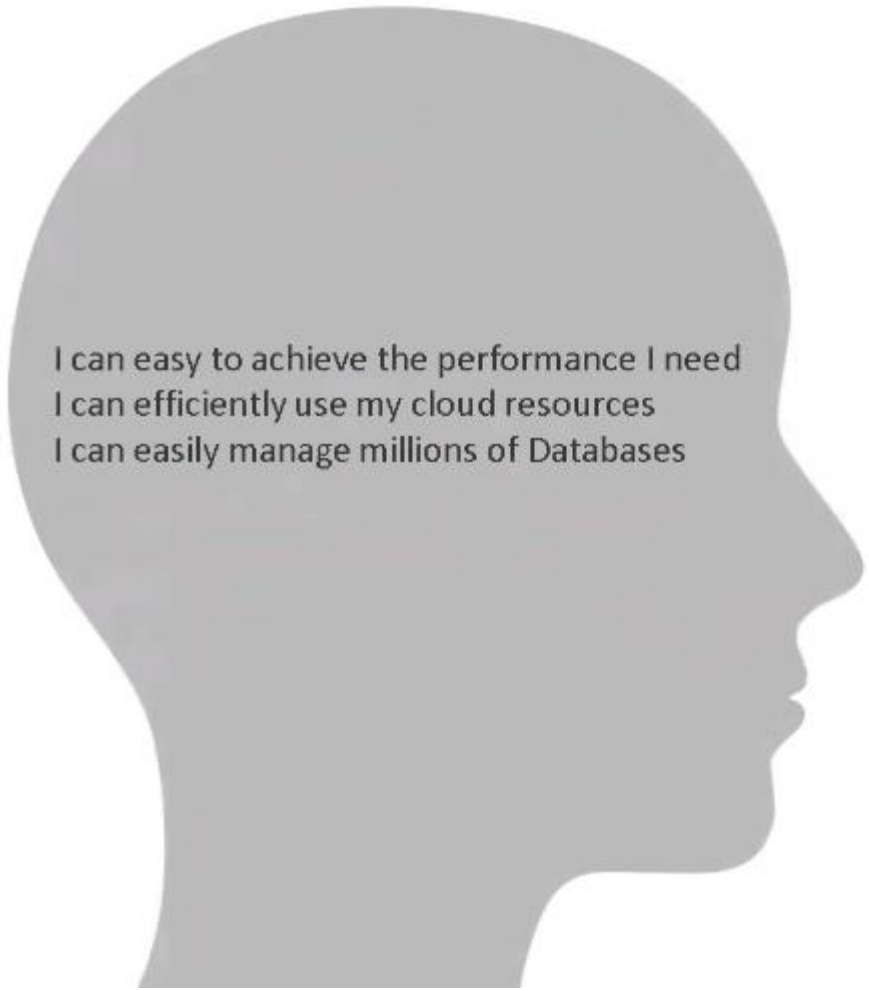
Database as a Service Evolution

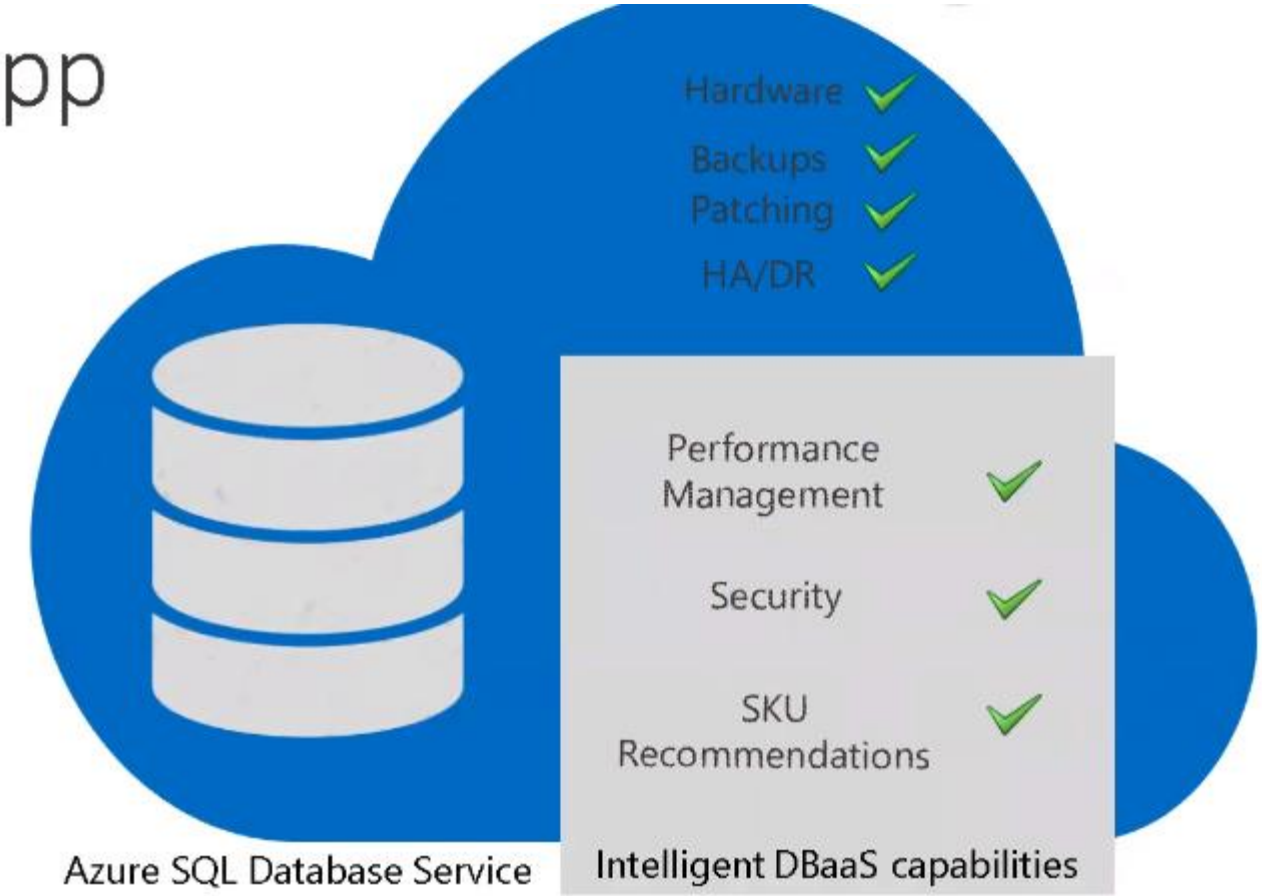




Azure SQL Database Service

Dev can focus on the app

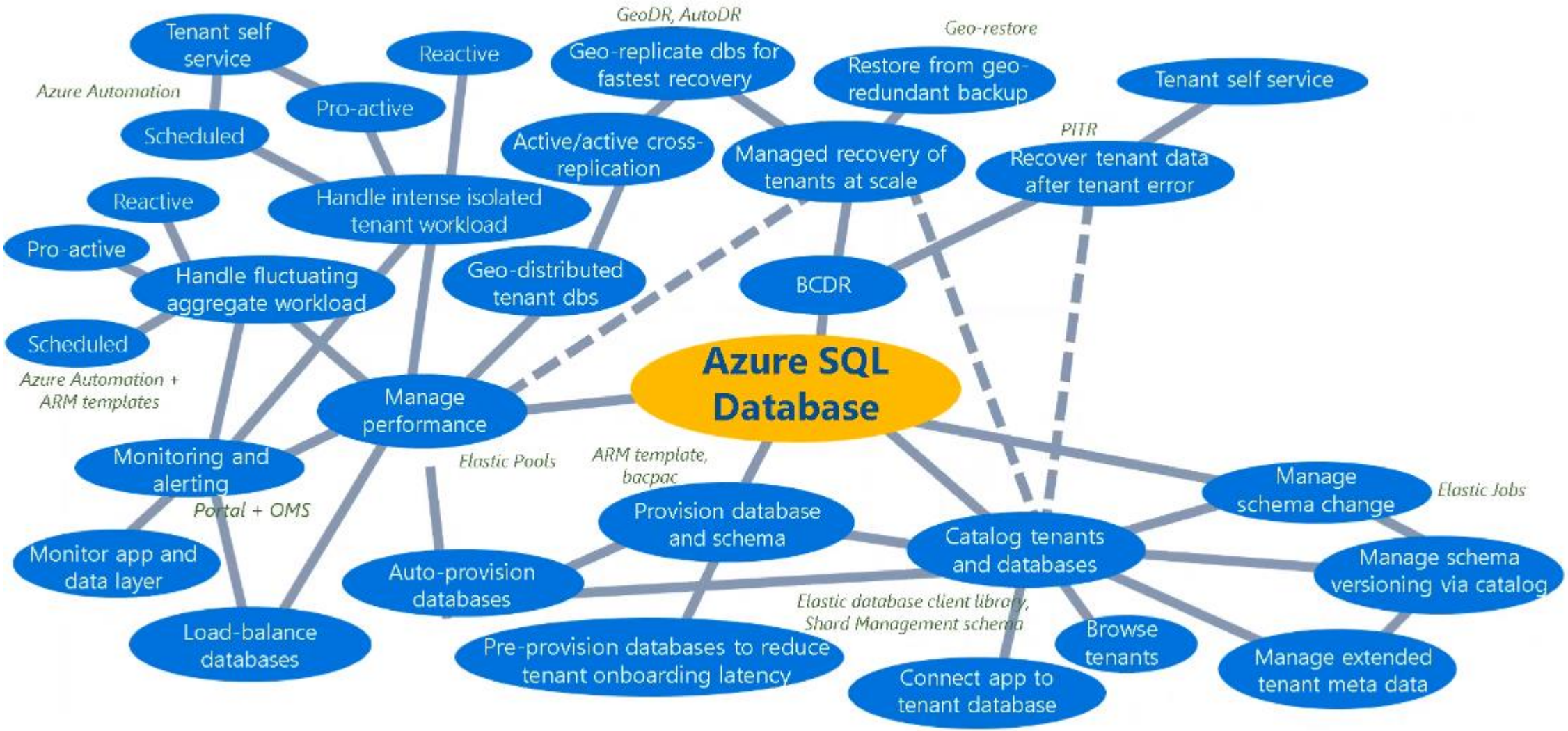




DBaaS v2.0 - Intelligent Database Service

- Platform manages all aspects of running and tuning the DB

Integration with Azure Ecosystem



Choosing the right data platform for your workload

