

Simplified Oracle Database Migration to PostgreSQL on Azure



Abstract

Migrating Oracle database to PostgreSQL on Microsoft Azure signifies a pivotal shift towards a more agile and cost-effective structure. Customer face grappling challenges with on-premises Oracle databases. These hurdles range from exorbitant licensing costs to complex authentication systems, and hinder developers' ability to seamlessly integrate Oracle component simply by including the header file in the project. Further, the formidable tasks of rolling out updates, upgrades, security patches, monitoring, troubleshoot and manage at scale reduces efficiency.

TechM enables the migration of Oracle databases to PostgreSQL Azure using Azure native pathways and/or alternate pathways with EDB Postgres Advanced Server (EPAS) on Azure cloud.

Introduction

PostgreSQL, apart from being an open-source software (OSS) database, is highly compatible with Oracle with reduced migration effort/cost and risks. It can Integrate with Azure services with streamlined provisioning and management experience for common OSS frameworks and languages.

Besides the migration of Oracle databases to PostgreSQL on Azure cloud can reduce the overall cost of ownership significantly.

The objective of this solution is to provide a direct Azure native pathway of Oracle database migration to PostgreSQL and an alternate pathway of EDB Postgres Advanced Server on Azure cloud. While the direct Azure native pathway provides a more cost optimized solution, the EDB Postgres Advanced Server on Azure is an enhanced form with inclusion of many enterprise-class features, improved security controls and is lot more convenient for the Oracle developers and DBAs to adopt.

Besides the overall Oracle DB migration process is more convenient and faster with EDB Postgres Advanced Server (EPAS) when compared to Ora2PG for Azure native PostgreSQL.

Our Solution

Tech Mahindra is a certified cloud adoption framework (CAF) ready partner, and our Azure cloud offerings are aligned to CAF.



Our portfolio of services includes C-A-D-I-M-S



Consulting, strategy, advisory



Database assessment, design



Deployment and configuration



Data migration and database modernization



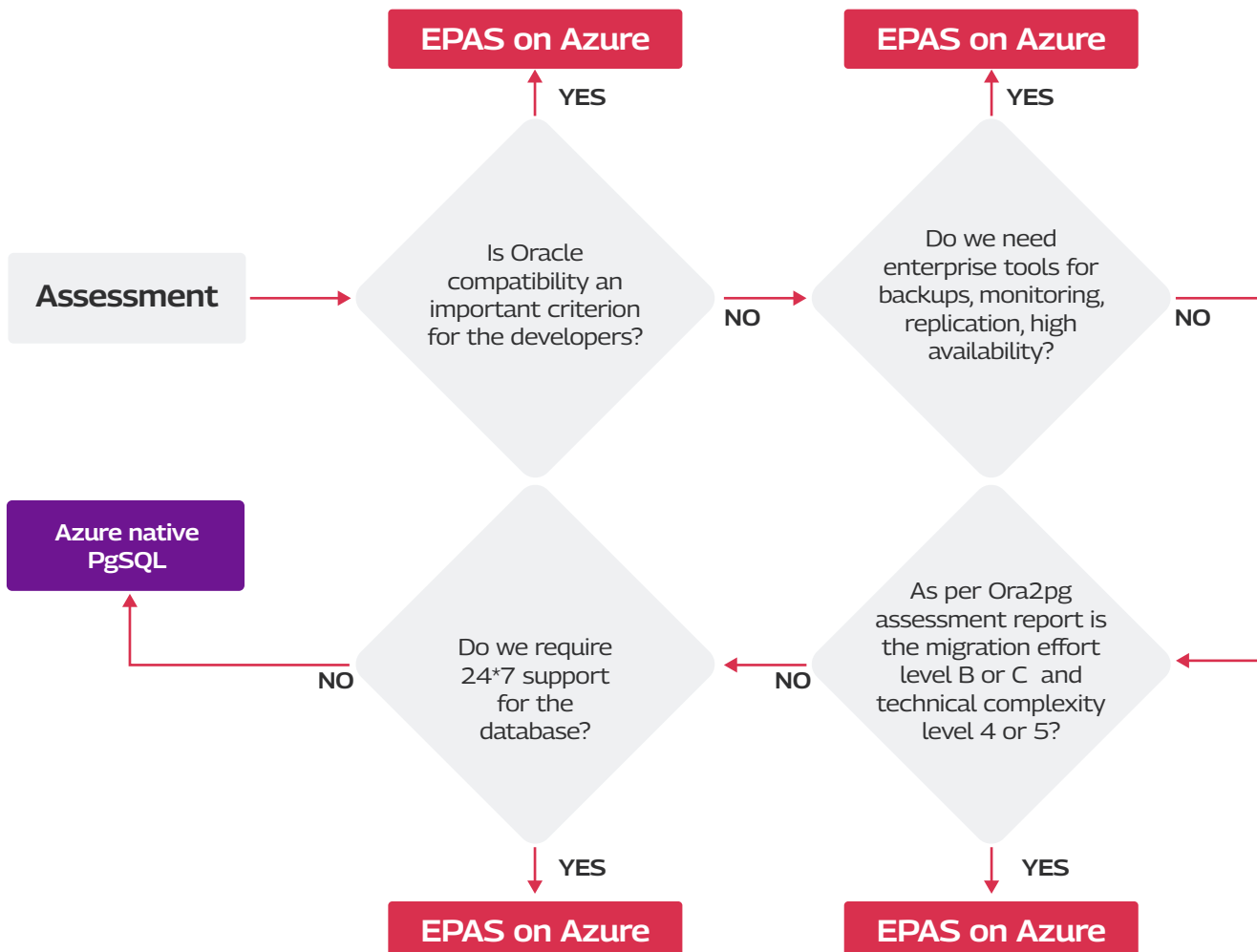
Managed services



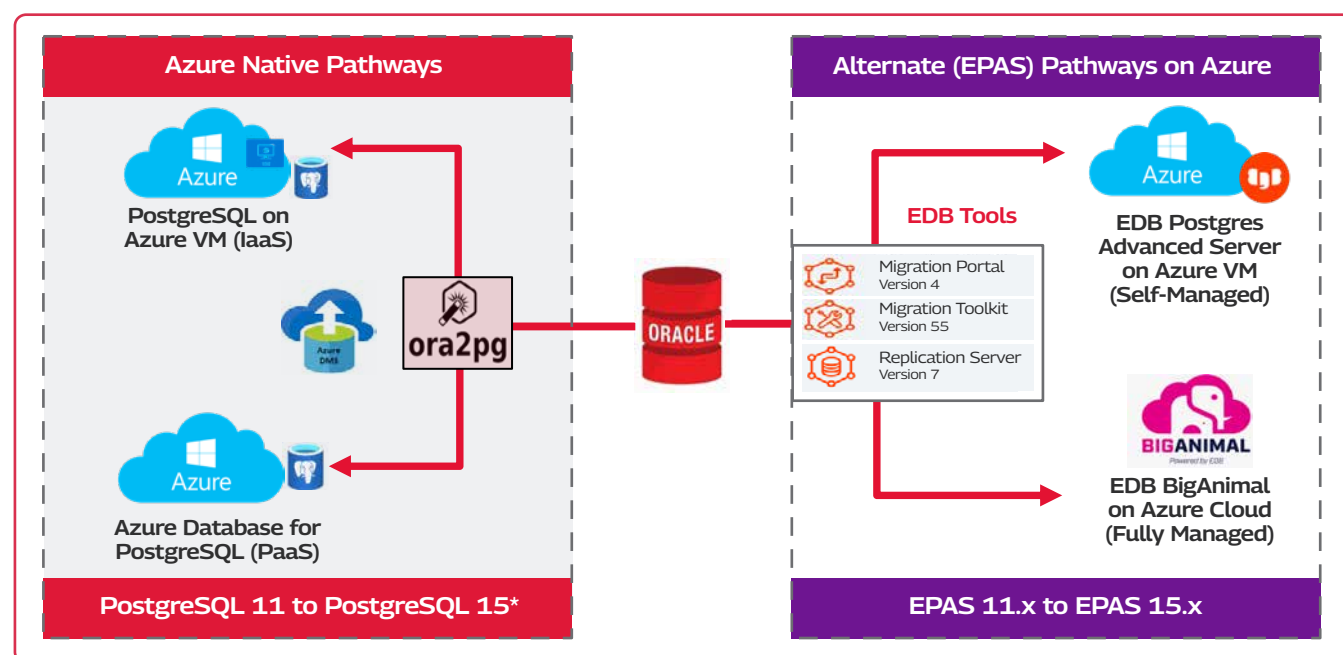
Solution Roadmap

PostgreSQL Migration Pathways on Azure	
Azure Native PostgreSQL (IaaS or PaaS)	EDB Postgres Advanced Server on Azure cloud (self-managed or fully managed)
<ul style="list-style-type: none"> ▶ Built on open-source PostgreSQL. ▶ Lacks support for many Oracle-compatible features, e.g., Pro*C, bulk data loader, PL/SQL debugger ▶ Difficult for Oracle developers/DBAs to adopt. ▶ Limited security features. ▶ Self-supported database. No vendor technical support available. 	<ul style="list-style-type: none"> ▶ Built on open-source PostgreSQL, but enhanced with the addition of many enterprise-class features and tools. ▶ All these and most other Oracle compatible features are supported. ▶ Easy for Oracle developers/DBAs to adopt since it understands and executes Oracle's PL/SQL commands natively without performance issues and without difficult-to-debug emulation. ▶ Many enhanced security features, e.g., row level security, SQL injection protection, and data redaction/dynamic data masking. ▶ 24/7 technical support is available for the database.

Decision Tree



TechM's Migration Approach - Oracle to PostgreSQL on Azure



* PostgreSQL 15 is under public preview for Azure database for PostgreSQL flexible server

Database Managed Services

Tech Mahindra will follow ITIL best practices for providing managed services for database management. The support is split in to three categories the level 1, level 2, and level 3 based on the nature of the support needed.

Engagement Model

Dedicated Model	Shared Model	Hybrid Model	Instance Based
Controlled / Customized	Standardized / Optimized	Best of Both Worlds	Based on number of database instances

Innovative Service Levels with Industry Leading SLA's *

Service Levels	Gold Service (Prod Env)			Silver Service (Prod + Non-Prod Env)			Bronze Service (Test /PoV Env)		
SLA	99.95%			99.7%			99.5%		
Severity#	Service Hours	Response Time	Resolution Time	Service Hours	Response Time	Resolution Time	Service Hours	Response Time	Resolution Time
Sev-1	24 * 7	30 Mins*	2 Hrs	24 * 7	60 Mins*	3 Hrs	08:00 * 18:00 M-F	2 Hrs	8 Hrs
Sev-2	24 * 7	60 Mins*	4 Hrs	24 * 7	90 Mins*	5 Hrs	08:00 * 18:00 M-F	4 Hrs	1 Biz day
Sev-3	08:00 * 18:00 M-F	2 Hrs	8 Hrs	08:00 * 18:00 M-F	3 Hrs	8 Hrs	08:00 * 18:00 M-F	6 Hrs	2 Biz days

*Indicative SLA's to be customized in discussion with delivery team as per the requirement and based on architectural recommendations provided by Tech Mahindra to achieve SLA's.

Benefits

- ▶ PostgreSQL is highly compatible with Oracle with reduced migration effort/cost and risks.
- ▶ Manage community version with automatic updates, security fixes and new feature updates.
- ▶ Oracle to Azure database for PostgreSQL migration reduces overall cost of ownership

Common use cases for PostgreSQL on Azure

Use Case	Tech Mahindra Accelerators and Differentiators
Simplified Oracle migration to Azure	<p>The ora2pg tool (a free utility) is widely used for Azure native PostgreSQL migrations. Besides licensed products like Cortex (https://www.splendiddata.com/cortex/) offer highly automated migration with greater efficiency, quality, and speed.</p> <p>In case of Oracle to EDB Postgres Advanced server (EPAS) on Azure, the EDB migration portals and EDB Migration toolkit are used for the migration.</p>
Reduce costs and boost productivity	<p>Migrating Oracle workloads to PostgreSQL on Azure in either form (Azure Native or EPAS on Azure) can yield significant savings over time. This is attributed to elimination of costly Oracle licenses plus the hardware, storage, and network costs associated with on-premises deployments.</p>
Maintain Oracle application compatibility	<p>EDB Postgres Advanced Server on Azure cloud exhibits very high Oracle compatibility. Support for Pro*C, bulk data loader, PL/SQL debugger and many other Oracle compatible features make it very convenient and easily adoptable for Oracle developers and DBAs.</p>
Optimize the PostgreSQL DB with a 99.99 percent SLA	<p>Azure database for PostgreSQL offers built-in high availability, elastic scaling for performance and industry-leading security and compliance, with an SLA of 99.99 percent. Similarly, EPAS on Azure offers high availability that enables 99.99% availability requirements.</p>

The NXT.NOW™ Advantage

Rated as **'Leader'** by leading analysts in the cloud space, Tech Mahindra has successfully implemented large scale Azure transformational deals using our agile-based migration delivery methodology resulting in **3X faster business adoption**.

With experienced consultants in the team, Tech Mahindra can help the customers in the assessment of their existing Oracle environment, selection of the right target PostgreSQL pathway in Azure and migration.

Tech Mahindra has participated in multiple large-scale migrations of Oracle to EDB Postgres advanced server. A longtime partnership with EDB would mean TechM is not just more experienced but also well equipped to handle the Oracle migration to EDB Postgres advanced server on Azure.



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