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DATABASE MIGRATION:  
AHANA REDUCED COSTS AND  
IMPROVED EFFICIENCY BY  
**MIGRATING ON-PREM ORACLE  
TO POSTGRESQL ON-CLOUD**



In today's business world, the ability to adapt swiftly and efficiently is paramount. Migrating databases, especially legacy ones confined to costly on-premises data centres, is a complex challenge. However, with the advent of digital transformation, businesses must modernize their database management systems to stay competitive. Database management systems (DBMS) are the backbone of modern-day businesses, efficiently storing and organizing vast volumes of data. Oracle and PostgreSQL, two of the most popular DBMS systems, offer distinct advantages.

While Oracle has dominated for decades, PostgreSQL has emerged as a competitive, cost-effective, and feature-rich alternative, enabling significant cost savings and simplified cloud deployment. In this case study, we delve into how Ahana expertly guided a client through the challenging process of migrating their Oracle database to PostgreSQL.

## Client Profile:

Our client is a prominent German logistics company, a subsidiary of the DHL Group, a market leader in parcel services in Europe and Germany. They provide courier, package delivery, and express mail services, delivering more than 1.8 billion parcels annually. With an impressive annual turnover of EUR 1.5 billion, our client proudly ranks among the Fortune 500 companies.

## Challenges:

Transitioning a mission-critical system presents inherent complexities and uncertainties presenting the following hurdles.

- **Risky proposition:** Migrating a running high-critical system is inherently precarious, with numerous uncertainties and grey areas to contend with.
- **Effort and impact analysis:** A detailed analysis was essential to gauge the magnitude of effort required and assess potential functional and performance impacts.
- **System discrepancies:** A thorough comparison between Oracle and PostgreSQL revealed variances, highlighting overlaps and exclusions in areas such as server-side features, SQL, and other database objects, including indices and joins.
- **Compatibility check:** Before embarking on the migration journey, a meticulous compatibility assessment was carried out. This involved dissecting all system elements, major keywords, and features, with a focus on confirming their availability and compatibility within PostgreSQL.

## Our Approach

Our team employed an efficient tool for migration, simplifying the process. The approach included:

- **Tool Utility:** The migration tool was straightforward to use, connecting to both source and target databases. It generated executable SQL scripts and maintained comprehensive logs for each transformation.
- **Partitioning for large tables:** For large size tables (900GB, 800GB, 750GB), partitioning was applied to facilitate parallel copying of data from the source to the target, enhancing efficiency.



## The Solution

Addressing the lack of an exact match between Oracle and PostgreSQL involved a meticulous process, necessitating the following steps:

- **Code rewriting and modification:** Recognizing the absence of a seamless transition, manual efforts were dedicated to rewriting and modifying existing code. This exercise was pivotal to ensure compatibility and functionality.
- **Tool evaluation:** Given the enormity of manually migrating all database objects, we conducted an extensive evaluation of available tools. After a thorough assessment, we identified the most suitable tool for schema conversion and data migration.
- **Successful object migration:** The migration process was executed with precision, resulting in the successful migration of all database objects. The primary focus was on migrating complex stored procedures, with significant effort dedicated to functional testing and crafting equivalent logic to bridge the gap between Oracle PL/SQL and PL/postgreSQL.

## The Impact

The database migration project yielded the following key benefits for our client.

- 1) **Cost Savings:** Our client experienced significant savings on Oracle licensing costs.
- 2) **Feature-Rich Migration:** The migration of their OLTP application was completed without compromising on features, ensuring a seamless transition.
- 3) **Minimal Performance Impact:** Performance evaluation indicated no major impact on their application's performance.
- 4) **Faster Process:** Migration from Oracle Prod to PostgreSQL Prod, including testing and reconciliation was finished within 12 hours, meeting the 3-hour cutoff.
- 5) **Easier Cloud Deployment:** The migration enabled easier deployment on the cloud, thanks to PostgreSQL's availability on many cloud service providers' standard off-the-shelf images.

## Conclusion

Ahana's expertise and efficient migration approach not only assisted our client in successfully transitioning from Oracle to PostgreSQL but also delivered substantial cost savings and a feature-rich database system. Our rapid execution, minimal performance impact, and enhanced cloud deployment options showcase Ahana as the premier choice for organizations seeking expert database migration services.

## About Ahana Systems and Solutions

*Ahana is a global IT service provider for Digital Transformation Services and Solutions. At Ahana, we specialize in providing cutting-edge solutions that help businesses in their digital transformation journey and empower them to harness the full potential of their data. Our dedicated team of experts is always ready to guide customers through every step of transformational expedition. With over 100+ clients across India, Europe, and USA, Ahana is one of the leading choices for 'Digital-first' organizations in a fast-paced scenario.*