Case Study: A Leading Enterprise LMS Company

Oracle to PostgreSQL Migration using Cloud Data Migrator

Problem Statement

Our Client was running their Enterprise LMS (Learning Management System) backed by an Oracle database with several Enterprise and Forture 500 companies. They wanted to expand their offerings beyond Enterprises based on their traditional data center and decided to migrate their system to AWS so that the LMS offerings could be easily used by SMB and mid market segments. They calculated their costs for cloud-based offering with Oracle to be too high and opted for migrating to AWS RDS PostgreSQL instead. They hired Cloudly to migrate their database to AWS RDS Post-greSQL and asked their development team to collaboratively migrate their entire platform to AWS.

Customer Profile

Our Client is a sales and marketing solutions and services company that helps organiza- tions of all sizes, ranging from Fortune 500 enterprises to small-to-medium-sized businesses, create new revenue streams from segments of their customer base that extend beyond traditional sales team capabilities. With its unique approach, Client delivers proprietary cloud-based e-Com- merce technology, global and localized sales-assist agents, and best-practice sales and marketing expertise, allowing custom- ers to discover and monetize untapped revenue opportunities.

Solution Approach

To find best solution approach for migration, Cloudly did a full assessment on five different Oracle databases from Rainmaker System's Enterprise LMS. The table below represent the outcome of initial assessment phase. Based on the complexity of the databases below are the four major approaches we selected for database migration, using Cloudly Data Migrator (CDM):

1. Direct equivalent that will be automatically translated, e.g., Tables, Views, Synonyms, etc.
2. Direct equivalent that will be manually translated, e.g., Triggers, Functions / Procedures, etc.
3. Application level backend changes for object, e.g., ROWID, GOTO, etc.
4. Manually Data migration for object, e.g., BLOB, CLOB, etc.

	Database 01	Database 02	Database 03	Database 04	Database 05
Tables	115	254	167	447	215
Views	45	7	4	8	5
Sequences	9	120	135	78	43
Triggers	165	180	230	57 0	34
Functions	45	0	0 0	510	0
Synonyms	0	130			128

Execution & Delivery

Cloudly team undertook the project over a period of sixteen weeks and delivered a PostgreSQL equivalents to Our Client's Enterprise LMS Oracle databases and then ensuring that all data migrated properly. The application worked to a large extent without any significant changes.

Weeks 1-2	Weeks 3-8	Weeks 9-12	Weeks 14-16
• Complete Assessment of Oracle databases • Run CDM scripts and review all failed cases • Tabulate and confirm solution approach for each failed case • Develop full blueprint and migration plan	• Progressively resolve all failed cases for #1 and create the base schema • Complete manual translation items for #3 • Review #3 with development team and confirm the changes application will need for *PostgreSQL* database	• Create data migration scripts for #4 incl. test data • Develop unit test scripts for implementatio n of #3 items • Review and finalize the *PostgreSQL* schema	• Setup *RDS PostgreSQL* test environment incl. test data load and unit test scripts mocking app changes needed • Unit test and test the application with *PostgreSQL* schema and test data (basic cases) in test environment

Cloudly Profile

CloudlyIO was founded by a group of cloud experts of Silicon Valley, who started working on Amazon Web Services (AWS) platform when there were only two services available: EC2 and S3. They successfully migrated over 100 customers in North America, Europa, Asia and Australia over a period of five years. This experience showed them how migrating to cloud, esp. databases was one of the daunting challenges that almost all businesses who wanted to use public clouds for their workloads were facing. They decided to do something about it and built an automated database migration platform called: Cloud Database Migrator (CDM), which leverages AWS Database Migration Service (DMS) and automates various parts of the workflows, such as, provision- ing of resources, validation of migrations and reporting of migrated features.

Business Benefits

Cloudly successfully completed the migration of Oracle databases from Our Client's Enterprise LMS platform and successfully prove that the application can work with a PostgreSQL database. Customer was able to quickly validate:

- The hypothesis of migrating their database from data center to cloud environment
- The possibility of using an open-source database and avoid millions in licensing fees
- The capability of AWS RDS PostgreSQL for elastically scaling databases against demand
- The potential costs of maintaining two tracks: licensed on-premise and open-source cloud
- Reduce TTM for their cloud-based offerings for SMBs by leveraging AWS RDS capabilities

Outcomes

At the end of project, customer had completed migration of their complex databases and received A set of deliverables from Cloudly:

- Complete migration blueprint incl. detailed instructions of all automated and manual steps
- All conversion scripts for source>source and source>target conversions
- Sample test data for testing post-migration compatibility
- All test scripts validating converted schema and data
- All unit test scripts mocking application changes necessary

Cloudly

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