

Redshift Migration for Loan Origination System



MEET THE CLIENT:

Cync Application Suite provides a diverse collection of financial software solutions that cover a vast range of account receivable financing, factoring, working capital loans, asset based lending and related credit services. By streamlining, standardizing, and automating the collection and analysis of the borrower's financial information, Cync delivers a complete software solution for commercial finance companies as well as banks that provide asset-based loans.

Cync-Loan Origination System (LOS) is the main module of the Cync Application Suite designed to integrate the Financial Analyzer (with improved features) and the new Underwriting Module. The Underwriting Module will handle all new loan transaction requests, and work with the FA module, to provide all the necessary information to the decision-makers regarding specific loan transactions being presented for approval. The Underwriting Module will work with third-party CRM systems, Core Banking systems, and other Third-Party Post-Approval systems to integrate any existing leads into the Cync LOS and manage the lifecycle of a loan application from proposal through approval.

CHALLENGES:

Fast paced analysis and decision making have become an essential part of every company/ organization to improve business performance and provide premier solutions to customers. However, the process of retrieving data and creating insightful on-demand reports and dashboards have become a challenge for LOS team, which uses conventional OLTP systems as the source of data. For this reason, Cync would like to store the data in the managed DWH, with on-demand automated data loading process which includes warning mechanism in case the given threshold exceeds it.



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inquiry@idexcel.com | www.idexcel.com

Management & Maintenance Challenges	Technical Challenges
Each report activity/ job would need the involvement of multiple participants consuming high workforce time.	The current solution is lacking better data processing and query performance, impacting the businesses to make decisions at the right time.
Elaborated and prolonged framework with difficult deployments.	Building complex SQL queries for simple reports which are affecting the overall performance of the OLTP system.
Less flexibility with conventional OLTP systems cannot be scaled up on demand as per the data load.	Maintaining history in the OLTP system.
Management and maintenance require recruiting the right people who have experience with the right tools.	De-normalized view of data in sub-second response time.
	Working directly on OLTP platforms impacts the Disk, I/O and hinders the operations.

OUR SOLUTION APPROACH:

To resolve the above challenges, Idexcel developed a cloud centric data warehousing solution using Redshift as the data warehouse. Data pipelines run on top of an EMR cluster that processes, transforms, and loads the data into Redshift tables. Lambda is used to trigger EMR jobs as the data loads into Redshift in an incremental approach.

The entire pipeline is fully automated and audited at every step for transparency in the process and easy debugging. Also, a summary report is generated and sent to clients with an overview of all the data load jobs in the agreed format.

Our solution included the following:

1. Redshift, which is employed as the Data Warehouse and is used for data storage, analysis, and reporting.
2. AWS EMR service to load huge amounts of data using Big Data framework from S3 to Redshift.
3. Lambda, a serverless computing service is used to trigger multiple jobs across AWS services through the framework process.
4. CloudWatch, to monitor architecture wide performance changes and the overall health of the system.
5. Triggering events and providing constant notifications regarding events initiated is performed by SNS.
6. Amazon Virtual Private Cloud (VPC) and its associated services for securely isolating cloud resources and S3 data being secured using AWS default encryption (AES-256).
7. Utilized Apache Livy Rest API to submit spark jobs to EMR using Lambda functions.

KEY ADVANTAGES OF THIS SOLUTION

With proper assessment, planning and design, the Idexcel team was able to complete the migration process within the original timeframe to achieve the following key advantages:



Cost-Effective: Overall costs are significantly reduced by using more AWS managed services, paying per infrastructure usage, and utilizing reserved instances. Infrastructure and maintenance cost are reduced using serverless services.



Highly Scalable: Different data source workloads and growing data sizes are supported more efficiently using this solution.



Optimized Automation & Notifications: Redshift automates infrastructure provisioning and administrative tasks such as backups, vacuum, replication, and patching. Automated alerts are also received from Redshift cluster if the pre-defined threshold is crossed. There is also an automated EMR job alert mechanism in case of job failures.



Solidify Your Competitive Edge: Our approach is implemented by top experts using the latest technology and tools to assure you have an optimized solution.



Optimized Business Capability: Idexcel's approach to serverless computing results in faster deployment, enhanced scalability, greater developer productivity, & better performance.



Better Information = Better Business Decisions: Solution is highly available and resilient. The data is denormalized into derived tables which enforces in building insightful reports and dashboards, helping leaders make critical decisions for the growth of the business.

Interested in learning more about loading bulk amount of data to better manage your IT ecosystem? Contact Idexcel to schedule a workshop, request a demo, or to speak with someone from our team about how we can help implement this solution.

OUR AWS COMPETENCIES



- Public Sector
- Solution Provider
- DevOps Services Competency

- Financial Services Competency
- Migration Services Competency

Contact us Idexcel, Inc.

459 Herndon Parkway Suite 10, Herndon, VA 20170
Tel: 703-230-2600
Email: inquiry@idexcel.com



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inquiry@idexcel.com | www.idexcel.com