

Redshift Migration for Loan Origination System



MEET THE CLIENT:

Cync Application Suite provides a diverse collection of financial software solutions that cover a wide range of services, including accounts receivable financing, factoring, working capital loans, asset-based lending, and related credit services. By streamlining, standardizing, and automating the collection and analysis of borrowers' financial information, Cync delivers a comprehensive software solution for commercial finance companies and banks that provide asset-based loans.

The Cync Loan Origination System (LOS) is the main module of the Cync Application Suite, designed to integrate the Financial Analyzer (with enhanced features) and the new Underwriting Module. The Underwriting Module handles all new loan transaction requests and works with the FA module to provide all the necessary information to decision-makers regarding specific loan transactions under consideration for approval. It integrates with third-party CRM systems, core banking systems, and other post-approval systems to bring in any existing leads into the Cync LOS and manage the lifecycle of a loan application from proposal through to approval.

CHALLENGES:

Fast-paced analysis and decision-making have become essential for every company or organization aiming to improve business performance and provide premier solutions to customers. However, the process of retrieving data and creating insightful on-demand reports and dashboards has become a challenge for the LOS team, which relies on conventional OLTP systems as the data source. For this reason, Cync sought to store the data in a managed Data Warehouse (DWH) with an automated, on-demand data loading process, including a warning mechanism in case a defined threshold is exceeded.

Management & Maintenance Challenges	Technical Challenges
Each report activity/job requires the involvement of multiple participants, consuming significant workforce time.	The current solution lacks efficient data processing and query performance, which impacts businesses' ability to make timely decisions.
The framework is elaborate and prolonged, making deployments difficult.	Building complex SQL queries for simple reports negatively affects the overall performance of the OLTP system.
There is limited flexibility with conventional OLTP systems, which cannot be scaled up on demand based on data load.	Maintaining historical data in the OLTP system is challenging.
Management and maintenance necessitate recruiting the right personnel with experience using the appropriate tools.	There is a de-normalized view of data, which affects sub-second response time.
	Working directly on OLTP platforms impacts disk I/O and hinders overall operations.

OUR SOLUTION APPROACH:

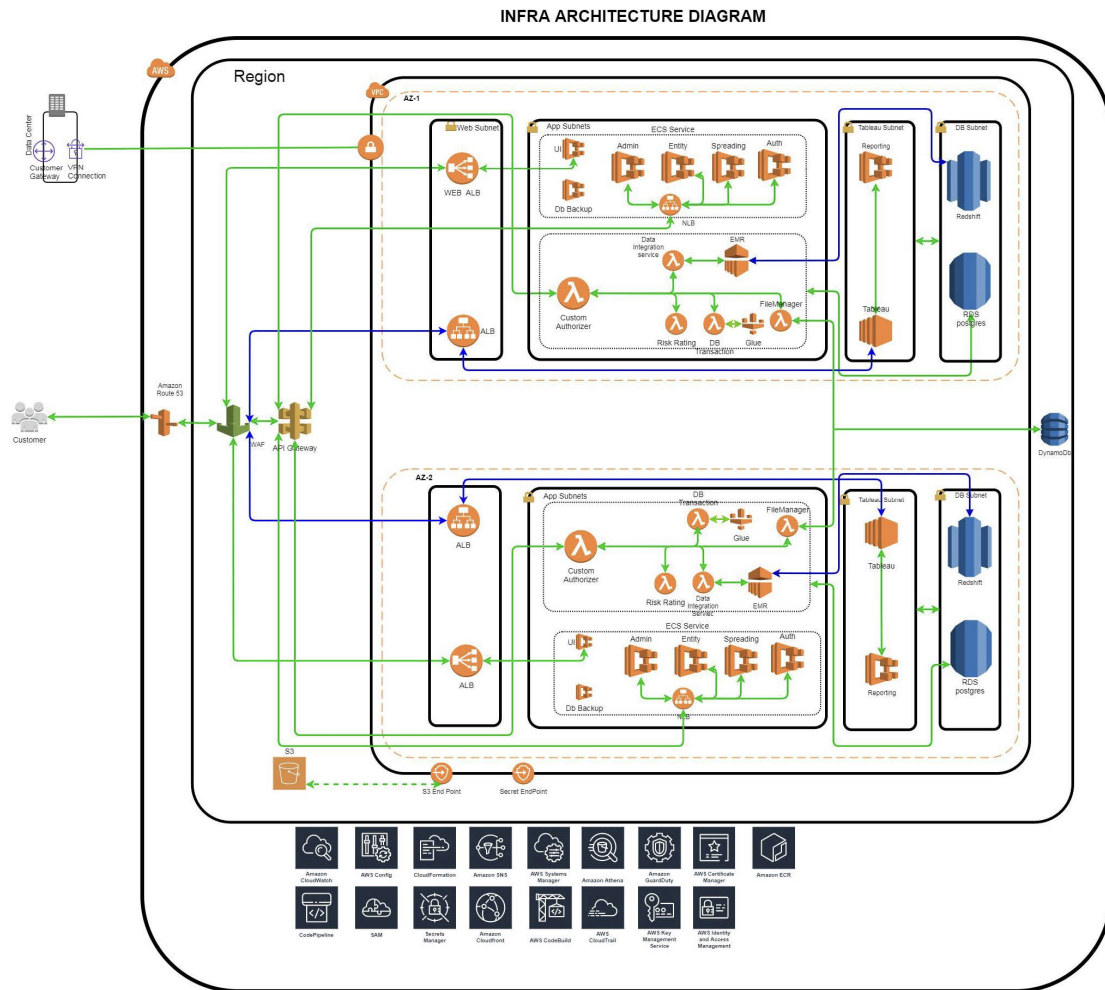
To resolve the challenges mentioned above, Idexcel developed a cloud-centric data warehousing solution using Redshift as the data warehouse. Data pipelines run on top of an EMR cluster that processes, transforms, and loads the data into Redshift tables. Lambda is used to trigger EMR jobs as the data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

The entire pipeline is fully automated and audited at every step for transparency in the process and easy debugging. Additionally, 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: Employed as the data warehouse for data storage, analysis, and reporting.
2. AWS EMR service: Used to load large amounts of data using the Big Data framework from S3 to Redshift. .
3. Lambda: A serverless computing service used to trigger multiple jobs across AWS services throughout the framework process.
4. CloudWatch: Used to monitor architecture-wide performance changes and the overall health of the system.
5. SNS: Used for triggering events and providing constant notifications regarding events initiated.
6. Amazon Virtual Private Cloud (VPC): Used to securely isolate cloud resources, with S3 data secured using AWS's default encryption (AES-256).
7. Apache Livy Rest API: Used to submit Spark jobs to EMR through Lambda functions.

OUR SOLUTION ARCHITECTURE



WHY DO WE USE REDSHIFT?

Amazon Redshift is a fully managed cloud data warehousing solution designed to meet the needs of data-driven organizations. It enables fast data analysis using SQL, specifically optimized for managing and querying massive datasets at high speed. Redshift offers highly scalable and cost-effective features, making it more efficient than traditional database systems. In today's data-driven world, having an ideal data solution is crucial for organizational growth.

With our data load utility and migration solutions, we help leading organizations gather meaningful insights by leveraging all their customer data on-demand through AWS Managed Services. This solution addresses customer needs with a customizable design and scalable infrastructure, ensuring adaptability as data grows. Our Redshift data warehousing system provides a robust and reliable foundation for managing ever-expanding datasets.

KEY ADVANTAGES OF THIS SOLUTION

With proper assessment, planning, and design, the Idexcel team successfully completed the migration process within the original timeframe, achieving the following key advantages:



Cost-Effective: Overall costs are significantly reduced by utilizing more AWS managed services, paying for infrastructure usage as needed, and leveraging reserved instances. Serverless services also contribute to reduced infrastructure and maintenance costs.



Highly Scalable: This solution efficiently supports different data source workloads and accommodates growing data sizes, ensuring scalability as business needs evolve.



Optimized Automation & Notifications: Redshift automates infrastructure provisioning and administrative tasks such as backups, vacuuming, replication, and patching. Automated alerts are sent when the Redshift cluster exceeds predefined thresholds. Additionally, there is an automated alert mechanism for EMR job failures.



Solidify Your Competitive Edge: Our approach is implemented by top experts using the latest technologies and tools, ensuring you have an optimized solution that strengthens your competitive advantage.



Optimized Business Capability: Idexcel's serverless computing approach leads to faster deployments, enhanced scalability, increased developer productivity, and better overall performance.



Better Information = Better Business Decisions: The solution is highly available and resilient. Data is denormalized into derived tables, which facilitates the creation of insightful reports and dashboards, empowering leaders to make critical decisions that drive business growth.

Interested in learning more about how to efficiently manage large data loads in your IT ecosystem? Contact Idexcel to schedule a workshop, request a demo, or speak with a team member about how we can help implement this solution.

OUR AWS COMPETENCIES



- DevOps Services Competency
- Financial Services Competency
- Migration and Modernization Services Competency

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Find out how Idexcel solutions can help your business. Contact us today!

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