

Consolidate and aggregate data from MySQL DB and Salesforce



Background

As a large nonprofit organization with over 100 million raised revenue yearly, Share Our Strength founded several national campaigns to raise funds, engage supporters, and advocate for their cause. These campaigns have grown into very large scales and involved a great many of different parties and stakeholders. In today's digital world, all these activities and interactions heavily rely on a fortified backend data system to fulfill various business and marketing oriented analytical functions. A complex data lake architecture is utilized to ingest, cleanse and aggregate data from different external resources. Data experts will use processed datasets from the clean zone on 3rd party tools such as Tableau, Power BI, QuickSight and SageMaker to create dashboards, reports, ad hoc analysis, machine learning models etc.

The Challenge

Born together with Share Our Strength in 1984, No Kid Hungry is the first and most influential campaign in its parent organization. It has two different data systems: MPA MySQL DB hosted in AWS RDS with records for broad meal, hunger, poverty and demographic data, and Salesforce system for grant applications and reports. The two systems are managed by two different teams, so it has created a lot of difficulties in data integration and aggregation for downstream analysts and business users.

The two host systems (MySQL and Salesforce) have different schemas. The data ETL process needs to be compatible with both resources and transform into a unified data schema according to the mapping table provided by the customer. In addition, the performance and accuracy of data processing must meet the business requirement.

Why the ASCENDING Team

Share Our Strength understood that these challenges required the most sophisticated technology platform equipped with excellent SaaS compatibility and analytical power. Thus, AWS became the perfect solution platform. As an Advanced AWS partner, ASCENDING has showcased strong data and analytics competency with AWS services across the board. The ASCENDING team has demonstrated hands-on experience with several similar successful past performances. The ASCENDING team was chosen to be the solution provider and consulting partner to fulfill the NPO's goal for the data migration and integration.

The Solution

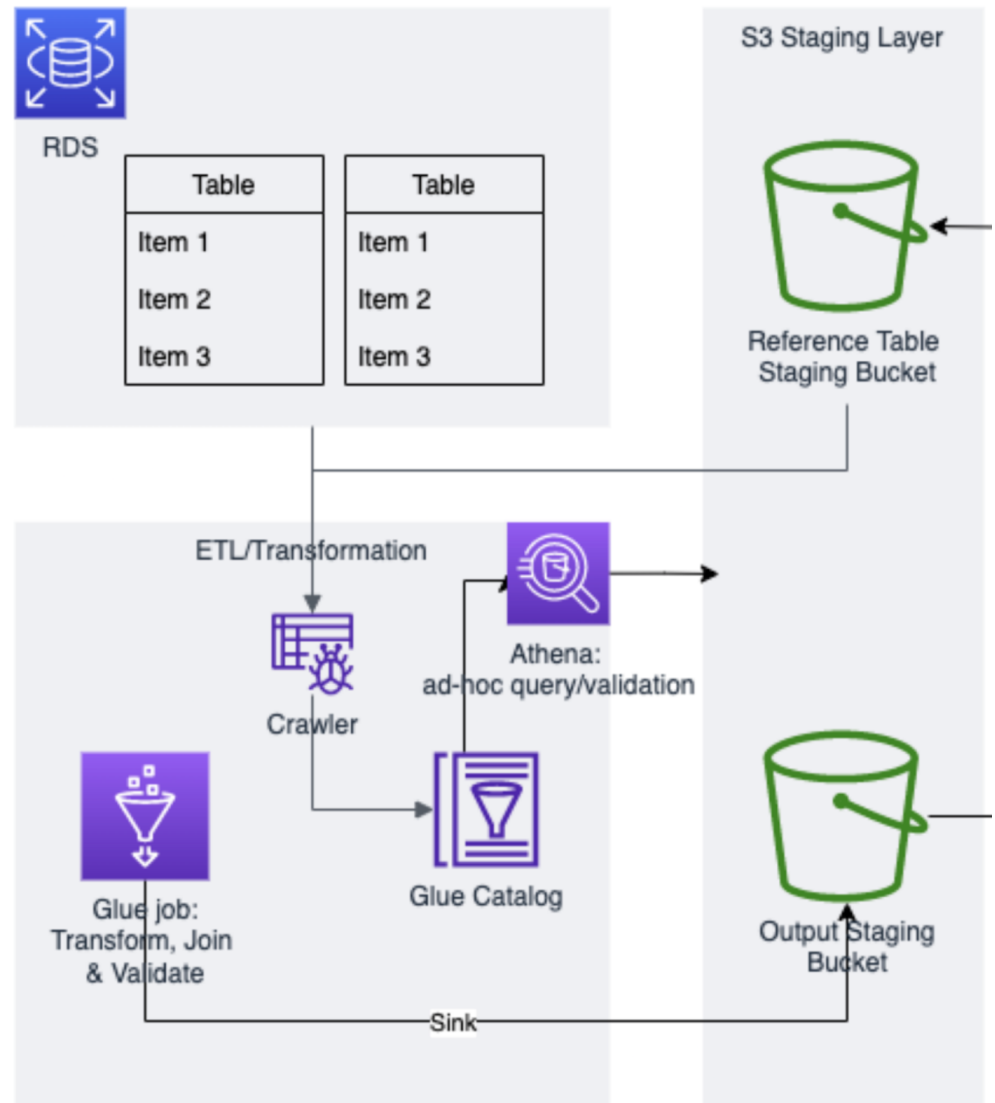
The ASCENDING team recommended AWS Glue services to do the ETL jobs. Glue Crawlers can crawl not only the different schema as tables in the Data Catalog but also crawl S3 static lookup tables into Data Catalog.

The logo for Share Our Strength, featuring the words "SHARE OUR" in white on an orange background, and "STRENGTH" in white on a dark grey background.

About Share Our Strength

"No child should grow up hungry in America". Since 1984, Share Our Strength has led the fight against hunger and poverty by inspiring and organizing individuals and businesses to share their strengths. Share Our Strength, a national nonprofit, is ending childhood hunger in America.

The ETL job can read the lookup table from the catalog and transform different schemas into a unified format. The processed data will be stored in S3 buckets for further analysis and visualization.



Outcomes

The ASCENDING team used the Glue job to unify the output schema of all the input data and stored it in the S3 bucket in the unified format. The unified data schema makes the following data analytics and visualizations more feasible and takes less storage space. With Glue as AWS managed service, the client has zero overhead on the IT infrastructure.

About ASCENDING LLC

ASCENDING is a certified AWS Advanced Consulting Partner, Data Competency, and Public Sector Partner. We help clients from various industries migrating to the AWS cloud and optimize their operations on it. Our mission is to deliver scalable, high available, and user-friendly optimized cloud solutions to clients. All our engineers are AWS certified.



Migrate organizations/county records from Salesforce into AWS data lake



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Organizations/county records from Salesforce are not fully compatible with MySQL DB in the data lake due to the nature of different systems. Designing and building an automatic bi-directional data integration and migration flow is time-consuming and laborious.

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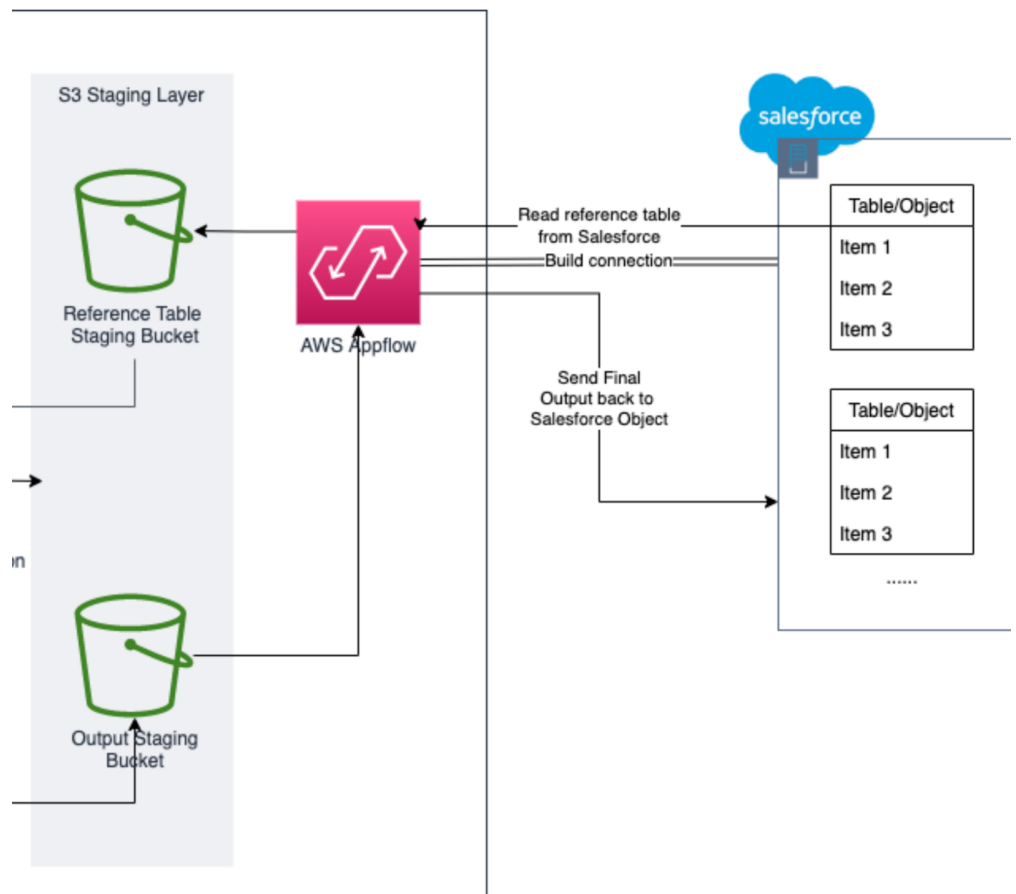
The ASCENDING team collaborated with Share Our Strength to utilize AWS Appflow to migrate data between Salesforce and MySQL RDS.

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The ASCENDING team established an automatic bi-directional data flow between Salesforce SaaS applications and AWS MySQL RDS services. This process can transfer data at scale without the need to provision system resources, and simplify data preparation with transformations, partitioning, and aggregation. The client can customize the pipeline execution schedules freely. And the Salesforce data schema is automatically registered with the AWS Glue Data Catalog so that Glue Crawler can create corresponding tables in the data catalog whenever a schema change happens.



Outcomes

The automated data migration process saved a lot of human labor. Since it's built on AWS fully managed service, it also saved a lot of infrastructure and maintenance cost and provided excellent performance and scalability to support potential increase in data volumes in the future.

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