

▶ **Entrust Corporation****CLIENT SUCCESS PROFILE****Industry:** Security**Location:** USA**Solution:** Moved*Entrust client facing documents from legacy systems to real-time***Technology Used:**

AWS Data Lake, QuickSight, Amazon S3, EC2, IAM, Secrets Manager, AWS Glue, Glue Data Catalog, Parquet, Glue DataBrew, AWS Athena, CloudTrail, Redshift, Spectrum, Data Migration Service, Atlassian Jira

Client

Today more than ever, people demand seamless, secure experiences, whether they're crossing borders, making a purchase, accessing e-government services or logging into corporate networks. Entrust Corporation offers an unmatched breadth of digital security and credential issuance solutions at the very heart of all these interactions. With more than 2,500 colleagues, a network of global partners, and customers in over 150 countries, it's no wonder the world's most entrusted organizations trust Entrust.

Challenge

Like many companies, Entrust Corporation was looking to modernize BI so that they could respond more quickly and efficiently to changing business needs. This meant that they needed to move from a legacy and batch environment to a system that gave them the ability to grow in a real time environment. Entrusts environment utilized an Oracle Data Warehouse and SAP Business Objects. The challenges they faced were that reports had grown year over year, taking many hours to run/refresh the data warehouse overnight and the jobs were not all documented making maintenance increasingly more challenging. Additionally, systems were costly to maintain and were not set up using design thinking techniques for clients and channel partners who are the consumers of the reports.

Solution

The initial statement of work with Charter Solutions was to develop a data lake plan and a self-service analytics structure while delivering real and immediate business value. This was done in three different phases - A Proof of Concept (PoC) phase, a Pilot phase, and an Implementation phase.

The content for the Data Lake PoC was the website marketing data that was being collected by the Marketing team.

Phase I – Proof of Concept (3 months)

- Created an agile implementation team consisting of business and technology team members
- Identified data sources and defined a clear set of business objectives for web analytics
- Analyzed current reports and report usage

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- Created an initial Data Lake utilizing AWS
- Mentored and educated the Marketing team members on how to interact with the Data Lake, giving them hands on experience to operate independently
- Built out a future roadmap for continued growth and use of the new agile analytics infrastructure

The PoC proved the concept, moving the Charter and Entrust team forward into phase II, the Pilot which was based on the Lakehouse that was conceptualized during the PoC.

Phase II – Pilot

- Defined and implemented the architecture of the Lakehouse that was conceptualized in the POC
- Evaluated and implemented Amazon QuickSight as a viable cost-effective tool that would modernize their BI needs and provide the opportunity for real-time updates
- Developed Finance Dashboards in QuickSight
- Demonstrated user level permissions and improved data prep
- Performed an ETL to ELT comparison, comparing the execution timings SAP Data Services Currency Exchange ETL to AWS Glue based Data Pipeline (ELT)

A successful Pilot moved the project to full implementation.

Phase III – Implementation Phase

The Entrust implementation is based on an automation first strategy with Infrastructure as Code (IaC) scripts.

- We are taking an agile approach and creating new data pipelines to the new Data Lakehouse and creating new QuickSight dashboards department by department
- The existing Extract-Transform-Load (ETL) is being replaced with Extract Load & Transform (ELT) data pipelines that are more performant and efficient.
- QuickSight became the standard while their current visualization tool was converted to conditional use
- There is a 2-year path to Sunset Business Objects across the corporation

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Results and Benefits

- The processing time for complex ETL with significant data and number of rows being processed was reduced by 70%
- Newly developed AWS Glue based Data Pipeline runs in 4 minutes
- Channel Partners now have the ability to provide dashboards to external partners securely and efficiently
- Induction process now takes the existing files (Excel, CSV, JSON, etc.) and converts them to Parquet format which reduced the time by 75%
- The candidate reports were implemented successfully with no business disruption or performance issues
- The batch feeds have been simplified utilizing Glue and eliminating costly transforms from Oracle to Redshift formats.
- Performance improvements are trending higher as more data sources are fed directly into the new Data Lakehouse
- Performance has improved as batch data feeds are converted to near-real-time updates in the Lakehouse
- Real operational costs will continue to decrease as all departments are migrated to the Lakehouse and legacy data warehouse and Business Objects are decommissioned.

Eyes to the Future

With eyes to the future, Entrust will continue on their process improvement BI Transformation journey, eliminating the use of legacy systems, decommissioning the current data warehouse and moving from on-prem to cloud. The end result will be the data in the Data Lakehouse will be current real-time and the BI Team will be able to respond quickly to new and changing business needs.