



Business Intelligence Platform for Non-Profit Organization

CLIENT SUCCESS PROFILE

*Industry: Research
Foundation (Non-Profit)
Location: USA
Company Size: \$22
Million
Engagement: 2 months
Capabilities Applied:
Amazon VPC, Tableau,
Tableau Server, Amazon
EC2, Amazon Aurora,
Pentaho Data
Integration, Docker, AWS
Batch, AWS Lambda*

INTRODUCTION

Charter Solutions worked with a research and educational non-profit organization focused on heart health. This client currently uses a number of disparate informational systems to track its information. A key strategic initiative for the organization in 2020 was to implement an analytics solution to aggregate their disparate data sources into a single, HIPAA compliant platform that was easy to manage yet allowed them to streamline operational and executive reporting. The overarching goal was to enable the business to derive more value from the data they have and to make better, more informed decisions.

CHALLENGE

Generating reports in the current environment is a tedious process, involving running numerous reports on individual systems, manually correlating data between systems, and then massaging and formatting data. The client wanted to develop a platform to provide integration of various independent systems for reporting purposes, making key data readily accessible to organization leaders and decision makers.

THE SOLUTION

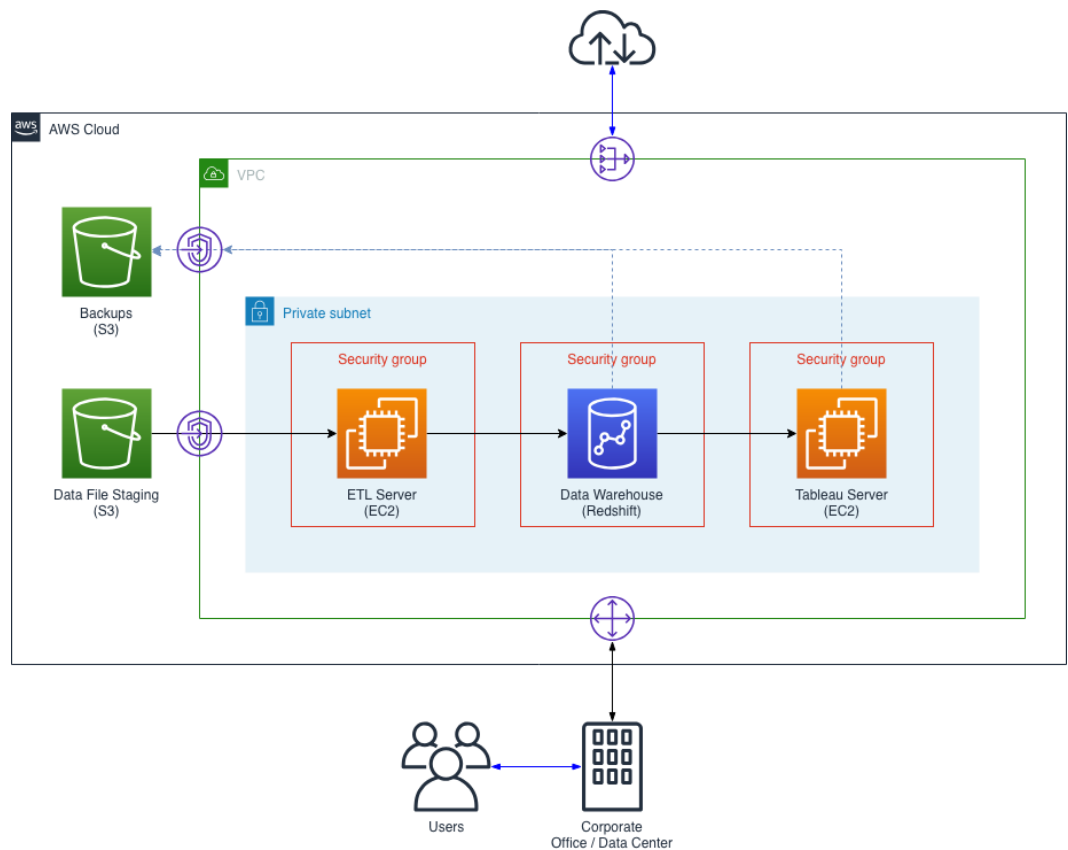
As this is a non-profit organization with low technical expertise, the goal was to keep the maintenance and operating cost to a minimum, addressing their business needs without sacrificing quality. AWS was the cloud infrastructure platform selected to host the entire solution and Tableau was selected for data visualization. The technical goal of the platform was to pull together data from disparate sources including ADP, Great Plains Accounting, some homegrown databases, and Salesforce.com in a HIPAA compliant manner, providing a means to create integrated dashboards and data visualization for the organization's leadership. Key elements of the solution included:

- All data at rest was encrypted with AES-256 level encryption. Encryption keys are managed with AWS Key Management System (KMS) to give further control over their management and use. All data transferred over the network is encrypted using TLS.
- The system was built according to AWS requirements for HIPAA compliance. This enabled acquisition of a BAA from Amazon to ensure HIPAA compliance.
- A secure, encrypted data tunnel was configured between our clients' and the AWS data center. This limits all access to the system from the outside world. Remote workers are the exception to which access is granted.
- Security granularity includes user-based restrictions on tables, columns, and rows.
- Regular back-ups of the data are performed to ensure business continuity.
- Entire infrastructure was built with CloudFormation to allow for quick and easy spin up in a new region if necessary.

TIMELINE

The entire project was completed in a 2-month period, including dashboard design and development and knowledge transfer.

ARCHITECTURE



TECHNOLOGIES USED

- Amazon VPC and related services – for secure network infrastructure. Tableau Server lives in the public subnet and all other resources live in the private subnet
- Tableau Server – Hosting of data visualizations and dashboards
- Amazon EC2 – hosting of Tableau Server and the VPN server
- Amazon Aurora – for storage and query of ingested data
- Pentaho Data Integration – Processing/mapping of data and updates to database
- Docker – for the runtime configuration of the Pentaho environment
- AWS Batch – Used to run the Pentaho ETL jobs
- Amazon Simple Storage Service (S3) – New data extracts from source systems are uploaded here
- AWS Lambda – Monitors S3 for new files and triggers appropriate AWS Batch jobs to data can be loaded on-demand

END RESULTS

Using AWS as the core platform for data aggregation, Charter Solutions was able to quickly integrate their disparate data sources into a single, comprehensive data store suitable for rapid data mining for operational reports as well as delivering key insights to the executive team. In less than 60 days the platform was ready and over 20 new dashboards were created that provided them fresh information on organization operations including financial, program, and HR related topics.

The platform went live into production in record time and will continue to be expanded as additional data becomes available.

ABOUT CHARTER SOLUTIONS

Charter Solutions delivers business and technology consulting services that help companies we partner with harness the power of data, analytics, the cloud, and application development to improve business outcomes. Our multi-industry experience allows us to uncover new solutions and guide clients to the best-fit application of technology to meet their goals.

CONTACT INFORMATION

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