STREAMLINE HEALTHCARE DATA MANAGEMENT SYSTEM FOR SCALABILITY AND ANALYTICS BY MIGRATING TO AZURE CLOUD SOLUTIONS

OVERVIEW

Industry: Healthcare

Geography: United States

Solutions:

- Generate Business Analytics reports from healthcare insurance Data.
- Cloud Based solution for extracting and transforming Insurance data from Payer Contracts.

Results:

- Allowed client to analyze insurance data across the payer contracts with uniformity of data
- With the solution in place, all historical data analysis was possible which was limited to current data only
- Ease of data storage, processing & management
- User friendly interface to perform configuration for the new payer contract data

BUSINESS CHALLENGES

The Client's original base data was unstructured, and it was distributed across many sources. The transition of this raw data to the Azure SQL Database required multiple levels of processing.

Initially there was a manual process of collecting insurance data from payer contracts. The analysis of these contracts was done in Excels. There was no consolidated solution to analyze insurance data across the payer contracts.

Scalability of solution to cater new payer contracts was a challenge.

OUR SOLUTIONS

We used ETL (Extract, Transform and Load) for Excel /CSV/Text row data (Semi structured data) that was accumulated from various sources (payer contracts) and imported it to Azure SQL data warehouse. This was done using a layer of Azure blob storage to HBASE / HIVE of Azure HDInsight after performing data validation.

The Historical data was stored in HIVE storage in ORC (Optimized row Columnar) format for any future processing and the records were removed from Azure Blob storage. ORC improves the performance of Hive while reading, writing or processing data. ETL processes were used to create Dimension tables (which did not exist) using JSON configuration file. Stored procedures were designed to pull data from Azure SQL Data warehouse to generate reports. The Reports are generated in the user requested Tabular formats.

Technologies Used:

- Azure Data Factory
- Azure File storage / Azure blob storage
- Azure HDInsight (HDFS and Hive-SQL)
- Azure SQL Datawarehouse
- Azure Machine Learning

The Solution was completely configuration based which allows user to configure source data as an Input for any row data. This solution allows you to map the required fields for data warehousing, permitting him to create dimensions and populate data and Fact Tables.

We included Exception Handling and Notification system and facilities to Queries/Store procedures interface for Reporting tool. The entire solution was based on Azure Cloud Services (PAAS – Platform As A Service)

THE CLIENT

A leading physician hospital organization (PHO) with more than 400 physicians and providers of varying specializations facilitating consulting services to the community both for routine and Emergency cases. They provide innovative, convenient and coordinated primary and specialty health care. They include network development, transformation of care delivery settings, and medical management.

ABOUT CLARION

Clarion Technologies is an IT outsourcing company, empowering small and medium businesses on their growth trajectory with a world-class, dedicated global team of virtual employees. Through its 3 state-of-the-art development centers, 350+ highly skilled code artisans and a unique engagement model the company enables small business owners to bring about a constructive change in their respective domains. This unique engagement model increases access to quality resources, delivers better products and lowers the overall software development costs. Find more information about how Clarion is shaping the future of outsourcing at https://www.clariontech.com/

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