

A close-up photograph of a hand with fingers touching a glowing digital interface. The interface displays various data visualizations, including line graphs and network diagrams, with a color palette of blues, greens, and reds. The background is dark, making the glowing elements stand out.

Optimizing Data Integration and Analysis for a Multifaceted Enterprise

Challenge

A multinational enterprise operating in diverse sectors including telecommunications, customer service solutions, and digital marketing sought to streamline their data integration and analytics capabilities. With operations spanning multiple regions and industries, the client faced challenges in consolidating and analyzing data from disparate sources. These sources consisted of on-premises SQL Server databases, Genesys Cloud API, Google Analytics, and Verizon data streams. Additionally, the team was forced to wait over eight hours for data to refresh, losing valuable time. With these challenges in mind, the team reached out to INSPYR Solutions for assistance with this extensive project.

The client had several objectives for the project:

- Integrate data from various sources to gain comprehensive insights into business operations.
- Establish a scalable and efficient data processing infrastructure on Azure cloud platform.
- Enable real-time and batch data processing for timely decision-making.
- Develop a unified analytics environment for actionable insights and reporting.

Solution

The initial phase of the project consisted of an assessment and proof of concept demonstrating how fast reporting could be if the client moved to the cloud. If they were to start querying their data on Azure Synapse instead of the slower on-premises system, they could drastically cut down wait

A white rectangular callout box with a blue triangle in the top right corner. It contains text highlighting a key achievement of the project.

The data refresh time of the client's on-premises system was reduced from 8+ hours to <20 minutes

times. Impressed with the initial results INSPYR Solutions demonstrated, the client chose to move forward with a long-term project to modernize their systems.

INSPYR Solutions deployed a technical team to provide data architecture and Azure data engineering. The team collaborated closely with the client's IT and data teams to design and implement a robust data integration and analytics solution leveraging Azure cloud services. The solution included the following key components:

Self-Hosted Integration Runtime

Setup: The team configured a self-hosted integration runtime environment to facilitate seamless connectivity between on-premises SQL Server databases and Azure cloud services.

Azure Synapse Database Creation:

INSPYR Solutions established a Synapse database environment and configured external tables and views to directly query and analyze data residing in on-premises and cloud-based sources.

Development of Single Pipelines:

The technical team designed and implemented data pipelines capable of handling multiple data sources concurrently. They utilized JSON configuration files to define the pipeline structures, enabling flexibility and scalability in data processing.

Data Loading and Transformation:

INSPYR Solutions employed various data loading methods including Azure Data Lake Storage Gen2 (ADLS2), Azure Synapse Analytics, and Azure SQL Database to ingest data from disparate sources into



a centralized repository. We also utilized Azure Databricks notebooks for processing JSON files into delta tables, ensuring efficient storage and query performance.

Real-Time Data Integration: The team integrated real-time data streams on the Power BI dashboards from the Genesys Cloud API, and Verizon data sources that enabled continuous monitoring and analysis of critical business metrics such as call queue performance and network utilization.

Medallion Architecture

Implementation: INSPYR Solutions' technical team leveraged Azure Databricks and Synapse Analytics to implement the Medallion Architecture for efficient data processing and analytics, ensuring seamless integration with existing business intelligence tools and reporting frameworks as well as modernizing the system.

Outcome

Over the course of the project, the technical team created a simplified yet robust solution where data would come into file storage before being consumed into Azure Synapse. INSPYR Solutions also set the client up with Azure Data Factory, featuring 10 parallel threads and a medium core. This was a cost-effective solution that maximized power and balanced cost so the client could get the most out of the solution while staying within budget.

Before the client initiated this project, it would take over eight hours each night for the on-premises system to refresh data. With the solutions in place, this refresh ran eight times faster – under 20 minutes for incremental loads. The team also set the client up with a live data refresh every 15 minutes to give the team real-time insights, enabling them to make decisions about the business with timely information.

The benefits of the solutions included:

Improved Data Accessibility: By consolidating data from diverse sources into a unified platform, the client gained enhanced visibility and accessibility to critical business information.

Enhanced Scalability: The Azure-based solution provided scalability to accommodate growing data volumes and evolving business requirements, ensuring long-term sustainability and performance.

Real-Time Insights: The solution enabled real-time monitoring and analysis of key performance indicators, empowering stakeholders to make informed decisions promptly.

Cost Optimization: By leveraging Azure cloud services, the client achieved cost efficiencies through pay-as-you-go pricing models and optimized resource utilization.

Actionable Insights: The unified analytics environment facilitated the generation of actionable insights and reports, driving operational efficiency and strategic decision-making across the organization.

Through strategic collaboration and innovative implementation of Azure cloud services, INSPYR Solutions successfully transformed the client's data integration and analytics capabilities, laying a solid foundation for future growth and competitiveness in a data-driven business landscape. The streamlined processes, real-time insights, and actionable intelligence delivered by these solutions positioned the client for continued success and innovation in the various industries the company serves.

Client Profile

The client is a U.S.-based worldwide enterprise operating in diverse sectors such as telecommunications, customer service solutions, and digital marketing. The company has rapidly grown since its inception to offer over 20 product lines with a focus on digital acquisition and performance marketing. With a focus on centering people and creating a thriving company culture, this client has won numerous workplace awards based on employee feedback.

Technologies Supported

Azure Synapse, Azure Data Factory, Databricks, Genesys Cloud API, SQL Server

About INSPYR Solutions

Technology is our focus and quality is our commitment. As a leading expert in delivering flexible technology and talent solutions, we strategically align industry and technical expertise with our clients' business objectives and cultural needs. Our tailored offerings include a wide variety of professional services, project solutions, managed services, and talent resources, all bolstered by our strategic partnerships with cutting-edge technology services. By always striving for excellence and focusing on the human aspect of our business, we work seamlessly with our talent and clients to match the right solutions to the right opportunities. Learn more about us at www.inspyrsolutions.com.