Domain	Mining
Service	DevSecOps
Location	USA

VALUEADD SOFTTECH & SYSTEMS PVT. LTD.

Objective

Managed and enhanced a crucial US mining compliance portal, including its migration to **Azure Cloud.** Ensured high uptime and seamless accessibility.

CASE STUDY

Scope

- Assist a client with the migration of a mining compliance portal to **Azure Cloud.**

- Manage ongoing site updates and enhancements.

- Ensure consistent uptime and accessibility for the portal.

Value Added

- For the client, it was the first outsourcing experience & hence it was very essential that along with the tech support the team coordination between the client & VAST teams across timezones overlap to ensure faster turnarounds.
- The VAST team optimized the code & also automated data transfer processes from MSHA to the PC database.
- The DevOps team helped identify & set alerts/triggers as a proactive activity for portal availability

Solution

- ✓ Offered a single-window service solution, assisting the client in a seamless transition and maintenance of the portal, which exceeded customer expectations.

- ✓ Coordinated closely between the client and VAST teams across different time zones to ensure fast turnarounds, marking client's first successful outsourcing experience.

- ✓ Optimized code and automated data transfer processes from the Mine Safety and Health Administration (MSHA) to the Predictive Compliance (PC) database.

- ✓ The DevOps team played a crucial role in identifying and setting up alerts and triggers as proactive measures to ensure portal availability.

Frameworks & Tools

Microsoft SQL Server

React JS

Azure

Microsoft .NET

VALUEADD SOFTTECH & SYSTEMS PVT. LTD.

Objective

VAST and a US wireless communication supplier collaborated on a real-time analytics platform for mines, focusing on data monitoring and analysis. Leveraging architecture consulting, VAST delivered a scalable solution.

CASE STUDY

Scope

- Ingest the streaming data emitted by the communication system in real-time.
- Process the data efficiently to derive meaningful insights and analytics.
- Provide real-time visualization of the analytics to enable monitoring and decision-making.
- Be scalable to handle large volumes of data emitted by the communication system across multiple mines.
- Recommend a technology stack that could support the requirements for real-time data processing and visualization.
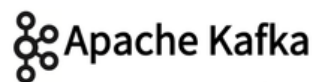
Value Added

- Created a scalable architecture to manage large streaming data volumes, ensuring future growth aligned with client needs.
- Proposed **Spark, Kafka, Python, and React** for real-time data processing and visualization.
- Worked closely with client stakeholders to address challenges and improve the solution.
- Applied microservices architecture and containerization, ensuring robustness, maintainability, and scalability.

Solution

- ✓ Conducted a comprehensive analysis of the client's requirements and designed a detailed architecture for the real-time analytics platform.

- ✓ Leveraged cutting-edge technologies such as Spark, Kafka, Python, and React to enable real-time data ingestion, processing, and visualization.

- ✓ Ensured the solution provided scalability, flexibility, and performance, effectively addressing the client's challenges.

- ✓ CI/CD setup for seamless transition of code via tagged auto versioning and monitoring dashboards with logs analytics.

- ✓ Setup of lower environments Dev, QA, UAT using Azure AKS.

- ✓ End-to-End Application Provisioning using IaC (Terraform).

Frameworks & Tools

- python™
- APACHE Spark™
- Apache Kafka
- React JS
- GitHub
- NGINX
- Jenkins
- Terraform
- Prometheus
- Grafana
- SQL Azure SQL

Domain	Mining
Service	OPD
Location	USA

VALUEADD SOFTTECH & SYSTEMS PVT. LTD.

Objective

To build an analytics portal and data engine to offer a smart dashboard for mine operators to track real-time progress and productivity. Modules for Location, Production, and Compliance streamline data from multiple sources for efficient monitoring.

CASE STUDY

Scope

- The transition from manual reporting to automated, paperless reporting for miner and production activities.

- Generate reports and charts from Sentinel Engine (Location) and Eforms (Production) data.

- Display real-time and historical data accurately.

Value Added

- Collaborated with the client to create test data and identified potential workflow impacts.
- Conducted thorough domain research, identifying scenarios for miners' movements and activities.
- Provided additional value through comprehensive scenario planning and domain expertise.

Solution

- ✓ We assisted the client by designing the architecture and data model for both the portal and the data engine.

- ✓ The team developed the portal and data engine in record time while staying ahead of the learning curve.

- ✓ Our team swiftly navigated challenges, achieving perfection by focusing on rapid iteration.

Frameworks & Tools

python™   Apache Kafka

React JS   tailwindcss

APACHE Spark™   plotly

PySpark   Nest.js

DELTA LAKE   Microsoft® SQL Server®