BIG Uses AspenTech Solutions for Prescriptive Maintenance on AWS

Executive Summary

BIG used AWS Partner Aspen Technology Inc. (AspenTech) to achieve equipment runtimes of 99.8 percent. BIG wanted to transition from its on-premises database to Amazon Web Services (AWS) to aggregate data from different sources and unlock insights to predict equipment downtime early and accurately at BIG's production plants. BIG used Aspen Connect to migrate data from the Aspen InfoPlus.21 process historian on AWS quickly and securely and deployed Aspen Mtell to get early and accurate warnings of equipment failure. Using AspenTech solutions on AWS, BIG also improved maintenance lead time from 1 week to 1 month.

Using Aspen InfoPlus.21 to Aggregate and Manage Large Volumes of Data

AspenTech, an AWS Energy Competency Partner, is a provider of industrial software that helps to streamline the life cycles of asset design, operation, and maintenance in challenging environments. The company develops and implements advanced solutions serving many vital industries, including downstream, midstream, and upstream. One such solution is Aspen Mtell, a predictive and prescriptive maintenance solution that offers precise and early warnings of how and when an equipment breakdown will occur, as well as directions on what to do in response. Aspen Mtell runs on AWS. AspenTech uses various AWS services, including Amazon Elastic Compute Cloud (Amazon EC2), which provides secure and resizable compute power for practically any workload. The cloud deployment of Aspen Mtell and Aspen Enterprise IP.21 Historian, a service that aggregates and manages data, runs various critical components—including the Aspen Mtell application, license, and SQL servers—on dedicated Amazon EC2 instances. In January 2023, AspenTech and AWS won the IoT Partner Ecosystem of the Year award in the seventh annual IoT Breakthrough Awards program for developing an asset maintenance and reliability solution featuring Aspen Mtell.

About Bangkok Industrial Gas (BIG)

BIG is Thailand's leading innovative industrial gas and climate technology company and a subsidiary of Air Products and Chemicals Inc. (APD), a company listed on the New York Stock Exchange (NYSE) and part of the Fortune 500.

For more information, go to: www.bigth.com

AWS Services Used

- Amazon EC2

Benefits

- Extended the lead time for maintenance from 1 week to 1 month
- Achieved 99.8% equipment runtime
- Improved energy efficiency
- Reduced total cost of ownership for AWS connectivity
- Achieved early and accurate prediction of equipment failures

” AspenTech solutions on the AWS Cloud can be quickly and effortlessly implemented. We are using the analytic tools to get the timely insights that we need.”

Rithidej Wadlom
Operational Excellence Director, BIG

After selecting AspenTech to support its data migration, BIG transfered data from Aspen InfoPlus.21, a data historian for aggregating and managing large volumes of near-real-time and historical data, to AWS.

Improving Maintenance Lead Time from 1 Week to 1 Month Using Aspen Mtell

In 2019, BIG started using AspenTech solutions. The organization analyzed its needs and the AspenTech solutions that were available for about 1 month before implementing the solutions on its own with support from AspenTech. BIG started using Aspen Mtell for predictive and prescriptive maintenance after transferring its data to AWS. A proof of concept from AspenTech illustrated how simple it is to use Aspen Mtell to forecast equipment failure. Currently, BIG employs Aspen Mtell solely in place of alternative preventative maintenance programs. “Aspen Mtell helps us monitor the condition of our equipment, improving its reliability,” explains Rithidej Wadlom, director of operational excellence at BIG. “We wouldn’t have been able to reach this degree of equipment availability without Aspen Mtell.”

Previously, the company had a 1-week lead time to react to maintenance issues. Using Aspen Mtell, BIG now has more than 1 month. Having more lead time helps BIG improve maintenance planning, implement better decisions, and manage its business more productively and effectively. Now that the firm can forecast and avoid downtime, its equipment runtime has improved from 99.5 percent to 99.8 percent.

BIG’s production safety and sustainability initiatives have benefited from the improved reliability that results from using Aspen Mtell. “We deliver industrial gas directly to customers in almost real time,” says Wadlom. “If our procedure is disrupted, it impacts the client deliveries immediately. Using Aspen Mtell, we can meet our customer deliveries consistently.”

Continuing to Improve Performance on the Cloud

Due to AspenTech solutions running on AWS, BIG is now equipped to aggregate and apply insights to run its plants efficiently, cost-effectively, and sustainably. Through BIG collaborating with AspenTech, the performance of the process will subsequently be further improved. “AspenTech solutions on AWS can be quickly and effortlessly implemented. We are using the analytic tools to get the timely insights that we need,” says Wadlom.

About AWS Partner Aspen Technology

Aspen Technology (AspenTech) is a global software leader helping industries at the forefront of the world’s dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation, and maintenance lifecycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer, and faster to improve their operational excellence. To learn more, visit AspenTech.com.