MODERNIZING FIELD MANAGEMENT WITH AZURE SERVICES

Oil and gas inspection provider transforms operationally from on-premise to the cloud

A leading provider of inspection and equipment repairs for the oil and gas industry in the United States for more than 70 years, the organization employs the top industry experts in the arena for inspection services, solutions, and safety. They design and build their own specialized piping inspection tools to investigate pipes for corrosion, wall thickness, weak spots, to identify where and what equipment needs to be repaired or replaced.

CHALLENGE

Through the acquisition of another company, they inherited a promising custom-built field management system (FMS) which they decided to rollout to the entire organization. Knowing that this FMS would become a business critical application, Catapult was brought in to assist in ensuring the FMS was ready to scale and support the broader organization. Almost immediately, Catapult discovered the web-based FMS, supporting subsystems, and development tools were installed and running from a single collocated server. This presented several concerns including, security, reliability, availability, scalability, and business continuity.

One of the more pressing concerns was that installing and deploying software updates, required a server restart, causing the tool to be repeatedly unavailable and making the deployment process prone to errors. In addition, information stored on a single server put their information at unnecessary risk for a data breach. The client also struggled with adding new features and functionality for business users to their business critical application.

SOLUTION

Catapult evaluated the specific business needs for the FMS application, including scalability and ability to enhance the application to support a broader set of field operations. We assessed the application's cloud suitability, crafted a migration strategy for each workload and provided a cloud roadmap complete with proof of concept. The client was choosing between purchasing a pre-packaged solution that would require them to completely define their business needs in order to select a solution, or continue to build on the current application while evolving with the organizations needs. Catapult's findings indicated that the custom-built FMS application would provide a solid foundation with more flexibility to customize it as their business changed, allowing them to create a distinct competitive advantage in their market.

Catapult migrated the client's FMS application to the Azure cloud, modernizing the application by leveraging several different Azure platform services such as Azure Traffic Manager and Azure Application Insights. We then trained their development team on monitoring and maintaining the cloud based services and security. Catapult also automated

delivery for new functionality using Azure DevOps, as well as conducting automated testing. Code was refactored to fully leverage Azure services and to maximize testability, scalability, and performant software architectural qualities. Enhanced and improved FMS application features were delivered in an agile manner to significantly expand their application development team. Finally, a mobile Field Management System was created to streamline workflow for employees who worked remotely at client sites.

RESULTS

Once deployed to Azure, the FMS application realized several benefits:

- **Application availability improved** with support scaled from 50 users to over a 1,000 with a multi-region deployment leveraging Azure Traffic Manager, Azure SQL services and Azure Storage.

- **Disaster recovery was enabled for the first time** with recovery time speed after a catastrophic failure from days to minutes with cloud data hosting and Azure DevOps code repositories.

- **Enabled scalability** with Azure Web App services to adapt to spikes and lulls in user traffic while automatically optimizing cost.

- **Improved application performance** for user experience page load times from minutes to seconds by improving read access to complex business objects and configuring automatic database query tuning.

- **Increased application monitoring** with Azure Application Insights to prioritize bug fixes and performance tuning.

- **Enhanced security** ensuring that data is encrypted both in transit and at rest.

- **Improved quality** with Azure DevOps build pipelines to automate deployment and testing of the FMS application releases.

How can we help you?
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