Catapult

EMBRACING AZURE DEVOPS TO IMPROVE OPERATIONS OF MAJOR MANUFACTURING COMPANY

The IT services division of a large technology manufacturer supports the maintenance and repair of servers and devices sold worldwide. For more than five years, dozens of their departments had used Siemens Omneo to track telemetry data for company assets, storing the data in individual databases. The company's data science team was determined to remove the data silos and create a foundation for their new data-driven objectives.

They needed to replace Omneo with a system that could provide new capabilities and flexibility via scalable hybrid-cloud solutions to manage their data engineering and data warehousing, as well as the applications that consumed them. **The establishment of DevOps for Data was critical to enable their new data science teams and their move to the cloud.**

SOLUTION

Catapult uses Azure DevOps for traditional application development of DevOps pipelines for basic code validation, automated test and deployment to an application service. For example, this customer has an application which uses AI and ML to help technicians discover fixes more quickly. The company uses Azure DevOps, Azure Data Factory and Azure Functions to achieve best practices for application deployment.

Catapult also developed a ML-focused DevOps (MLOps) pipeline leveraging Azure Data Factory and Azure ML Pipelines to help data scientists create their models within the bounds of company administrative governance, cost management

and security. The MLOps pipelines retrain the models automatically keeping data models up to date, enabling data scientists to think long term by implementing standards to productionalize these models. Other data science teams benefit from the consistent and repeatable approach for onboarding their models, as well as enabling new data science use cases by integrating with existing tools/methods.

To further reduce roadblocks to using Azure ML and Azure Databricks, Catapult worked with the company to create an Azure DevOps Artifact Store to use as a custom library shared among the teams. Previously, users had to upload libraries and shared assets to mounted Blob Storage shares in Data Bricks, creating roadblocks for adoption as well as inconsistencies because the code was not versioned and tested. Now, they publish to a shared Azure DevOps artifact store by enabling a standardized branching strategy, pull request policy, and CI/CD process to develop and publish artifacts that are consumed via Python package management in Data Bricks and Azure ML.

Catapult also improved project planning at the company giving users more visibility to the project status. Catapult created a process template that allows for custom states, so developers can now track the individual workloads in a granular manner rather than a large vague step. Catapult also integrated a preview feature of Azure DevOps, Azure Analytics Views, with Power BI to export data and create a visual reporting tool for business users and data consumers. This view allows end users to see where data is available, which has greatly increased user satisfaction and improved project planning.

RESULTS

Catapult has drastically reduced operational and administrative overhead by creating an Infrastructure as Code (IaC) DevOps pipeline to automate the process of onboarding new teams into the company's Azure data warehouse. The IaC process automates resource provisioning, access and network-level security, and allows for consistent architecture and governance schemes throughout their infrastructure. Prior to implementing this new process, it took each federated team 4-8 hours to receive access, a process that can now be done within 30 minutes. This automation improved the speed of access to the data dramatically by removing organizational challenges, and improved quality by ensuring new teams are set up with the same access, tools and structure. It has also increased customer satisfaction by enabling access to Azure DevOps to new company teams.

Catapult has now implemented Azure DevOps for multiple initiatives in this company, using nearly every component, including boards and backlogs, task tracking, and repos, as well as pipelines for deployment, testing, and releases. The most critical usage of Azure DevOps at the company is the foundation of their big data processes. In all, Catapult has helped set up more than 20 DevOps pipelines for data, operations, application deployment, and operational automation, which are used for all net-new work. In addition, Catapult's data scientists lead weekly best-practices meetings at the manufacturer for the deployment of code within their data science community, further expanding the reach of DevOps and Azure usage across the entire company landscape.

CATAPULT'S IMPACT:

- Centralized data engineering enabled data sharing to improve insights

- Shared data enabled collaboration across operating units and teams

- Increased the quality of the data models produced

- Reduced roadblocks when using Azure ML and Azure Databricks with a custom library

- Reduced operational and administrative overhead drastically by automating the process of onboarding new teams into the Azure data warehouse

- Improved project planning by providing visual reporting tools that helps end users understand their data status to plan accurately for projects

How can we help you?
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