TN Child Support Program modernizes legacy infrastructure with Deloitte and AWS

In Tennessee, the Department of Human Services (TDHS) administers the Child Support Program with services provided by local district attorneys, DHS staff and private agencies under contract through its 48 child support offices. There are over 40 technical staff members, 70 interface partners, and 3,000 end-users that leverage Tennessee's automated child support system (TCSES) to deliver these services.

TDHS recognized that their 25-year old child support system needed platform and technology modernization. The existing technology was hampering integration with enterprise-wide shared services and technologies, as well as limiting the implementation of functionality that would help to better serve the citizens of the State of Tennessee. But finding a modernization approach that didn't encumber the workers that interfaced with the application during and after implementation was also critical to the initiative.

Deloitte delivered a solution to migrate the TCSES application from its legacy mainframe environment (z/OS, COBOL, CA Gen, Easytrieve, JCL, etc.) to a new Linux operating system, new Java code, and a modernized AWS Cloud infrastructure. This solution delivered a functionally equivalent system with no changes to the end user experience.

What happened next:

Mainframe applications often encompass the heart of an organization's workload, but at a detriment to sustainability and cost savings, as was the case for TDHS. Deloitte addressed TDHS's need for agility and flexibility by developing these solutions.

Migrating the mainframe:

Using the automated Application Modernization Transformation solution powered by innoWake™, Deloitte migrated from the legacy mainframe to the Linux platform in the cloud while keeping 1:1 equivalence for code and functionality.

In parallel, the data was migrated from IBM mainframe DB2 to Linux DB2 database in AWS. This method allowed for the preservation of the business processes, the integration of the existing interface partners, and the retention of the end-user experience. Additionally, integration with enterprise services for address validation and identity and access management was done.

1.65M lines of CA Gen and COBOL	›	Java
390 screens (3270)	›	Angular/TypeScript and Java
650 batch jobs	›	Linux and Java in AWS
7200 datasets	›	Linux in AWS
1.2TB data IBM DB2 z/OS	›	IBM DB2 LUW

Building in the cloud:

Deloitte built-out environments within AWS Cloud to host the re-platformed TCSES application including online, batch, and data. And automated processes migrated workloads to AWS without interrupting the existing legacy systems.

AWS Cloud services including AWS Direct Connect, AWS Transit Gateway, Amazon VPC, Amazon S3, Amazon S3 Glacier, Amazon EBS, Amazon EFS, Amazon CloudWatch, AWS KMS, AWS Lambda, Amazon SNS, AWS Systems Manager and AWS CloudTrail were set up as part of this project. In addition, disaster recovery leverages multiple AZs within a region to deliver the Recovery Time Objective (RTO) and Recovery Point Objective (RPO) requirements.

With AWS Cloud, TDHS now has the flexibility to adjust capacity infrastructure and storage at the click of a button. And Amazon CloudWatch allows TDHS to monitor the health of the servers, set up alerts and proactively adjust as needed.

The wins:

- Kept 1:1 equivalence for TCSES code and functionality with the implementation of an automated code conversion and migration process.
- Continued connections to 70 interface partners with no disruption. And 3,000 end users across 48 child support offices required minimal training to leverage the re-platformed solution.
- Expedited development cycles and provided stable release ability with the implementation of DevOps tools and processes.
- Provided the ability to assess real-time infrastructure health metrics, alerts, and audit logs all in one place with Splunk monitoring & dashboards.
- Made available the means to leverage infrastructure capacity on-demand for use of only what's needed.
- Created potential to incrementally modernize the TCSES application and to integrate with state-wide shared services and technologies based on agency priorities.

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