



CLOUD MIGRATION

INDUSTRY: Federal Government

SERVICE: Cloud Strategy, Assessment, Security, and Application



CHALLENGE

Data to Decisions (D2D) platform had challenges related to the performance of the platform. The D2D platform hosts various data analytical tools (Tableau, Microstrategy, R, SOLR, Pentaho, etc.) along with few SQL Server database repositories.

GSA's existing infrastructure hosting contract with CGI was expiring soon (within eight months). The renewal contract was very expensive and GSA's management wanted to move the D2D platform into the cloud. GSA wanted to migrate the entire D2D platform from CGI's on-prem data center to AWS Cloud in six months' timeline including all Production, Development, and Test environments.



SOLUTION

OmniSolve quickly wrote up the scope of the work, given the aggressive timeline to migrate the entire D2D platform in six months to AWS cloud. OmniSolve proposed to GSA management to execute the migration effort using Agile and to automate the approach.

Using Agile allowed the team and all platform stakeholders to monitor and manage the migration effort for better coordination and collaboration. The automation approach allowed the team to develop automation code once and be able to re-deploy/re-execute the same code (with minimal customization) to migrate all D2D platform environments (Development, Test, and Production).

OmniSolve also introduced the concept of DevOps (DevSecOps loosely) to GSA. A majority of this solution was built using DevOps methodologies to build, automate, and deploy various components of D2D platform/system.

The solution was developed in two parts (some tasks were executed in parallel):

Part One: Complete automation of infrastructure provisioning and configuration in AWS cloud environment (IaC - Infrastructure as Code). This solution was developed using Terraform and Cloud Formation (CF) templates. The Terraform approach was adopted, as the code can be cloud agnostic.

Part Two: Complete automation of all D2D platform's application and database components configuration and deployment process. This automation was performed using Ansible playbook coding, and CircleCI pipeline development.

- Developed Infrastructure automation code in four 2-week sprints including network components, security scanning tools, firewall configuration changes, and integration with SecOps VPC
- Developed application and database automation code in three 2-week sprints
- Developed Continuous Integration (CI) process of both infrastructure code and application (incl. Database) code in two 2-week sprint



OUTCOME

OmniSolve led this entire migration effort from start to end. OmniSolve actively engaged all project stakeholders, coordinated epics/stories (sprints), led in developing target state architecture for D2D platform, and successfully migrated the D2D platform to Cloud in the given timeframe. OmniSolve also introduced new concepts and provided a standard playbook to migrate any/all applications to cloud for GSA.

This solution has been developed with standard design principles in mind: scalability, rapid deployment, and process optimization. By moving D2D into the cloud, GSA saves money, improves performance, and enhances the operational efficiency to serve both internal and external GSA customers.



TECHNOLOGIES & METHODOLOGIES

- AWS
- Agile
- CircleCI

KEY PERFORMANCE METRICS

- The D2D platform is now an **end-to-end automated platform** (incl. infrastructure automation/provisioning, application and relevant database components automation/provisioning)
- The entire deployment of any one D2D environment **can be done in 7-8 hours** (compared to 2+ months in CGI data center) multiple updates and follow ups)
- The D2D platform's automation code is **cloud agnostic**