

AWS DevOps Competency Case Study

CTAC NOC: A Multi-Client DevOps Solution



Introduction to Customer:

CTAC is a DevOps focused system integrator with a 25 year history of supporting Federal, State, and Local government clients in a variety of IT Management solutions. In the service of the Federal Government, CTAC has designed and deployed DevOps-centric AWS solutions for multiple agencies including the General Services Administration (GSA), United States Consumer Product Safety Commission (CPSC) and National Highway Traffic Safety Administration (NHTSA). CTAC was able to use this experience and knowledge to address a DevOps initiative from the Departmental Appeals Board (DAB) and Health and Human Services (HHS). The agencies involved in this work have health and safety mission focuses that include public health, efforts to protect from risk or injury, medicare and medicaid services, and healthcare claims and appeals.

Overview of Challenges:

Many federal agencies require custom SaaS solutions but do not yet themselves have mature/secure DevOps-centric infrastructures available to host. DAB and HHS both expressed the need to build custom applications and host each in the cloud. DAB's Automated Case Tracking System (ACTS) was to be built track and manage all cases received, which included Medicare, Nursing Home, Tobacco, and Social Security appeals to name a few. HHS required a tool to visually display population estimates for electricity-dependent devices by zip codes, states, and national counts. Each agency's requirements specified a DevOps cloud hosting solution, but did not have DevOps frameworks to support the process and applications. To complicate the situation further, both DAB and HHS had entirely different technology stacks. CTAC was charged with the design and deployment of a DevOps solution that had the capability of supporting a diverse client base.

Details of Solution:

CTAC replicated the successful DevOps approach and tool suite implemented across previous federal clients and designed and built a managed Jenkins-based DevOps platform with the principles of idempotence, repeatable processes, shared build structures, autoscaling, and continuous integration/continuous delivery (CI/CD). Leveraging AWS's Virtual Private Cloud (VPC) and Application Load Balancers across two Availability Zones (AZ), CTAC built a universal DevOps platform that was capable of supporting the needs of both the DAB and HHS. CTAC built out its NOC with a clear boundary, configuring a multi-AZ Relational Database Service (RDS), Consul, AWS S3, and Splunk as its core services. Clients, both internal and external, can enable secure account/VPC interconnect in order to leverage these backend computing services. In support of DAB's case tracking system, CTAC built out an AWS VPC in a DAB-owned AWS Account and "locally" configured LDAP, DNS, Jenkins, Puppet, Splunk Search Head and secured access with Sophos UTM. The DAB VPC and CTAC NOC were peered, providing the DAB VPC with all of the platform core services required to operate. Similarly, CTAC built the emPOWER 3.0 application at HHS, and leveraged the CTAC NOC once again to provide the required platform core services. CTAC stood up EC2 instances across 2 AZs behind an Elastic Load Balancer and

Cloudfront. By leveraging the same tools and processes and security processes for each client we were able to achieve significant time and cost savings. Each federal client received a DevOps solution to their needs. For DAB, they received a modern SaaS solution enabling quicker case management and HHS received the SaaS Solution which is used by government personnel, most recently in planning and conducting emergency evacuations during and after Hurricane Florence.

Summary:

CTAC built out the capability to provide our clients with a quick, secure and economic solution in deploying DevOps solutions. The transformation from both legacy on premise solutions and siloed hosting to a Peerable DevOps PaaS provided our clients with:

- Higher quality product releases at higher velocity
- Shared DevOps best practices
- Economies of Scale
- Cost Savings

The CTAC NOC provides our clients with a robust DevOps solution that is security compliant and compatible with any chosen technology stack in place.