

FEMA Refactors & Modernizes Its Infrastructure for a Cloud Environment



The Problem

As a governmental agency in charge of a system critical to the emergency alerting of American citizens, the FEMA-IPAWS team had a duty to modernize the IPAWS application stack with state-of-the-art functionality, security, performance, and reliability. With one of the datacenters hosting IPAWS about to be decommissioned, FEMA went searching for a new platform that could support this modernization, while streamlining the application stack and optimizing cost.



The Solution

The DLT Solutions and Hidden Lake Technology teams partnered and proposed an Amazon Web Services Gov-Cloud solution to meet the strict compliance requirements and the ATO process for the Department of Homeland Security while providing the portfolio of cloud services required to modernize the application stack. This solution allowed for the refactoring of several application components, displacing expensive commercial software with more cost-effective native cloud services. It also permitted the timely migration off of DHS data centers in favor of the cloud.

How Were AWS Services Leveraged?

DLT Solutions and Hidden Lake Technology proposed a three-tier solution for the IPAWS application, utilizing several environments and numerous AWS services. This architecture included multiple AWS accounts connected to on-premises data centers using Transit gateway and AWS Direct Connect. The application runs in multiple availability zones and utilizes Elastic Load Balancing, Auto Scaling, Elastic Compute Cloud, Relational Database Service, and Simple Queuing Service. Monitoring tools Security Hub and AWS Config are utilized, along with and security is achieved with GuardDuty, WAF, CloudTrail, and CloudWatch.

Third-Party Tools

CloudCheckr, Zendesk Customer Support, Retool

The Outcome

With DLT and Hidden Lake Technology providing professional and managed services support, FEMA was able to migrate the IPAWS application stack into AWS, refactor commercial components with cloud-native services, and achieve ATO with the Department of Homeland Security. The system went live in April of 2021 and is currently a production workload in AWS.

Lessons Learned

Throughout this experience, the FEMA-IPAWS team has learned cloud migration and DevOps best practices for complex applications that require thorough testing and documentation, all while meeting strict compliance requirements. FEMA is in a position to advise other government offices on cloud strategy, as well as support secure and compliant workloads in AWS GovCloud.

About DLT Solutions

DLT Solutions is the premier government solutions aggregator that specializes in understanding the Cloud needs of the federal, state, local and education markets.

About Hidden Lake Technology

Hidden Lake Technology is an AWS Professional Services provider, advancing customer utilization of the AWS Cloud Platform through strategic advising, state-of-tech architecture, engineering and management.

About IPAWS

The Integrated Public Alert and Warning System is an architecture that unifies the United States' Emergency Alert System, National Warning System, Wireless Emergency Alerts, and NOAA Weather Radio, under a single platform.

