



**Flux7** 

**Case Study**

**High Availability & Uptime  
Architected by Flux7 for Emergency  
Communications Provider**

# Case Study

## High Availability & Uptime Architected by Flux7 for Emergency Communications Provider



**Profile** This organization is a provider of advanced emergency communication services that is revolutionizing the way people and 911 operators communicate and the speed at which first responders arrive on scene. Just one touch of a button transmits to 911 all the information it needs -- such as a person's precise location, type of emergency and medical data. With its technology that bypasses the 911 systems' current telephony infrastructure that was built in the 1960s, this mobile technology start-up is saving lives with its emergency communication solution.

**Challenge** As a conduit between people in emergency situations and the help they desperately need, this communication company has a very high bar when it comes to availability. Simply put, if the service goes down, people's life line goes with it. As a result, consistently high availability was a strict requirement as this organization looked to expand its platform. In addition, as this company sends highly sensitive medical data to emergency dispatch centers, ensuring security of customer data is critical to its mission. Part and parcel with security was the team's desire to proactively build HIPAA compliance into its DevOps in the cloud solution.

**Solution & Benefits** This communications company turned to Flux7 to help it address these challenges through a highly available, reliable cloud architecture. The Flux7 team started by designing an infrastructure that enabled Asterisk, an open source telephony switching and private branch exchange for Linux, on AWS. The design included deploying Asterisk and Django, the company's Web development framework of choice, in a high availability Docker Swarm cluster on Amazon EC2. By Dockerizing Django and Asterisk, Flux7 was able to create consistent images for all environments and gave this communications firm the ability to run Asterisk successfully in local environments. Specifically, Docker Swarm provides the firm with the ability to deploy, update, orchestrate and scale their applications reliably.

Adding additional depth to the solutions strength was Flux7's creation of an application-aware, custom load balancer layer between Django and Asterisk. The customer load balancer allows connection-aware load balancing amongst Asterisk servers such that they can auto-scale up or down based on load without causing any disruption in ongoing phone call through the system. Jenkins was deployed for continuous integration and delivery (CI/CD) with Jenkins jobs created to deploy Django and Asterisk instances within Docker. The Jenkins-based CI/CD helped the organization avoid critical downtime that many organizations can encounter when new code is deployed. With Jenkins jobs at the helm, taking a migration file and executing the deployment, the firm is able to conduct near zero-time application changes and even DB schema migrations without dropping connections.

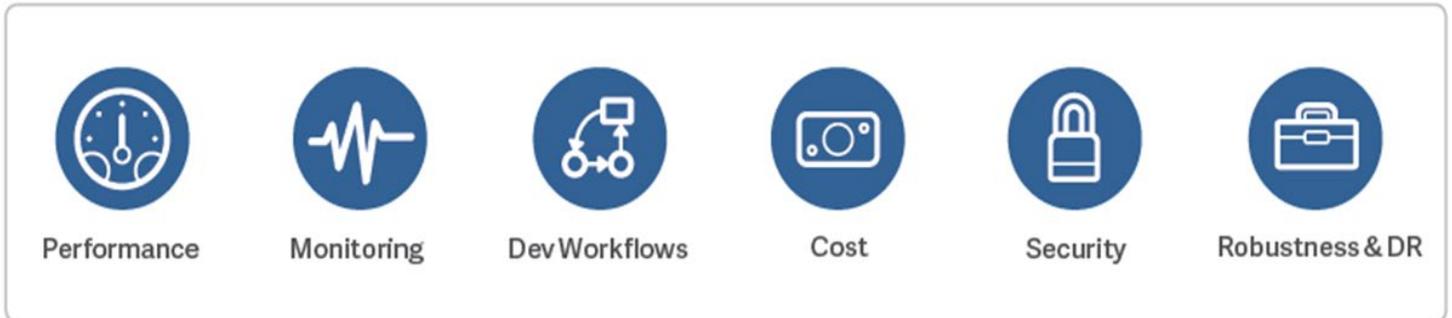
For security and HIPAA compliance, Identity and Access management (IAM), API logging, access monitoring, and network traffic logging has been put in place. Also included is a one click Disaster Recovery (DR) solution. Further, through playbooks that orchestrate repeatability in configurations across the environment, Ansible helps ensure best practice security and compliance policies are in place. Serving to keep customer data safe and secure, Ansible simultaneously reduces the risk of manual error, helping further assure the security that comes with a highly available, highly reliable system. All these systems combine to ultimately provide what matters most: a truly dependable emergency communication system that people can and will rely on to save their lives.



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### Attune Improves Infrastructure Across Six Functional Areas:



**Maintain Security, Compliance and Uptime** Flux7 is recognized by AWS as both a Healthcare and a Life Sciences partner, assuring you we excel at compliance. Implement complex, industry-specific, government, security and privacy standards, including HIPAA and PCI. Secure your infrastructure with best practices and achieve business continuity through automated disaster recovery.

**Implement a DevOps Strategy** Improve productivity through DevOps, containers, automation and CI/CD.

**Start Right with Best Practices** Reduce costs and improve security, compliance and uptime with expert knowledge.

**Create Optimized, Secure and Scalable Cloud Infrastructure** Meet customer demand by using best practices and deep architectural knowledge to create selfmanaging frameworks for business agility.

**Improve IT Ops and Developer Productivity** Get the most out of your operations and development teams with optimized workflows and processes. Implement automation, container strategies and continuous deployment for more frequent, higher quality software releases.

**Leverage Spot Instances** Reduce cost by implementing a Spot strategy

## LEARN MORE ABOUT FLUX7

As DevOps and AWS experts, Flux7 offers a suite of solutions that help organizations design, build, own and manage IT modernization projects. Focused on architecting and optimizing their clients' AWS infrastructure and training internal IT teams to manage their own infrastructure, Flux7 solutions are rooted in DevOps best practices. Flux7 has delivered hundreds of agile, right-sized projects to satisfied customers across industries, creating a well-architected core from which these business can own and expand their IT modernization.