Flux7⑅
an NTT DATA Company

High Availability & Uptime Architected by Flux7 for Emergency Communications Provider

Case Study
High Availability and
Uptime Architected by Flux7

Flux7

an NTT DATA Company

AWS Premier Consulting Partner - DevOps | Migration | Security

Profile

This organization is a provider of advanced emergency communication services that are revolutionizing the way people and 911 operators communicate and the speed at which first responders arrive on the 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 emergencies 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 lifeline goes with it. As a result, consistently high availability was a strict requirement as this organization looked to expand its platform. Also, as this company sends highly sensitive medical data to emergency dispatch centers, ensuring the 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 and 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 strength of the solution 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 calls through the system.

Case Study
High Availability and
Uptime Architected by Flux7

Flux7
an NTT DATA Company

AWS Premier Consulting Partner - DevOps | Migration | Security

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 can 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.

Improve 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 self-managing 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.

About Flux7
Flux7, an NTT DATA Company, is an IT services firm that helps enterprises reduce the complexities of a new or evolving cloud automation strategy. Agile and DevOps-native, Flux7's robust services portfolio prioritizes a fast path to ROI that meets the immediate needs of technical and innovation teams focused on transformation while forging a secure and stable pathway for security and operational excellence. Learn how Flux7 helps businesses bring solutions to market faster at https://www.flux7.com