Case Study

Optimizing Lead Generation Platform with Multi-Region Resilience

Client Overview

A client managing lead generation and marketing campaigns needed a scalable and resilient platform. Their system operated on a single Kubernetes cluster in the US Central region with a hosted database, creating a single point of failure and scalability limitations.

Challenges

- Single-cluster, single-database setup posed a single point of failure.
- The hosted database, with a size of 22GB, lacked high availability.
- Scalability and resilience were limited to a single US Central region.
- Integrations for lead tracking, campaign analytics, and click monitoring required higher availability and redundancy.

Infrastructure Tech Stack	
CI/CD	GitHub Actions, HELM, flux
Database	MySQL, ProxySQL, Timescale
Cloud Service Provider	Google Cloud Platform
Version Control System	git, GitHub
Infrastructure Provisioning & Automation	
Orchestration & Management	
Monitoring Tools	
3rd Party tools / Others	redis, Kong, VICTORIA METRICS, robusta

Our Contribution

- **Multi-Region Kubernetes Deployment:** Built a fault-tolerant, multi-region cloud infrastructure by deploying Kubernetes clusters in US Central and US West. A global load balancer dynamically routed traffic, ensuring uninterrupted service.
- **Distributed Database Architecture:** Upgraded from a single-node to a three-node distributed database cluster (2 in Central, 1 in West), eliminating downtime risks and improving data redundancy.
- **Automated Disaster Recovery:** Implemented self-healing mechanisms and automated failover to keep the platform operational under any failure scenario.
- **Optimized Cost-to-Performance Ratio:** Designed a cost-effective cloud architecture that balances performance, scalability, and operational expenses.
- **Enhanced Platform Integrations:** Streamlined provisioning, call tracking, click monitoring, and webform analytics with a resilient, highly available setup.
- **CI/CD-Powered Automation:** Established end-to-end CI/CD pipelines for automated deployments, reducing manual overhead and ensuring rapid, consistent releases.

Impact Delivered

- Increased lead handling capacity by 40%.

- Reduced campaign setup time by 60% through automation.

- Improved platform performance to support Millions of request processed daily.