Executive Summary

HazardCo required a risk assessment from a DevOps perspective on their core set of applications that are deployed into the AWS Cloud. The risk assessment completed by Koan identified risks in scale, security, ability to deploy applications. The remediation work involved the deployment of AWS Control Tower, and automating DevOps processes using Infrastructure as Code tooling to increase scale, security and decrease risk.

Customer Challenges

The HazardCo Executive team needed to review risks identified by operations and technical teams, particularly those relating to systems on AWS.

The primary customer challenges were fatal crashes in core applications, stopping customers from using the services, scaling, and impacting revenue.

As all prod, non-prod , and testing services are located within one AWS account, deployments regularly hit AWS limits and failed, causing significant delays in testing and customer production outages.

In addition, as production and testing environments are in one account, this leads to poorly defined testing processes and no clear separation of prod / non-prod data, applications, and resources e.g. higher risk

Bringing up separate accounts, for separation of concerns will require HazardCo AWS deployments to have very well automated DevOps processes, and be in a place organizational to take advantage of those.

Scaling by thousands of customers

HazardCo chose AWS due to the ability to scale SAAS applications, and meet growing customer demands, from a security, scale and performance perspective.

HazardCo chose Koan due to our experience with AWS Control Tower, and the depth and strength of our DevOps practice. In addition, our ability to perform executive reviewable Risk Assessment analysis, enabled the executive to see both ROI and business benefits to the technical work.

HazardCo provides a Software-as-a-Service (SAAS) to New Zealand and Australian customers enabling full management and tracking of the Health and Safety Process.

HazardCo has significant growth of client base over the last 12-18 months, and is about to move into the UK marketplace.

Partner Solution

The APN Partner solution uses AWS Control Tower installed on a new account, with SIT/UAT environments created new, and existing production "pulled-in" underneath the Management Account / Organizational Unit.

Koan provided DevOps services to redeploy, and/create/ improve Infrastructure as Code deployments, which significantly increases scalability and reduce risks identified risks including scale, security, business continuity and operations.

Architecture
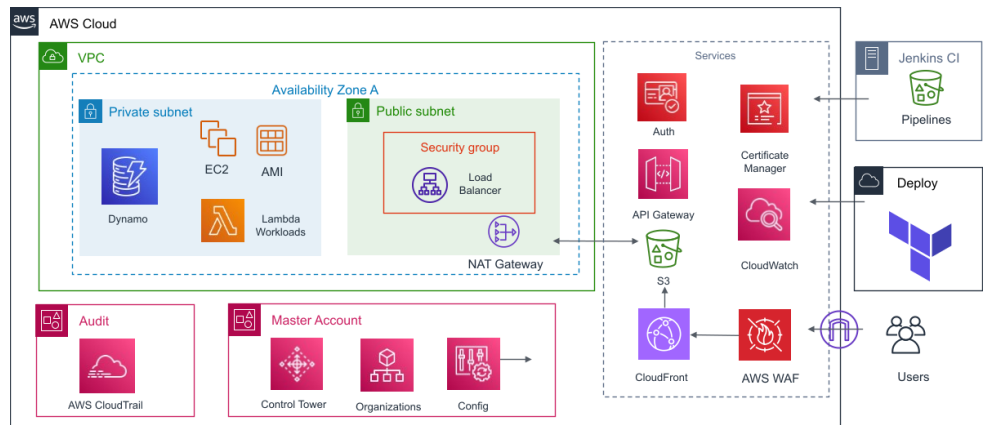
Results and Benefits

HazardCo now has all deployment steps automated using Terraform with the core Serverless Framework components left intact as the HazardCo development team understands how to use this tool. This has enabled HazardCo to increase their DevOps process significantly.

Control Tower has been deployed, and proper account separation allow HazardCo the ability to split prod and non-prod data out, and stopping performance problems caused by reaching AWS limits for one account.

Next Steps

Koan will act as the AWS DevOps Partner and take HazardCo through the Cloud Maturity Journey. HazardCo have out-sourced their DevOps requirements to Koan and signed up for the next 12 months.

Technical Outcomes

Technical outcomes included disabling AWS Config and Cloud Trial Trusted Access during CT setup, using the KMS key for CT resources, and adding CT to the management account.

We also set the admin email for the audit account. We went through every manual step for every account, replicated the manual process, and then automated it with a combination of Serverless Framework and Terraform.

By extending the current CI/CD tooling, Jenkins in this case, we ensured that the new set of services and DevOps process changes were easier for HazardCo technical teams to digest and learn. We trained the team on Terraform and drastically increased the development team's velocity.

Delivering better organizational DevOps

1. HazardCo's main "CPO account" was enrolled in Control Tower, and all resources were deployed in the newly created Terraform IAC Code,

2. Standardize and automate infrastructure creation using infrastructure as code tool, Terraform, taking out manual steps.

3. All infrastructure changes go through a CI/CD pipeline that applies quality, security, and policy checks on any infrastructure changes.

4. Deploy separate business functions/accounts into separate accounts.

5. Koan delivered the new DevOps process to the customer's engineering teams, including

    a. branching and deployment CI/CD, using Dev, Test, and Regression environments

    b. deployed with IaC

    c. triggered with Jenkins pipelines.

6. Autoscaling is configured with dynamic policy using CloudWatch CPU Utilization metrics.

Having separate accounts will decrease the load within each account, decreasing the likelihood of crashes.

About Koan

Koan is a global AWS and software development consultancy based in Wellington, New Zealand. Koan has been building and deploying secure, compliant, enterprise applications for Global customers for 20 years. Koan is an AWS Advanced Tier Partner providing AWS Certified resources for DevSecOps AWS Migrations, Modernizations, Data / ML / AI.