

## Executive Summary

NOW Broadband provide broadband services for thousands of North Island customers. NOW are the Broadband partner of Mercury, and signed up to be the wholesale Broadband provider behind Mercury's retail broadband offering.

Koan provided DevSecOps to deploy a compliant grade AWS EKS / Containerized deployment, including AD and On-Prem Hybrid Integration, on time and on budget.

## Customer Challenges

Now faced challenges including: best practice account structure, containerization, security, scale and upskilling around AWS Cloud. An important challenge was the ability to have AWS cloud delivered services communicate with NOW's on-prem services where central datastores and logging stores existed. Further, timeframe for delivery was very tight based on pre-existing commercial agreements.

## Why AWS

*Scaling by thousands of broadband customers*

NOW chose AWS in order to scale to thousands of Broadband customers in several months. Additionally, the ability to run EKS Anywhere on-prem and EKS on AWS Cloud, and integrate the services leads to reduced TCO.

AWS services enable visibility, monitoring and security all key outcomes for NOW.

## Why Koan

NOW chose Koan as the delivery partner based on our knowledge of AWS, and the perceived better "culture" of working with us. Koan was introduced to NOW via the APN Partner Network. Koan is located in Wellington, closer to Napier where NOW resides.

## About Now



**NOW provide Broadband services for personal, business to a large number of customers provided award winning services throughout the North Island. NOW are the wholesale Broadband partner for Mercury who will sell broadband in addition to Energy to customers throughout New Zealand**

## **Partner Solution**

The APN Partner solved the customer challenge by delivering and deploying the existing Node.js applications (Camunda) using Infrastructure as Code into AWS Elastic Kubernetes Service (EKS). Applications consisted of Camunda Workflow, Optimize, AWS EventBridge and AWS Elasticsearch.

## **Account Structure**

AWS Control Tower was used to deploy a Management Account, Audit, Log Archive and Networking within the Core AWS Organization Unit. Mandatory preventative GuardRails to enforce policies / mandatory detective GuardRails to detect configuration violations.

## **Scalability**

Scalability was ensured using AWS EKS Containers, deployed using AWS Elastic Container Registry (ECR) with docker images. AWS CloudWatch used for log analysis.

## **Continuous Integration**

CI/CD enabled using Bitbucket pipelines. IaC tool was Terraform.

## **Security**

In order to secure the API Layer, API Gateway was deployed in front of the Camunda Workflow application and engine. This protected the API calls from the 3<sup>rd</sup> party integration (e.g. Mercury).

To achieve audit standards repeatable AWS IaC deployment for secure architecture was used including multi-availability zones, AWS Elastic Load Balancing, AWS WAF, AWS KMS, Security Groups, NAT Gateways, and correct split between private and public subnets. Recovery Time Objective (RTO) and Recovery Point Objective (RPO) were analyzed and reviewed to ensure DR strategy was in place.

The New Zealand Information Security Manual (NZISM) Conformance pack from AWS was used to drive security.

## **Hybrid Integration**

To enable Hybrid Integration, e.g. connectivity between AWS Cloud and NOW on-prem services VPN and AWS Transit Gateway was deployed. This enabled the core node.js applications, deployed into AWS EKS to write and read back to on-prem datastores. AWS Single Sign On (SSO) enables integration with centralized Active Directory (AD).

Integrated logging with Zabbix was fulfilled using Lambda and CloudTrail for traceability.

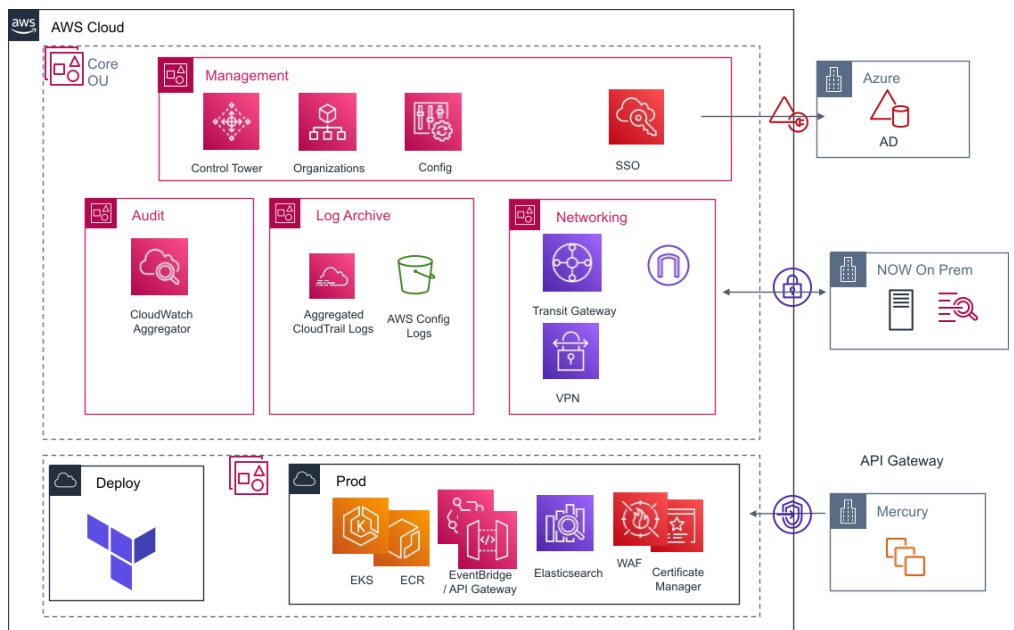
## Results and Benefits

NOW was able to deploy new services into AWS cloud on behalf of Mercury and be the wholesale Broadband provider to Mercury.

NOW AWS applications integrate with on-prem applications that are deployed using EKS Anywhere.

The deployed system was audited by Mercury and achieved high security results. Mercury Energy were able to sell broadband services to their existing customers. 10,000 customers are expected within the first 6 months.

## Architecture



## Next Steps

Next steps for NOW Broadband include ongoing service agree with the APN Partner to provide AWS security, monitoring and support.

## About Koan

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

