AWS Modernization
Cloud Native

aws partner network

Executive Summary

QV faced the challenge that after a heritage “lift-and-shift” how does the team Modernize its backend, in particular a set of coupled microservices, to ensure scalability of services. Koan provided risk analysis, a detailed Modernization plan, and modernized all QV’s backend microservices with immediate ROI.

Customer Challenges

QV faced the challenges that with the development of a new house valuation public websites demand for reports was significantly increased due to the quality of QV’s analysis and the heat in the New Zealand housing market. The primary challenges are scalability, operational visibility and how to modernize heritage applications and services on the AWS Platform. QV has millions of properties as part of their dataset, and data is spread across multiple disparate datastores.

During risk analysis a total of seven business risks were found relating to the Monarch backend microservices and outdated frameworks that the services were run on.

Why AWS

Retail House Price Reporting for New Zealanders

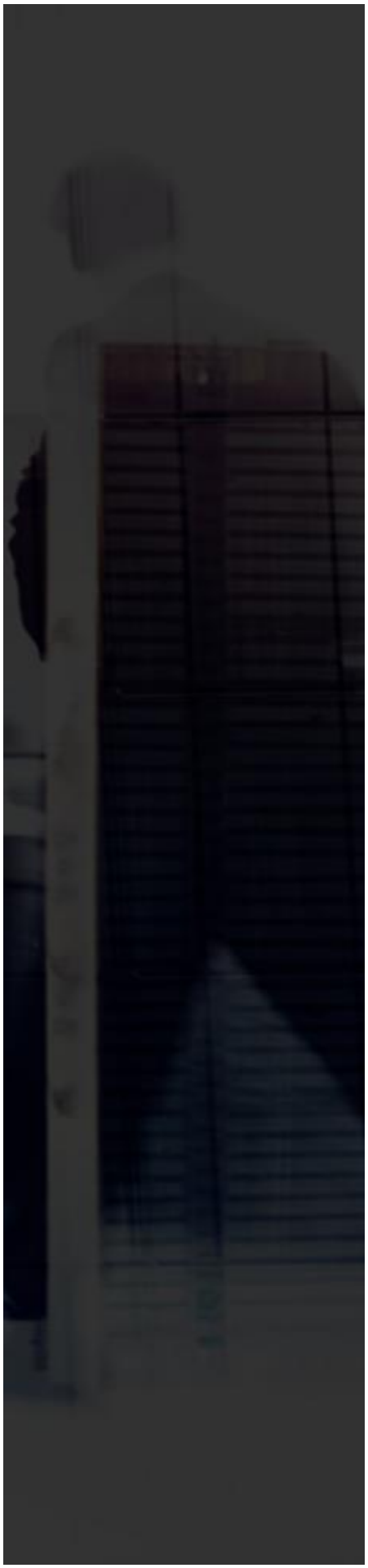
QV are an existing customer of AWS and users of AWS workspaces. QV’s AWS environment hosts all production systems and they have completed a shift and shift of these services several years prior. AWS provides security, scalability and the best partnership to QV.

Why Koan

Originally engaged at the strategic level, Koan performed a strategic risk assessment of QV’s systems. QV selected Koan due to our resources having a high level of knowledge relating to AWS Modernization work and Serverless and our specialization on AWS.

About QV

Quotable Value hold information and data on New Zealand houses, improvements, sales, property data, building consents and all related data. QV receives data from councils around New Zealand and is the Valuation Service Provider (VSP) to 80% of New Zealand councils. Data is received from councils and ingested in the QIVS database which is the primary repository of QV’s data.



Partner Solution

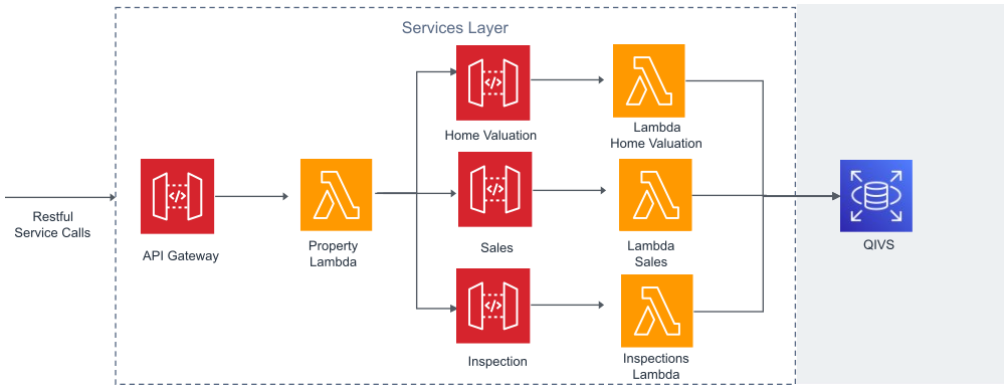
The APN partner solution goal was to implement an infrastructure solution that addresses QV reliability, accessibility, and growth requirements by using cloud-native approaches and best-of-breed practice, frameworks and methodology

The APN partner solution involved retaining the majority of existing Java code logic but migrating that code into lambda workloads. During this process, many dependencies were removed, while business logic stays in tack. API Endpoints are fronted with API Gateway, and microservices become lambda workloads.

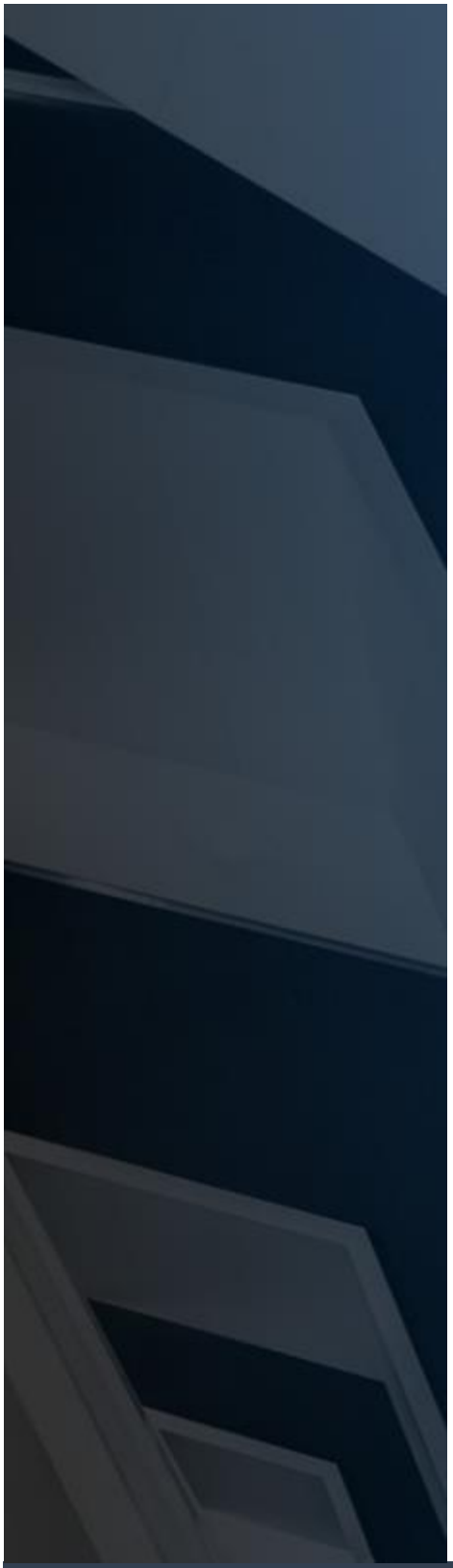
This solution enables all existing microservices to follow the same template, where by modernization is achieved with low investment and not a “big bang” rewrite. The benefits of modernization are still achieved in terms of less complex deployment architecture and the scalability of serverless lambda.

Modernization Architecture

Modernization tenants are to package lightweight containers, that center around APIs for interaction and collaboration, designed as loosely coupled microservices. Architected with a clear separation of stateless and stateful services, that are isolated from “server” dependencies. Services are deployed on self-service, elastic, cloud infrastructure and managed through agile DevOps processes and policy-driven resource allocation.



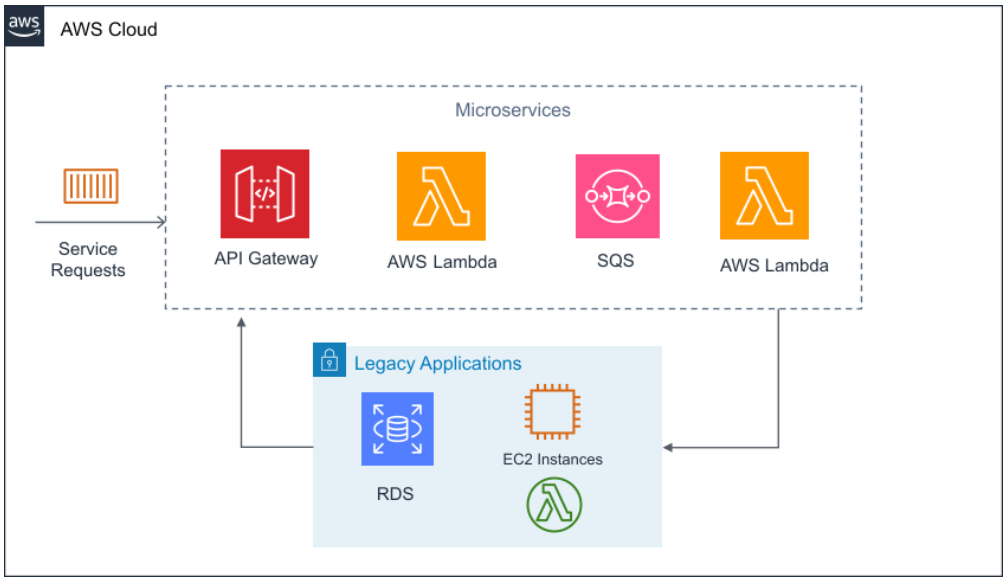
In order to minimize risk, and follow AWS suggested practices (“mobilize”) and work in an agile manner, a “pilot” service was completed initially. Allow the APN Partner to develop a common set of libraries for sharing domain types and REST clients across services.



Results and Benefits

QV is now able to retire several unsupported frameworks with licensing costs of 100K leading to significant ROI. QV is able to manage its backend applications more transparently, as complex duplicate data structures have been mapped and ported into QV's core DB schema.

Architecture



Next Steps

Next steps are Koan continue to work with QV to enable a single source of truth for their datasets, and strip out remaining dependencies. This includes replacing the Kafka message queue, with the Modernization Pub/Sub Pattern (publish events to several dependent microservices).

Koan and QV will continue to collaborate on the AWS Modernization journey, where Koan seeks to enable QV to own its technology outcomes, and use inhouse resources supplemented with AWS experts as required on the Journey.

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.