Case Study

Cloud Challenge

nubeGo Engagement

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Correlation Risk Partners - DevOps

Correlation Risk Partners (CRP) build partnerships with growing entrepreneurial businesses that have a proven ability to distribute insurance products. CRP focuses on developing a sustainable portfolio of sought after insurance businesses through exceptional partnership expertise and cross-functional knowledge sharing.

Cross-Account Continuous Delivery

The Correlation data team works alongside the development and product teams of partner businesses. As part of this process, CRP wanted the ability to deploy Serverless Application Model (SAM)-based applications into different release environments. Each of the deployed applications further needed to access data sources hosted within the partner AWS accounts. Correlation asked nubeGo to design an automated continuous integration and delivery (CI/CD) process allowing Correlation to trigger application deployments into the target (release environment) accounts with minimal intervention required from the developers.

### Fully Automated Serverless CI/CD Pipeline

A centralised shared-services account was created within the existing AWS Organization to store CI/CD artefacts and orchestrate the deployment of application and infrastructure updates to multiple AWS accounts.

Build artefacts generated by the pipeline are stored in an S3 bucket secured with KMS encryption. A set of cross-account IAM roles allow secure transfer of artefacts from the shared-services account to target (release environment) accounts during the deployment stage of the CI/CD workflow.

nubeGo defined an end-to-end CI/CD pipeline using AWS CloudFormation to build, test and deploy AWS SAM applications. AWS CodePipeline is used to orchestrate each stage of the integration and delivery

workflow. Two matching pipelines provide integration with the development/testing and production branches of the source code repository hosted in GitHub, respectively. Parameterisation of the CloudFormation templates allow for easy replication of the pipeline to new SAM applications. Additional utilities allow for custom domain name configuration on AWS API Gateway endpoints through cross-account DNS configuration and certificate management with Amazon Route53 and AWS Certificate Manager; something that is not provided with AWS SAM by default.

nubeGo provided a Python script to automate the deployment of new CI/CD pipelines to facilitate rapid setup and configuration of new projects.
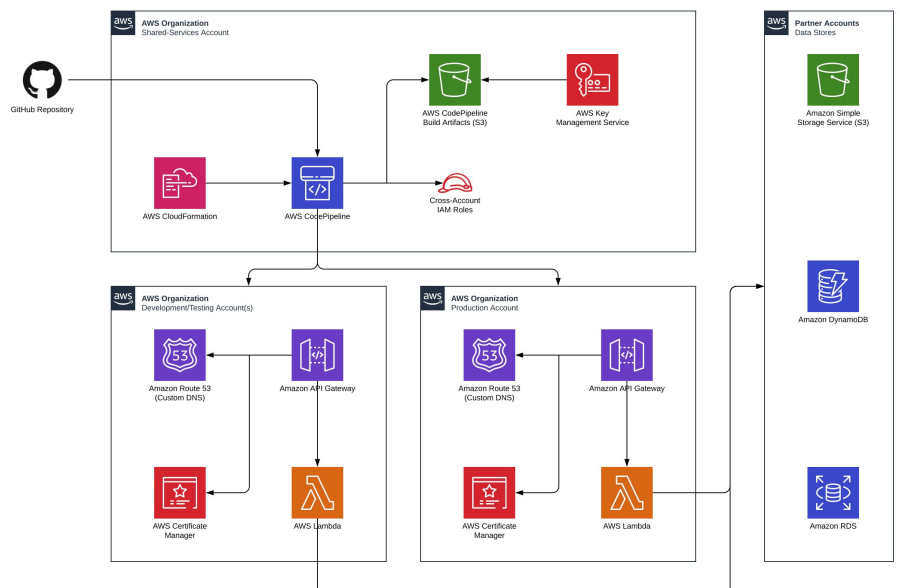
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With help from nubeGo, Correlation was able to establish a reusable framework for continuous integration and delivery (CI/CD) pipelines; automating the deployment of AWS SAM-based applications to isolated release environments hosted in different AWS accounts.

By creating separate CI/CD pipelines for different source code branches, application updates are now automatically tested and validated before changes get merged with the master branch for deployment to the production environment.

Through the use of CI/CD pipelines, CRP was able to reduce the time required to deploy application updates to less than 5 minutes.

The new DevOps process removed dependencies on both internal and partner resources previously needed to perform application updates and upgrades; creating a less disruptive experience to partner businesses and increasing delivery.

AWS CloudFormation, AWS CodePipeline, AWS CodeBuild, Key Management Service (KMS), AWS Certificate Manager (ACM), Amazon Route 53, AWS Serverless Application Model (SAM), AWS IAM, Amazon S3, Python, Github

> While we have experience using AWS CI/CD services, it would have taken us too long to establish a DevOps capability. With their guidance and expertise, nubeGo helped us move this initiative forward quickly. The team helped us overcome some of the immediate technical challenges and provided inspiration on best practices we can apply ourselves going forward.

Eon Retief - Chief Data Officer, Correlation Risk Partners