nClouds | AWS Case Studies

Federal Home Loan Bank of San Francisco

Benefits Summary

- Enhanced Security and Compliance
- Increased Scalability
- Automation and Efficiency
- Optimized Resource Management

Industry

Banking, Financial Services

Location

United States

Challenge

The need to centralize security assessments for regular AWS audits across multiple accounts

Featured Services

AWS IAM, AWS Organizations, AWS Config, AWS Lambda, AWS S3, AWS KMS, Terraform

FHLBank San Francisco

About the Company

The Federal Home Loan Bank of San Francisco provides banking services to various financial institutions while ensuring compliance with regulatory standards.

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CHALLENGE

The bank faced the challenge of centralizing security assessments to enable regular audits of AWS Resources across multiple AWS Accounts.

SOLUTION

nClouds proposed a solution utilizing Terraform to automate the deployment and configuration of AWS conformance packs, which contain Managed Rules for standard audits and Custom Rules for resources outside the Managed Rules' scope. In addition to using Terraform to automate infrastructure provisioning and manage configurations efficiently, the company leverages the following Amazon services:

AWS IAM: To manage access and permissions securely across AWS services

AWS Organizations: To centrally manage billing, control access, compliance, and security across AWS accounts

AWS Config: To enable detailed assessment, auditing, and evaluation of configurations of AWS resources

AWS Lambda: To run code in response to triggers such as changes in data or system state, which supports custom rule execution

AWS S3: To store audit results securely in an encrypted format using AWS KMS for enhanced data protection

AWS KMS: To provide centralized control over cryptographic keys used to encrypt stored audit results

RESULTS

From April 2020 to August 2022, nClouds implemented Terraform-driven security audits for the Federal Home Loan Bank of San Francisco. The firm set up three conformance packs based on CIS 1.4 Level 1, Security Best Practices, and Operational Best Practices, alongside a custom AWS Config rule for SSL policy audits on load balancers. All audit data was securely stored in a KMS-encrypted, customer-managed S3 bucket, ensuring compliance and enhancing data security management.

BENEFITS

There are many useful resources for creating the conformance pack containing Managed Rules. AWS various templates for reference so the conformance packs can be tailored to the client's specific needs. In addition, templating a Custom Rule as a Terraform module enabled the company to expand this structure for generating additional Custom Rules later.

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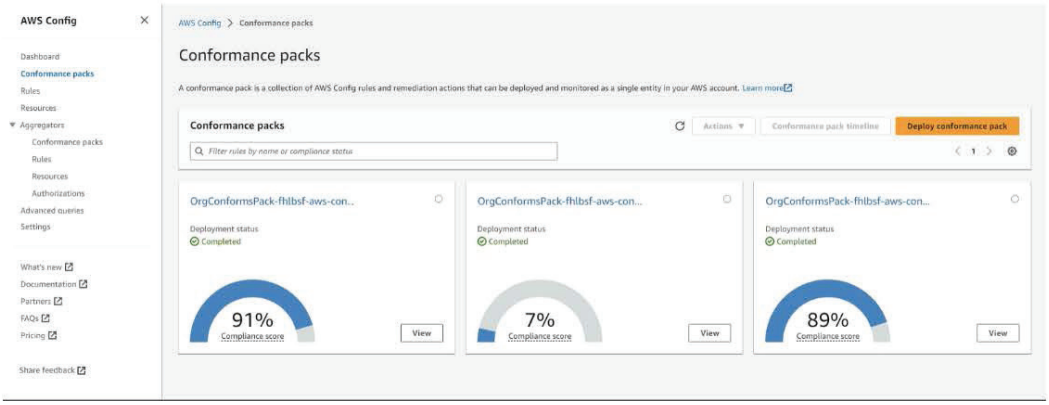
AWS Conformance Packs

AWS Account

FHLBSF-Master

Security Best Practices
Operational Best Practices
CIS 1.4

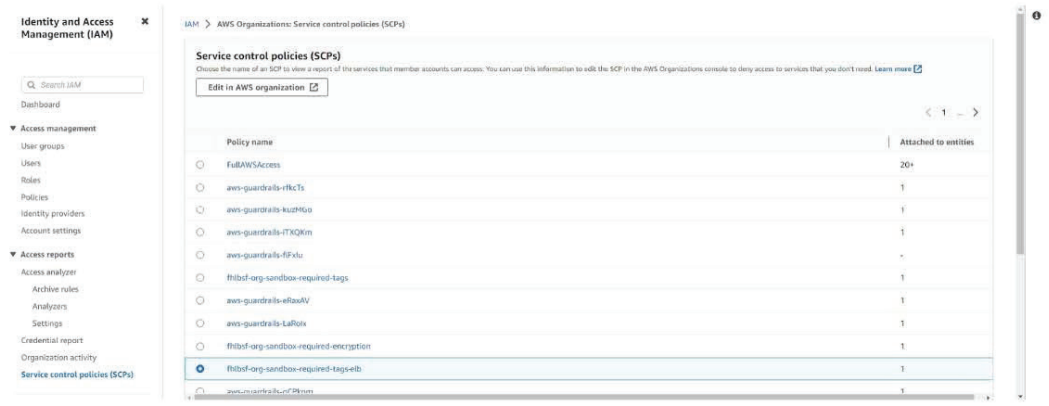


AWS Organizations SCP

AWS Account

FHLBSF-Master

Required Encryption
EC2 / EBS / ELB
Reqired Tags



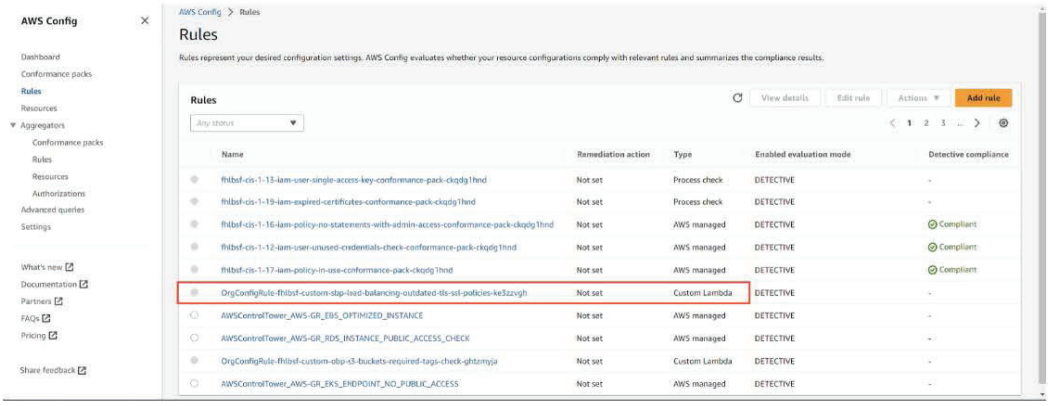
AWS Custom Config Rules

AWS Account

Config Rules:
FHLBSF-Master

IAM Role:
FHLBSF-*ALL*

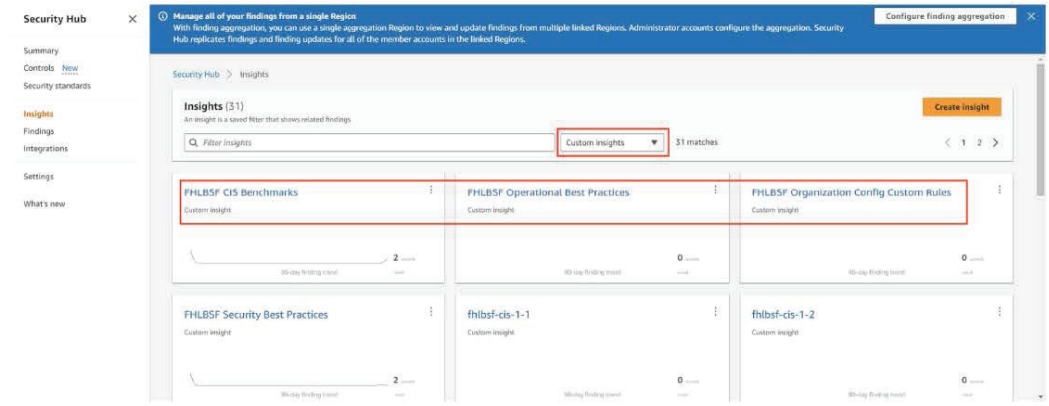
AWS Config Enabled
Outdated TLS/SSL Policies
SQS Encrypted



AWS Security Hub Insights

AWS Account

Insights:
FHLBSF-*ALL*



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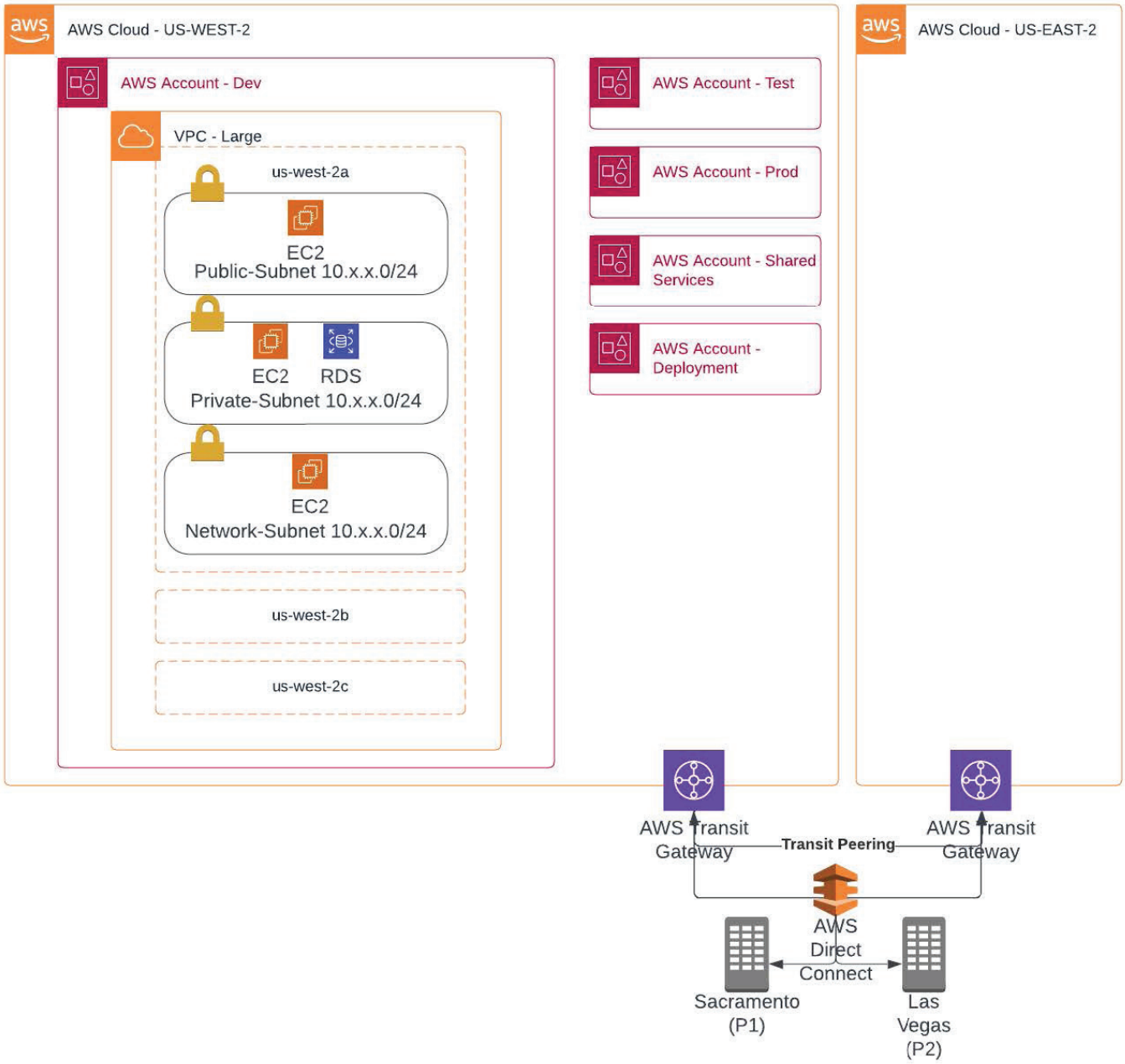

About nClouds

nClouds is a certified, award-winning provider of AWS and DevOps consulting and implementation services. We partner with our customers as extensions of their teams to build and manage modern infrastructure solutions that deliver innovation faster. We leap beyond the status quo.

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