Tiger Analytics Powers Faster End-to-End Project Deployment Process for Pharma Co with AWS Native Services

Tiger Analytics collaborated with the client to build a comprehensive solution for developing a platform ecosystem. This solution was developed to consolidate D&A ecosystem and create DevOps workflow components that are repeatable, reproducible, maintainable to improve overall efficiency.

The Background

Our client is a leading global pharmaceutical company headquartered in the United States. It focuses on researching, developing, and commercializing innovative medicines, vaccines for human health, and animal health products. The project ask was to co-build platform ecosystem to:

/ Setup modern cloud ecosystem to onboard new Data Projects

/ Setup an end-to-end automated Deployment process for new project onboardings

Key Challenges

/ Unavailability of cloud platform to build, deploy and manage

/ Unavailability of secured , scalable cloud storage to store and management of Integrated and analytical products.

/ Onboarding project team takes months to initiate the project.
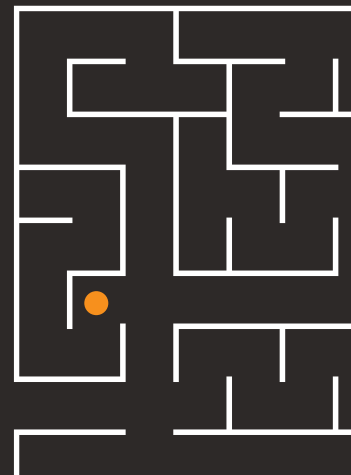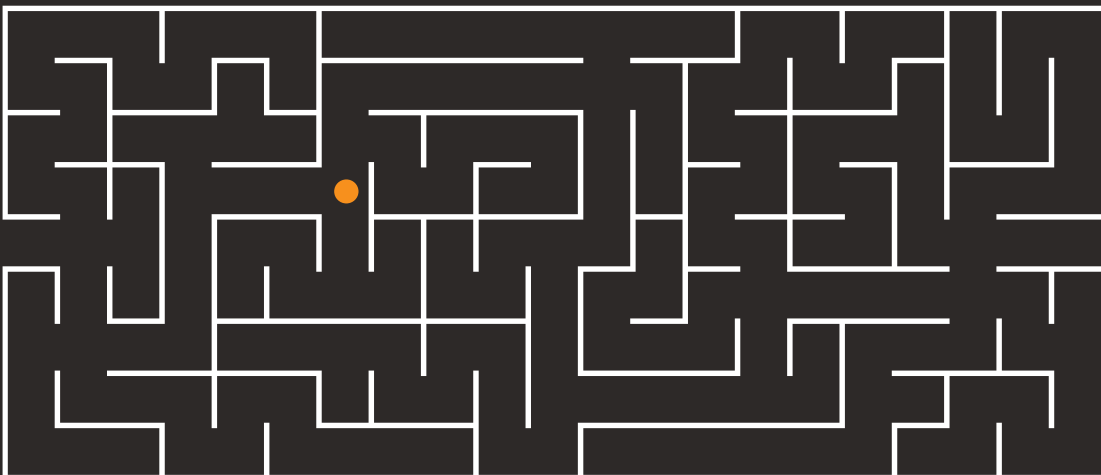
Our Solutions

Tiger Analytics partnered with the client to build a comprehensive solution for the platform development using AWS native services.

/ Workspace Automation - We have built an AWS CDK application to generate cloud formation templates out of configuration and built a SDK module to deploy them automatically. We have built a configuration driven solution where we can declare our project requirements like service required and additional roles in a configuration file. We have achieved isolation using the uniquely identifiable naming convention, users are restricted to create/access resources with the right naming convention.

/ Automated IAM User Key Rotation Utility - As per the compliance/best practices we need to rotate AWS IAM keys every 90 days. Keys will expire after 90 days. We have implemented the solution to rotate the keys if it is about to expire. Our solution will rotate the keys every 70 days. We have integrated Jenkins API also to update the Jenkins credentials which hold the user credentials after the rotation. Same way we have API's to update the secret managers. In our use case we have multiple accounts and users. We have added a centralized access to rotate them and update them. Our solution runs every day scanning all the accounts and users based on the master config file and identifying the candidate and rotating them.

/ DevOps Automation - We established a github repository and for static code analysis we are using SonarQube, Coverity and Blackduck. For the pipeline we are using cookiecutter to streamline development. The pipeline is capable of deploying infrastructure and building project software, utilizing tools like CDK and Docker for image builds. It integrates with DevSecOps tools such as SonarQube, Coverity, and Blackduck to ensure code quality and perform vulnerability scans. Access to the pipeline is restricted to project specific teams, enhancing security and collaboration. Additionally, we automated database deployment with Liquibase and manage secrets through the pipeline for secure project operations. The pipeline also automates software installation and configuration on EC2 instances using Ansible, ensure a consistent and efficient deployment process.
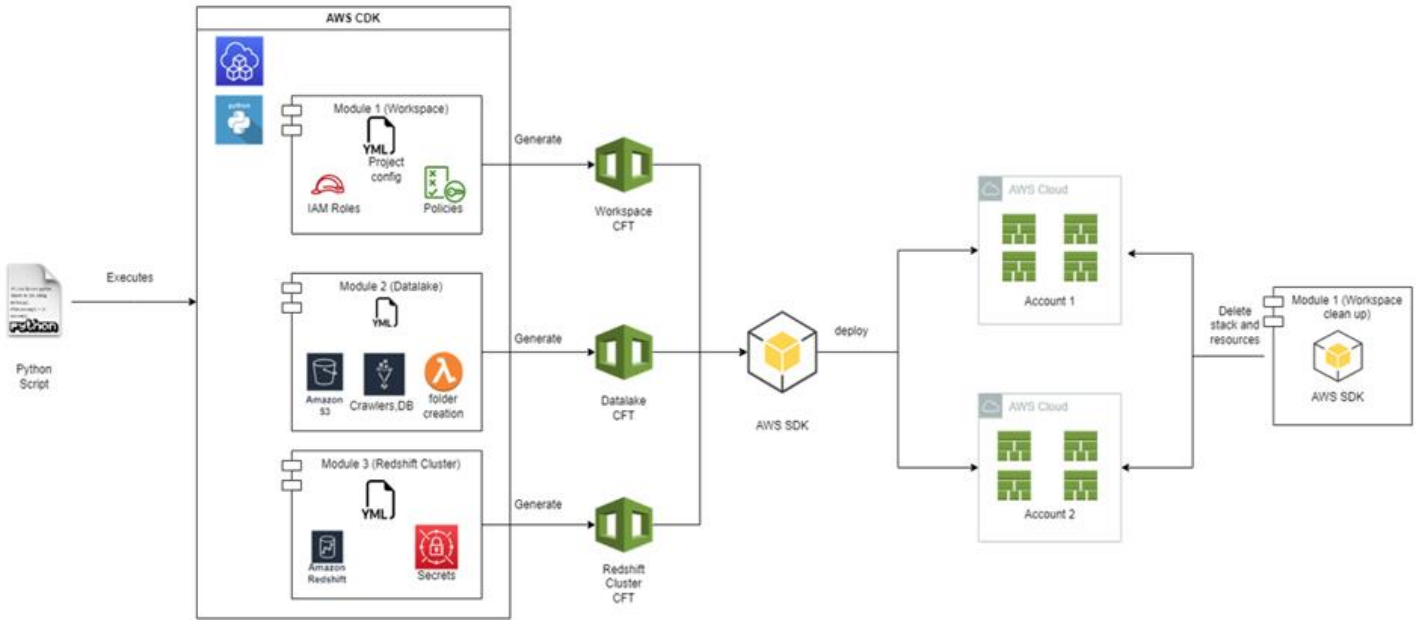
Tech Stack

/ AWS Redshift
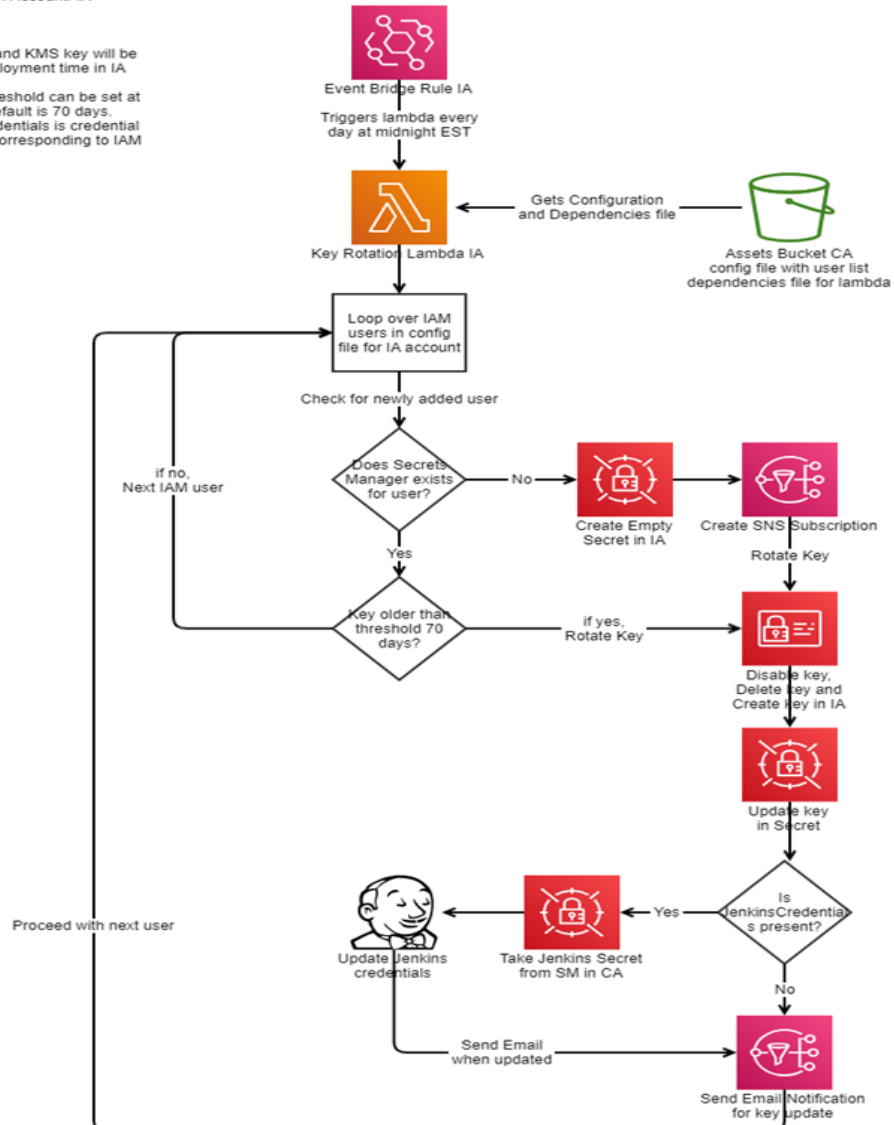
/ Amazon S3

/ AWS Athena

/ AWS EMR

/ AWS Glue

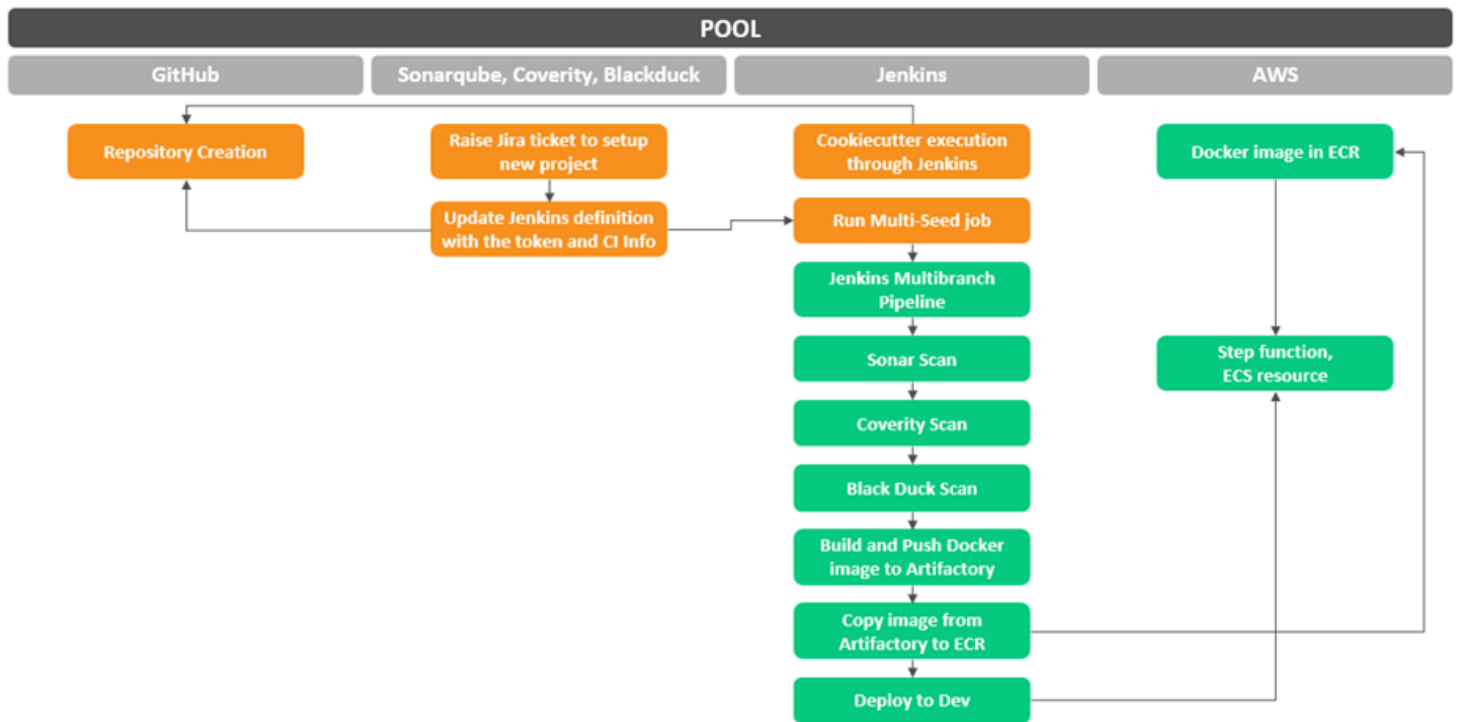/ Amazon Aurora

Solution Architecture

Solution Architecture

POOL			
GitHub	Sonarqube, Coverity, Blackduck	Jenkins	AWS

Repository Creation

Raise Jira ticket to setup new project

Update Jenkins definition with the token and CI Info

Cookiecutter execution through Jenkins

Run Multi-Seed job

Jenkins Multibranch Pipeline

Sonar Scan

Coverity Scan

Black Duck Scan

Build and Push Docker image to Artifactory

Copy image from Artifactory to ECR

Deploy to Dev

Docker image in ECR

Step function, ECS resource

Value Delivered

- 90% increase in Operational efficiency
- Quicker time to provision end to end project environment
- Automated provisioning of Bitbucket project repository and automating code repository creation.
- Modern serverless Cloud Ecosystem to support Data Science solutions and POC support
- Integrate environment with automated access and service provisioning resulting in quick onboarding into environment
- DevOps pipeline capable of multi-region deployment
- IaaC for setting up initial data pipeline
- Repository ready to integrate code quality & vulnerability scanning tools
- Templatized Data pipeline & Project Repository creation

About Tiger Analytics

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to **provide certainty to shape a better tomorrow.**

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.

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