nClouds | AWS Case Studies
5AM Solutions

How nClouds helped 5AM Solutions support its fast-growth business with a containerized microservices-based architecture.

Industry
Healthcare, Software

Location
Reston, VA

Challenge
Overcome time-consuming obstacles for testing at the end of development sprints to support the rapid growth of its business.

Featured Services
Containerization, DevOps, Security

About 5AM Solutions

Founded in 2003, 5AM Solutions, Inc. is a software product developer and system integrator for life science and healthcare customers. It provides cloud-based data solutions that enable healthcare organizations to design, aggregate, analyze and visualize genomic, clinical and observational data. Customers can use their platform to integrate data from multiple information systems and external sources to accelerate the discovery of drugs and treatments and improve the organization and management of complex genomic sequencing data. To learn more, go to 5amsolutions.com.

Benefits Summary

Operational efficiency

Improved performance

Enhanced security

CHALLENGE

Overcome time-consuming obstacles for testing at the end of development sprints, to support the rapid growth of its business.

5AM Solutions was experiencing rapid growth across all areas of its organization and needed to shorten the time required to complete testing at the end of the development sprint. The company wanted to create a separate environment for each of its branches to ensure maximum quality and needed to comply with strict guidelines to protect their customers' private data.

Why AWS and nClouds

5AM Solutions selected nClouds for its DevOps expertise.

5AM Solutions leveraged several Amazon Web Services:

- **AWS CloudFormation (CloudFormation) -** Allows 5AM Solutions to treat its infrastructure as code, automate operations, and bring up new environments.
- **Amazon Elastic Container Service (Amazon ECS) -** A highly scalable, high-performance container orchestration service that supports Docker containers and enables 5AM Solutions to run and scale containerized applications on AWS easily.
- **AWS Auto Scaling group -** Monitors 5AM Solutions' applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.

aws partner network	aws partner network
Premier	**Premier**
Consulting Partner	Consulting Partner
AWS CloudFormation	Migration Competency
Data & Analytics Competency	MSP Partner
DevOps Competency	Public Sector Partner
Immersion Day Partner	SaaS Competency
Marketplace Seller	Well-Architected Partner Program

5AM Solutions' solution stack also included an additional, essential third-party tool:

- **Jenkins -** An open-source automation server written in Java to support CI/CD.

nClouds' Solution Architecture for 5AM Solutions

nClouds implemented AWS CloudFormation to automate 5AM Solutions' infrastructure, an AWS Auto Scaling group to improve performance, AWS ECS for a secure environment, and Jenkins for continuous integration and delivery.

AWS CloudFormation built new environments with each pull request. nClouds built Jenkins on AWS ECS using Groovy script to create images with Git SHA and push settings to AWS ECS. Jenkins agents were scaled automatically based on the pull request.

Each task was completed using best practices and procedures and partnerships with nClouds' partners and advisors. Throughout the entire project, nClouds regularly updated the 5AM Solutions team with information about the development process and timeline.

High-level architecture diagram:
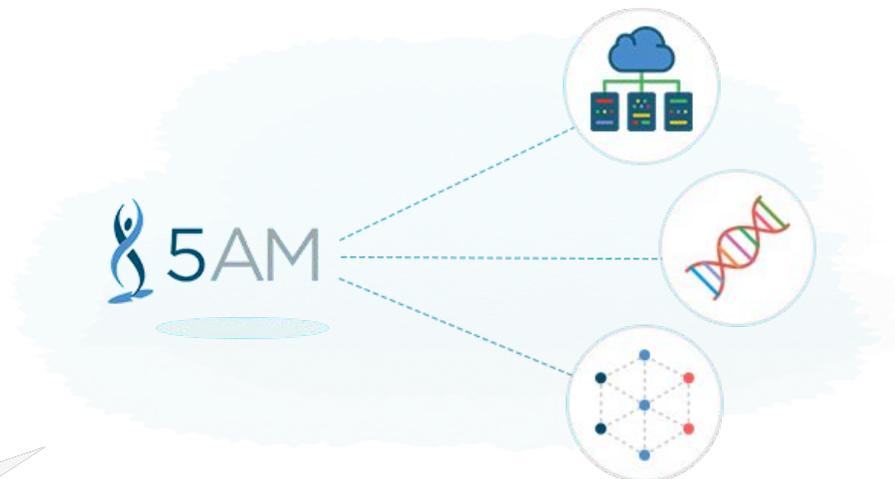
The Benefits

Teaming with nClouds, 5AM Solutions now has a secure environment that can be cloned to create different iterations and ephemeral variations. The company's feedback loop was drastically improved to enable rapid experimentation and testing. The project has yielded numerous benefits:

Operational efficiency

CloudFormation enables 5AM Solutions to treat its infrastructure as code, automate operations, and bring up new environments.

Improved performance

AWS Auto Scaling group monitors 5AM Solutions' applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.

Enhanced security

With Amazon ECS, each task can have separate IAM roles. This granular level of control lets 5AM Solutions limit access and align with "Least Privilege" access principles.

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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