NOAA Accelerates Customer Onboarding and Automates Key Processes with GAMA-1 Platform on AWS

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Executive Summary

AWS Partner GAMA-1 Technologies helped the National Oceanic and Atmospheric Administration (NOAA) design and deploy the AWS-based Enterprise Platform as a Service (ePaaS), allowing NOAA to onboard new AWS customers in under an hour instead of several weeks, eliminate duplication of services, and automate services. The ePaaS solution includes AWS Control Tower to automate onboarding and uses AWS Service Catalog to allow internal customers to build and manage catalogs of IT services.

Striving for Scalability and Accelerated Customer Onboarding

Formed in 1970, the National Oceanic and Atmospheric Administration (NOAA) is a scientific and regulatory agency within the United States Department of Commerce that provides services, including weather forecasting, ocean monitoring, and protection of marine mammals and endangered species. Through its work, NOAA seeks to understand and predict changes in climate, weather, the ocean, and coastal areas.

The NOAA Office of the Chief Information Officer (OCIO) Service Delivery Division (SDD) provides a range of IT services to internal NOAA customers such as the National Weather Service, National Ocean Service, the Office of Oceanic and Atmospheric Research, and the National Environmental Satellite, Data, and Information Service (NESDIS), among others. To offer added scalability and serve these customers more effectively, the OCIO SDD sought to migrate key business applications to the cloud. “We had an organizational priority to migrate applications to the cloud, and we needed to figure out the best way to do it,” says Stefan Leeb, enterprise cloud services program manager for the NOAA OCIO SDD. “It takes a long time to do things when establishing a cloud service in the government due to contracts and labor and security. It can be really complicated, and we lacked any cloud personnel. We required relevant expertise to help build a common cloud framework.”

The organization also wanted to reduce the time it took to onboard internal customers onto business applications. “Onboarding was a manual process, taking months to complete,” Leeb says. “There were different processes for different programs, and we really needed to streamline and automate things to make the cloud move work more seamlessly.”

About the National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA), based in Silver Spring, Maryland, is an American scientific and regulatory agency that forecasts weather, monitors oceanic and atmospheric conditions, charts the seas, conducts deep sea exploration, and manages fishing and protection of marine mammals and endangered species in the U.S. Exclusive Economic Zone.

Implementing an Enterprise Platform as a Service on AWS

After receiving internal approval and funding to simplify cloud migration, the OCIO SDD selected AWS Partner GAMA-1 Technologies to help design and deploy a new cloud framework. “We’d worked with GAMA-1 on many projects in the past, and they have a proven track record of success,” Leeb says. “It made sense to collaborate again.”

GAMA-1 cloud subject matter experts designed and deployed the NOAA Enterprise Platform as a Service (ePaaS), an AWS-based cloud framework providing hosting and development services for internal OCIO SDD customers. The framework includes: AWS Control Tower, featuring a landing zone that automates OCIO SDD customer onboarding of AWS accounts using the NIST SP 800-53 Rev. 5 security and management framework; AWS Service Catalog, to allow OCIO SDD customers to create and manage catalogs of IT services; a pipeline as a service capability to automate feature release pipelines for fast updates; and secure connectivity using existing NOAA technologies.

GAMA-1 migrated two NOAA critical applications to AWS using this new framework: the Foreign National Registration Service and the NOAA Staff Directory. Both applications are optimized to leverage AWS services, such as Amazon Relational Database Service for Oracle (Amazon RDS) and Elastic Load Balancing, allowing GAMA-1 to quickly migrate NOAA’s on-premises Oracle database to Amazon RDS for Oracle. In addition, GAMA-1 created an instance scheduler solution to control resource costs by automatically configuring start and stop schedules for both Amazon Elastic Compute Cloud (Amazon EC2) and Amazon RDS instances.

Now, more than 20 NOAA programs are using the ePaaS solution. The framework can also scale on demand as OCIO SDD adds more internal customers and applications. “By using AWS Control Tower, we’re taking advantage of a landing zone and multi-account structure that can be easily expanded in the future,” says Diwakar Puthalapat, cloud practice lead for GAMA-1.With faster onboarding, OCIO SDD has already helped more than 20 internal programs use ePaaS to migrate applications to AWS.

“Originally, the plan was to use ePaaS for our own group, but we decided to open it up to all of NOAA because of the ease of onboarding and scalability,” Leeb says.

AWS Services Used

AWS Control Tower

Amazon RDS for Oracle

Elastic Load Balancing Amazon EC2

Benefits

- Onboarding new customers in under an hour instead of weeks
- Eliminates duplication of services
- Automates security controls

Eliminating Duplication of Services and Automating Security Controls

The expansion of ePaaS is also simplified because GAMA-1 created the solution to be replicable, enabling a common cloud framework and service offering that eliminates duplication of services across the enterprise. “We built the framework as a ‘build one, use many’ kind of model,” Puthalapat says. “It can be implemented once and used by many different teams due to AWS best practices for architecture and development. NOAA has more consistency now, making reporting easier.”

The solution’s common framework, alongside automated processes, also allows NOAA customers to obtain a zero-day Authority to Operate (ATO) through moderate-level security controls. The government uses ATOs to manage network risk via evaluation of security controls for IT systems. “There wasn’t a security baseline before the ePaaS solution, which was why ATO was critical before this system became operational,” says Leeb.

The NOAA OCIO SDD will continue to expand the use of the ePaaS solution while working alongside GAMA-1. “GAMA-1 has been with us throughout this process, and we plan to continue working with them while adding further AWS services,” Leeb says. “GAMA-1 is extremely dedicated and professional, delivering a Fortune 100–level service. We’re excited to see what the future holds.”

"With this solution, we’ve eliminated the duplication of services. Everything from security controls to naming conventions is already in place, so customers can get up and running very quickly."

Stefan Leeb, Enterprise Cloud Services Program Manager, NOAA OCIO SDD

About the AWS Partner GAMA-1 Technologies

GAMA-1 Technologies, based in Maryland, provides digital transformation and cloud migration services to global customers. GAMA-1 develops custom solutions directly in line with customers’ compliance requirements for creating and deploying cloud applications, governance at scale, infrastructure, modernization, virtualization, and implementation of private, public, and hybrid cloud solutions.

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