

nClouds | AWS Case Studies

Prodea

**Industry**

IoT

Location

Richardson, TX

Challenge

Migrating a slow, resource-intensive legacy platform to AWS cloud.

Featured Services

CI/CD, containers, cloud infrastructure, cloud migration, 24x7 support

About Prodea

Prodea provides an Internet of Things (IoT) cloud platform-as-a-service designed specifically for manufacturers of mass-market, consumer products for the home. Their end-to-end solution enables real-time performance monitoring, data intelligence, and predictive analytics to address the challenges of today's increasingly complex Internet of Things landscape. Entrepreneur.com lists Prodea as one of the "25 Innovative IoT Companies and Products You Need to Know." Visit www.prodea.com for more information.

Benefits Summary



Greater than tenfold improvement in product delivery speed



Faster provisioning of new customer environments



Reduced defect rate



Bandwidth to modernize



Improved culture

CHALLENGE

Migrating a slow, resource-intensive legacy platform to AWS cloud

For more than a decade, Prodea Systems, Inc. has been helping mass-market consumer products companies develop new opportunities and channels. The company's Internet of Things (IoT) cloud platform-as-a-service enables manufacturers to transform traditional consumer products into connected devices, acquire, and transmit usage and device data in formats that power business intelligence systems, and enable device interoperability through cloud-to-cloud integration with major third-party ecosystems.

Up until 2016, Prodea hosted its own services — developed in Java and Ruby on Rails — in multiple data centers. Their development team followed traditional development paradigms and didn't embrace the advantages of infrastructure automation. As a result, all software deployment was performed manually, without any DevOps approach.



"If needed, we can go from coding to production the same day. This was something we couldn't have dreamed of when we first started this project (with nClouds). Even though it was part of the vision, when looking at us as an organization, it just didn't seem possible."

Jarrod Sinclair,
Chief Architect, Prodea

This created several challenges for the company:

- Releasing and deploying new features took three to six months, with no ability to release incrementally.
- Major planning was required to perform upgrades, which were complex events that required the attention of the entire operations team as well as extensive coordination with customers.
- Even with an “all-hands-on-deck” approach, confidence in release timing and quality was low, as was the collaboration between development, operations, and line-of-business groups.

To address these issues, the company started looking for a solution that would enable better access control to critical resources in their environment and allow them to scale their infrastructure up and down based on usage. As an education technology company, they considered it crucial to have strong private information protections and achieve zero latency with the new solution for a positive user experience.

Why AWS and nClouds

AWS Partner Prodea worked with nClouds, a Premier Consulting Partner in the AWS Partner Network (APN), to help facilitate its migration to the cloud. AWS was the clear leader in service offerings. Based on Prodea’s requirements, nClouds developed a deployment strategy, using AWS services and tools such as Docker, Ansible, and Jenkins as pillars.

“Our first step was to determine if we could ‘Dockerize’ our environment, as a way to demonstrate what was possible,” recalls Sinclair.

“We used Docker Compose to build a local Docker environment with static containers, then gave our CEO instructions on how to deploy it. In less than an hour, he had our core stack running on his laptop — something that would have taken weeks in the past. This validated our approach and helped us gain the confidence and support of our executive team.”

nClouds also built development and staging environments on AWS to enable Prodea to deploy new code frequently and feel confident about the process. “The first consumer of our new pipeline was our QA department,” says Sinclair. “They used it just as our operations team would eventually do, enabling us to catch issues early in the process. We kept our legacy platform up until we gained confidence—again, taking an incremental approach. Then we “burned the ships” and moved forward without looking back.”

During the project, which took approximately three months and involved migrating hundreds of VMs, Prodea devoted its entire development team to migrating different parts of the company’s infrastructure to the cloud. “When we hit a roadblock, such as a gap in documentation, nClouds had the knowledge we needed,” says Sinclair. “It was like having an invisible operations team by our side as we learned the ropes.”

Today, Prodea is running its platform development, staging, and production environments on AWS. “Testing time for a deployment has been reduced from days to hours, and we can now deploy new code multiple times a day instead of the process taking months like it did in the past,” says Sinclair.

In building its new deployment pipeline, Prodea took advantage of several Amazon Web Services:

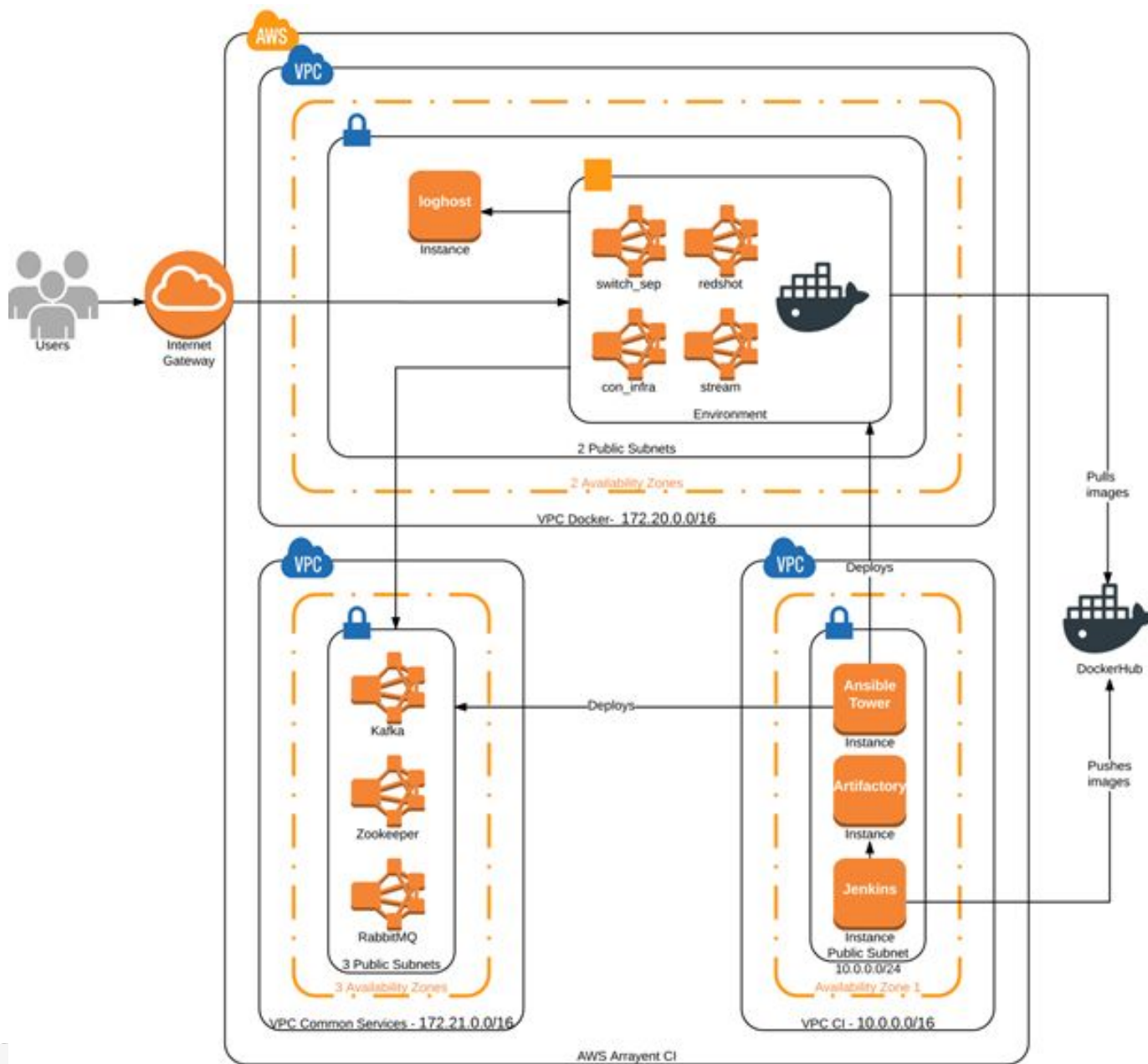
- **Amazon Elastic Compute Cloud (Amazon EC2)** - Services that are part of the environment run on Amazon EC2 instances and are organized using AWS instance tags.
- **Amazon EC2 Container Service (Amazon ECS)** - A Jenkins server kicks off all the build and test tasks to workers in an autoscaling Amazon ECS cluster, which enables the pipeline to scale automatically with demand.
- **AWS Lambda and Amazon API Gateway** - These are used by a Slack plug-in to query the health status of the development, staging and production environments.
- **Elastic Load Balancing** - Load balancing is used to automatically distribute incoming application traffic across multiple Amazon EC2 instances.



- **Amazon Route 53** - Amazon Route 53 is used to handle Domain Name Service (DNS) tasks and script the process of moving DNS names around as needed to route users to apps.
- **Amazon Virtual Private Cloud (Amazon VPC)** - This lets Prodea provision a logically isolated section of the AWS cloud and launch AWS resources within that defined virtual network.
- **Amazon CloudWatch** - This is used to monitor the deployment pipeline and the AWS cloud resources it depends on.

nClouds Solution Architecture for Prodea

Working with nClouds helped Prodea ensure that the deployment pipeline followed best practices. The environment is distributed across multiple AWS availability zones to help ensure disaster recovery, all infrastructure is represented as code, and deployment is fully automated by using Red Hat Ansible Tower. “Developers now can quickly spin up new environments and tear them down when no longer needed—making it easy to test new features that deliver new customer value,” says Sinclair.



The Benefits: New Business Value in Many Forms

With help from nClouds, Prodea moved from a cumbersome, manual deployment process to a fully automated deployment pipeline in the cloud. The project has led to several benefits:



Greater than tenfold improvement in product delivery speed.

In the past, it used to take three to six months to deliver new features to market. Today, releases are done weekly. “If needed, we can go from coding to production the same day,” says Sinclair. “This was something we couldn’t have dreamed of when we first started this project (with nClouds). Even though it was part of the vision, when looking at us as an organization, it just didn’t seem possible.”



Faster provisioning of new customer environments.

Prodea now can rapidly provision new proof-of-concept environments for prospective customers, which has accelerated the sales process and improved the customer experience.



Reduced defect rate.

Deployment rollbacks are now a thing of the past, giving Prodea and its customers greater confidence in the deployment process. “We now have the flexibility to really support our customers, meet the demands they place on our platform, and release new features as the business demands,” says Sinclair.



Bandwidth to modernize.

Now that developers aren’t “fighting fires” with the operations team anymore, they have time for other, more productive tasks. “We have quite a few pieces in our platform that need to be modernized or expanded upon, but in the past, we didn’t have the bandwidth for that,” says Sinclair. “Now we do.”



Improved culture.

In the past, deployments were often causes of frustration and stress. Today, there’s a blameless culture of transparency, and confidence in delivery speed and quality shared by customers and internal teams. “People are proud of what we accomplished; it really changed the culture here,” says Sinclair. “Prodea really became a fun, exciting place to work.”

Prodea’s acquisition of Arrayent in July 2017 is perhaps the greatest indicator of new business value. “Our ability to adapt to change—to be agile—was a key reason for our acquisition,” says Sinclair. “We’re still working on extending and accelerating our DevOps journey. Part of that now includes replicating what we’ve already accomplished within the rest of Prodea.”

Source: This customer success story is adapted and expanded from [AWS Partner Story: Prodea](#)

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.

Copyright © 2022 nClouds, Inc. All rights reserved

