

# Migrating and Deploying AWS Cloud-Based Application for Cordium's New Product Launch



## Executive Summary

Cordium helps companies safeguard their most important accounts, and maintain full compliance with strict government mandates. The company provides consulting and support services that streamline financial governance, risk, and compliance processes. In addition, it offers a variety of cybersecurity assessment and risk management solutions.

Two flagship Cordium technology governance products, Employee Level Filing (ELF) and Pilot, help manage compliance risk and regulatory processes. ELF allows companies to build their own comprehensive compliance intranets for employees. Pilot, an enhanced corporate workflow management tool, helps companies navigate through complex compliance and operational tasks and processes from start to finish.

"ClearScale's expertise helped us successfully navigate our first foray into AWS. Their architects helped us design a robust, scalable, and secure solution and delivered the work in the timeframe that we needed."

Jordan Schwartz, Managing Director at Cordium

## The Challenge

Cordium was getting ready to launch Pilot 2.0, a new version developed for the cloud. For this product launch, the company wanted to move to the [Amazon Web Services \(AWS\) Cloud, for more effective scalability](#).

Cordium needed Staging, Production, and Disaster Recovery environments for Pilot 2.0 created and deployed in AWS according to AWS best practices. This included having all services deployed with automatic failover and multiple instances in different Availability Zones (AZs). It also needed to include Auto Scaling Groups (ASGs), along with [continuous integration and continuous deployment \(CI/CD\)](#), and [improved overall automation](#).

To ensure that this migration was successful and provided a new cloud-based home for Pilot 2.0, Cordium turned to the experts at ClearScale.

## The ClearScale Solution

From November 2017 through April 2018, the ClearScale team worked on the build-out, using [Jenkins](#) to deploy a highly available, scalable, reliable solution.

This upgrade featured ASGs in two AZs, using two VPN EC2 instances to create VPN connections to a remote network. Amazon Relational Database Service (RDS) Multi-AZ deployments with load balancing ensured scaling and high availability of the relational database, so it could handle the increasing demands of the applications. And Terraform and CodeDeploy were used for automation, and Jenkins for continuous integration.

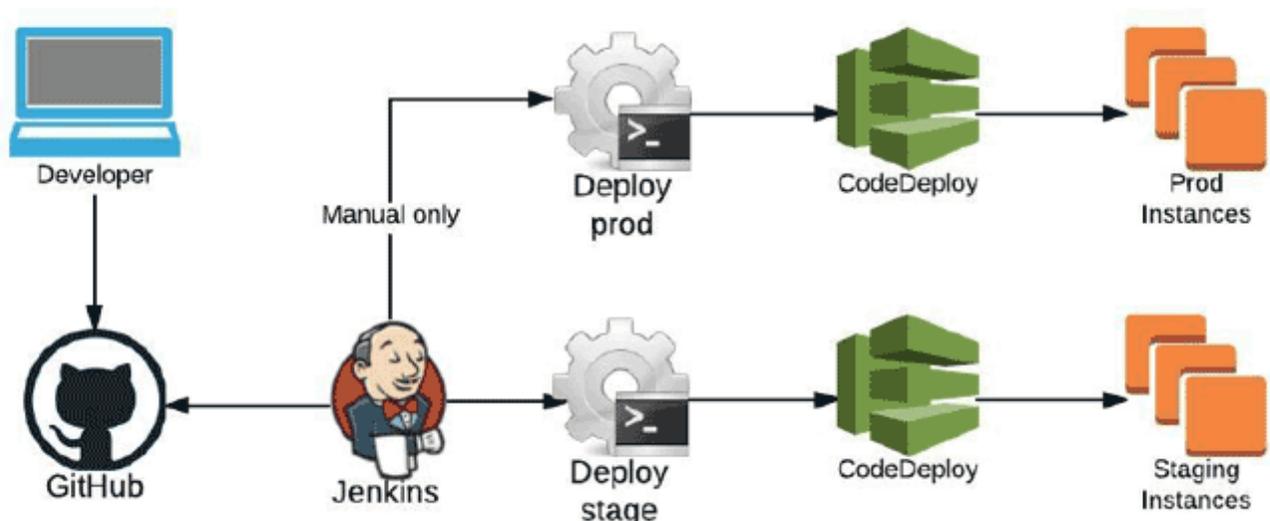
Among the services implemented by ClearScale was a separate Amazon Virtual Private Cloud (VPC) for every account. Each VPC is a logically isolated section of the AWS Cloud that allows Cordium to launch AWS resources in a virtual network.

Terraform templates were used to safely and predictably create, change, and improve the new infrastructure. This open-source tool codifies APIs into declarative configuration files that can be shared between team members, treated as code, edited, reviewed, and versioned. Terraform stores information about the new managed infrastructure in special state files that map real-world resources to the configuration, keeping track of metadata, and improving performance for the large infrastructure.

In addition, a Jenkins server was used for CI/CD, while CodeDeploy and ASG was used for an application tier. Jenkins creates and updates an application bundle and uploads it on CodeDeploy, which then deploys the application in the environment.

### CI/CD Diagram:

## CI/CD DIAGRAM



For disaster recovery, a “pilot light” scenario was created, where a minimal version of an environment is always running in the cloud, avoiding the expense of a second physical site. ClearScale maintained the pilot light by configuring and running the most critical core elements of Cordium’s system in AWS. When recovery is needed, Cordium can rapidly provision a full-scale production environment around the critical core.

Since security is very important to Cordium, both a web application firewall, intrusion detection system, and monitoring service were implemented.

## The Benefits

The migration and deployment went smoothly, and Cordium now benefits from a robust AWS Cloud-based application for their compliance and governance needs. The new ClearScale solution was deployed across all environments with applications, configured CI/CD pipeline, and documentation, providing high availability, scalability, and disaster recovery mechanisms. Because security was so critical, the new solution provides end-to-end protection from intrusions.

Most important, by relying on ClearScale’s expertise and experience, Cordium saved time and gained peace of mind.