

# Pelotech + Eyewear Ecommerce Leader

EKS Architecture / GitOps Enablement

## Executive Summary

Our client needed help building out the core infrastructure for their second decade of success. Pelotech helped the client design and develop a best in class EKS solution in cluster design and deployment. By leveraging GitOps through Flux, Pelotech simplified deployment and integrated tailored cloud native components while improving auditability and maintainability over the long term.

## About Client

Client is an American online retailer of prescription glasses, contact lenses, and sunglasses, based in New York City. Client was founded as an online retailer but now sells through approximately 160 physical retail store locations across the U.S. and Canada.

## Client's Challenge

As a leading innovator in direct to consumer cloud ecommerce for the past decade, our client knows the value that adopting industry leading practices can bring.

Client's infrastructure and practices had evolved over the years. As a result there were different tools and practices used to deploy services and resources. Ownership of resources wasn't always clear. Standing up new environments and new applications was a fairly high effort endeavor. Deploying infrastructure via CD was also a multistep process that didn't integrate as seamlessly into workflows as desired. While the client's infrastructure was by no means behind the times it wasn't as responsive as they needed to continue their industry leading innovation.

Client's technical leadership knew Kubernetes would help them build a foundation for success in their second decade that AWS and EC2 had for their first. That said, the Kubernetes ecosystem offers a wide range of options and integrations. Investing in the wrong tools could lead to significant complexity and rework down the road. Furthermore, investing in a complete Kubernetes solution could allow them to jump ahead and avoid the rework inherent in an incremental adoption.

## Why AWS

Client has been a long time customer of AWS and seen many great benefits over the course of their partnership. Amazon's commitment to a responsive and performant managed Kubernetes offering with Amazon Elastic Kubernetes Service (EKS) only made the decision easier. The Amazon Load Balancer Controller, Secret Store CSI integration and Karpenter Autoscaler are industry leading Kubernetes components that helped make EKS on AWS the premier choice for Managed Kubernetes solutions.

## Why The Client Chose Pelotech

"Pelotech has an incredible amount of technical knowledge, a kind and helpful leadership and has helped us immensely improving our usage of kubernetes and the cloud overall."

- Principal SRE

Pelotech has deep experience helping the world's largest ecommerce businesses leverage best practices in cloud native architecture, infrastructure and processes to improve their businesses. The client knew they needed a partner with this experience. Additionally, the client wanted a partner with deep experience in deploying Kubernetes at scale and Pelotech could deliver. The client also knew whatever solution they selected needed to be easy to adopt, operate, evolve, and maintain over the long term. Pelotech's deep experience in and commitment to delivering such solutions was a key driving force behind client's choice.

## Pelotech's Solution

Pelotech designed a solution for the client leveraging a Flux based GitOps workflow. This workflow allows developers and SREs to collaborate on infrastructure in the same tools they use to build applications. Using this structure as a basis the client is able to quickly add additional applications and services in a centrally managed and easily coordinated fashion.

On top of this core system Pelotech and client built out the core Kubernetes components client needed for their enterprise services. An Istio based service mesh attached to AWS Load Balancer Controller created Network Load Balancers with Flagger allows the client to incrementally release new application versions and dynamically scale them out or back using live application metrics. Cert Manager and Route53 DNS integration allow the client to fully manage service DNS and certificates in situ without the need for additional management overhead and costs.

Since working with Pelotech the client team has also added Karpenter, Amazon's high performance replacement for the Kubernetes Autoscaler driving faster dynamic scaling, and more robust configuration management. This replacement was non-disruptive to teams and easily enabled via GitOps.

## Results and Benefits

Client was able to reduce infrastructure deployment complexity by migrating to Flux. They improved security by centralizing and limiting deploy keys and capturing all state over time in git and they reduced build complexity by removing terraform state management and dependencies from application builds. They also laid the groundwork for truly progressive application delivery with Flagger and Istio.

Over the longer term and as they complete the migration to EKS, the client expects to see better overall utilization of compute as workloads are more efficiently allocated by EKS, increased and more responsive performance due to Karpenter and Pod autoscaling. A decrease in overall management efforts allowing SRE teams to focus on adding value rather than maintaining system and services. The client expects to see a reduction from weeks of effort to hours when deploying new environments to explore their next innovations. With progressive delivery at the heart of it all, the client will maintain their industry leading commerce innovation into a second decade of success.

## About Pelotech

Pelotech provides expert guidance to Fortune 500 and SMB clients on their cloud adoption journeys. Pelotech was founded in 2011 to bring the techniques and technology that enable the speed and organizational agility of world class industry leaders in technology to organizations outside the FAANG. Their deep experience in global ecommerce, supply chain technology and cloud native infrastructure helps clients navigate and optimize their businesses.