

Case Study

Docker to Kubernetes Migration and Modernization for a Cloud-Ready Microservices Platform

To enable automated scaling, secure operations and high availability



PROJECT OVERVIEW

A fast-growing SaaS company was running microservices on standalone Docker hosts. The company needed a structured approach for **migrating from Docker to Kubernetes** and modernizing its infrastructure into a resilient cloud-native platform. To support this transformation, they partnered with Rishabh Software to execute a **Docker to Kubernetes migration and modernization** initiative that would automate operations, improve reliability, and support large-scale workloads.



Capability
Application
Modernization



Industry
AdTech



Country
United States

KEY FEATURES

The organization had reached the limits of its Docker host architecture and needed to **migrate Docker to Kubernetes** to support reliable scaling and standardized deployments. Scaling took manual effort and every change carried some risk. We set out to build a Kubernetes-powered platform that delivered four key capabilities:

High-Availability Container Orchestration

We introduced automated container orchestration. Now, the platform handles service scheduling, rolling updates, and self-healing autonomously. If infrastructure fails or updates are needed, applications keep running smoothly.

Standardized Application Deployment Workflows

We implemented controlled release processes that allow engineering teams to deploy application updates through structured and traceable workflows.

Consistent and Repeatable Infrastructure Environments

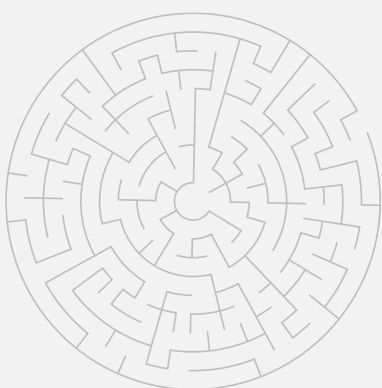
We established provisioning practices that create identical environments for Development, QA, and Production. This eliminates configuration drift and makes deployments predictable.

Elastic Scaling for Microservices Workloads

We enabled automatic scaling of compute resources based on real-time demand. This allows the platform to handle traffic spikes smoothly without manual intervention.

CHALLENGES

- On-prem Docker environments were configured manually which made it difficult to replicate environments or scale effectively.
- There was no structured load testing or baseline performance data which hindered the ability to plan for peak usage.
- Critical credentials were stored in weakly secured locations due to the lack of a centralized secrets management solution thereby violating compliance standards.
- No automated backup or recovery processes for workloads or persistent data.
- The absence of an orchestration framework led to downtime during hardware failures or high-load events.



SOLUTION

Our goal was to migrate from Docker to Kubernetes while building a resilient Kubernetes platform engineering foundation that combined automation, security, and reliability. Here is how we architected the solution:

Multi-AZ Kubernetes Cluster Deployment

We deployed a production-grade Kubernetes cluster across multiple availability zones. This means the app can update itself, replace broken parts, and handle traffic spikes without anyone noticing a glitch. If one node fails, another takes over immediately.

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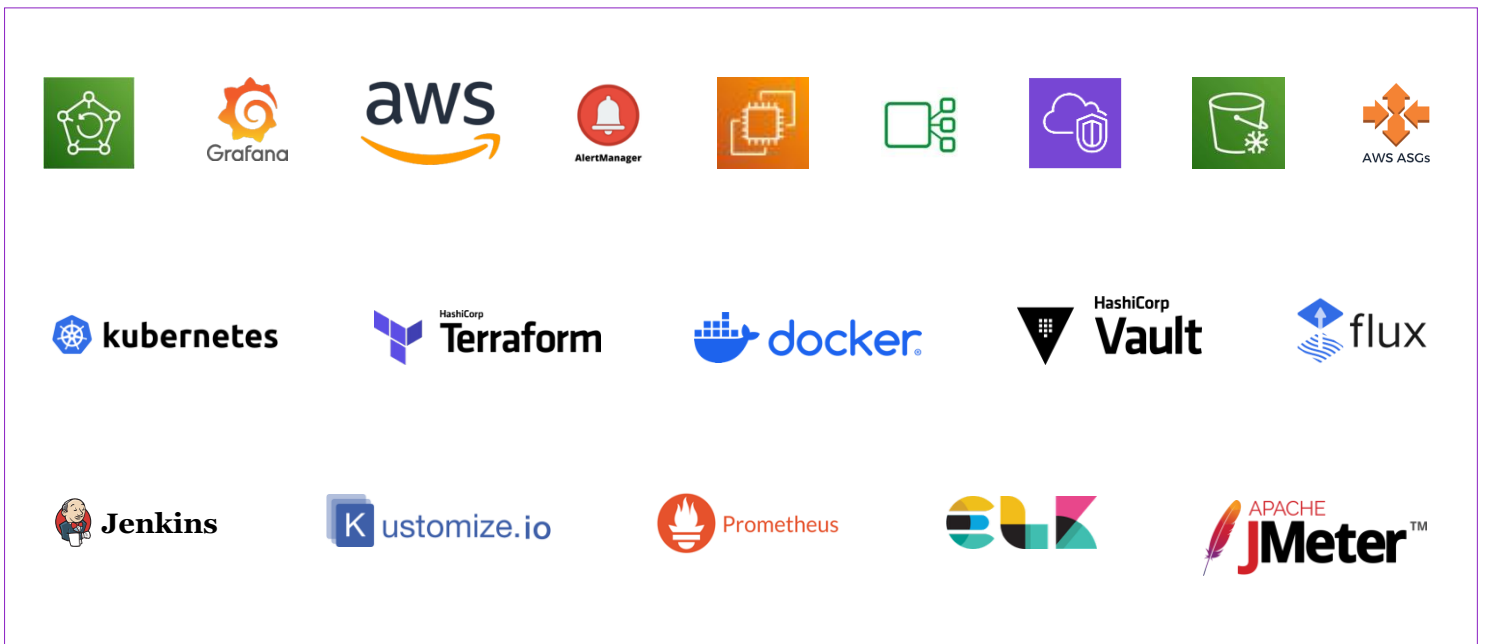
Streamlined, GitOps-Driven Delivery

To modernize how code gets to production, we integrated Flux and Jenkins. We shifted to a GitOps model where the "source of truth" for deployments lives in Git repositories. When developers are ready to release, they push code to a repository, and the system handles the rest safely and predictably.

Automated Backup and Disaster Recovery

We implemented AWS Backup to automatically protect storage volumes and application data. Backups are stored across regions, and we regularly test restores to ensure disaster recovery works when needed.

TECHNOLOGIES & TOOLS



Outcomes

60%

reduction in manual operations

4x

faster release cycles

65%

faster incident detection and response

ABOUT RISHABH SOFTWARE

As a Digital Engineering and Enterprise Transformation leader, we empower businesses to scale, innovate, and thrive in today's digital-first world through technology rooted in trust and transparency. We leverage emerging capabilities such as Cloud, Data Engineering & Analytics, AI, Automation and Application Engineering to drive digital transformation and unlock new opportunities. We have successfully served across 25+ countries, and we work towards customer delight as "WE CARE."

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