weaveworks

CASE STUDY

THE CUSTOMER

YOOX NET-A-PORTER GROUP (YNAP) is a unique ecosystem of 4 multi-brand online stores (NET-A-PORTER, MR PORTER, YOOX and THE OUTNET), and numerous online flagship stores for leading fashion and luxury brands. With over 19 years of experience in global luxury e-commerce, YNAP serves more than 4.3 million customers in 180 countries around the world.

YNAP introduced the "omnistock" system, a large change to their current logistics and warehouse operations models that allowed them to make all of their inventory available globally. The engineering team grabbed the opportunity to reassess one of the delivery platforms known as Mr Porter. After Mr Porter was re-platformed, its new frontend architecture was designed for microservices to handle every aspect of the website. After the initial implementation, teams faced multiple challenges including high infrastructure costs, large operational overhead and manual interventions for provisioning environments as well as long deployment times, all of which negatively impacted productivity.

> *"The real problem came within the following month when we were asked to build the production environment, and another six development environments. We went back to our delivery manager and said forget about feature development. We are now full time building environments."*
> **Robin Glen, Principal Developer**

CHALLENGES

Like many online retailers, YNAP is very focused on creating an impeccable experience for their customers. All internal teams that are concerned with infrastructure, Site Reliability Engineering (SREs), CI/CD and application development have one clear goal: to make it easier and faster to release applications.

Lack of autonomy for developers

Giving developers the freedom to spin up environments was one of the biggest challenges the teams faced. The infrastructure had to be provisioned first, because of interconnected microservices. Once the environment was ready, developers created a pull request in order to specify the required environment variables for all dependent applications.

YOOX NET-A-PORTER GROUP

Industry: Online Fashion Retail
Location: London

HIGHLIGHTS

- Establish self-service platforms for developers
- Spin up environments per pull request
- GitOps automation increases infrastructure stability

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Decreased developer productivity

Each new release took a significant amount of time because of shared environments, deployment processes spread across disparate pipelines, and blue/green deployment strategies that needed active monitoring and user inputs. A lack of standard processes and consistency was difficult to understand, follow and maintain, which made it difficult to understand.

Inflated infrastructure costs

Like most organizations, a big concern is infrastructure costs. Most of their development environments for example, needed less server resources than what was provisioned by default. Overall the current processes were not only time consuming but also required a huge cognitive load on each developer since they needed to be aware of every service required. The result was brittle environments, slow deployments and a lengthy and potentially unsuccessful disaster recovery plan.

Solution

YNAP formed a cross functional team made up of front-end development, CI/CD, SREs and infrastructure who decided to implement Kubernetes for a faster time to market, optimizing IT costs as well as improving scalability. In addition, the team needed to adopt vetted processes to create standards for a better developer experience.

The YNAP team re-architected their main components to run on EKS (Amazon's Elastic Kubernetes Service), Terraform, Helm and Istio. The team already uses Git as part of their workflow for a simple Content Management System (CMS) providing an authority of truth, permissions and an audit trail of changes. Once the team discovered Flux and the GitOps methodology for the first time, it all clicked into place and they settled on using these components for operating and managing both their infrastructure and applications.

Enhanced developer experience increases productivity

With the new deployment pipeline and tools in place (learn more about the set up in depth), the YNAP teams are now able to release an application within a full stack using GitOps. Since the application developers are familiar with Git and submitting semantic versions of their applications into helm charts, the team moved forward with little onboarding or training.

Consistent deployment pipelines allow for a "fire and forget" process instead of having to actively monitor every process. Even site automation smoke tests on a staging environment before merging onto the main branch can be accomplished in less than 10 minutes.

> *"This was a huge improvement for our team when it comes to audit trail and automating their workflow. Tickets are created in Git, they can't merge till approved. So they know if their manager approves, it's good to go live. And once merged, all relevant parties are informed as well."*

Autonomy with consistent configuration

Every team now has access to fast and reliable release deployments with a full live-like or staging environment at any given time. Developers spin up development instances with a pull request and do so even for an existing full stack environment. All microservices communication is now orchestrated through Git as is the underlying plumbing which is a huge time saving.

This has resulted in an increased spike of new applications and deployments, because the development team can rely on repeatable and consistent deployments with monitoring and alerting built in from the start.

Results

YNAP's cross functional approach to solutions and by implementing Kubernetes and GitOps when replatforming Mr. Porter allowed them to resolve problems swiftly and build a developer friendly and highly productive team operations.

> *"As a team we decided we wanted to adopt GitOps as our philosophy and this is something that has become a standard within all the teams using our Kubernetes cluster. We owe a lot of this mindset to Weaveworks and their work with Flux, this was a huge inspiration to us and we follow their work in the Kubernetes community closely."*

Decreased deployment times

By implementing an automated approach to deployments using GitOps, the development team are experiencing significant time savings.

Greater mean time to recovery

All of YNAP's infrastructure and configuration settings are now stored as code and can be easily replicated through automated workflows. Environments can be recovered within minutes.

Secure and consistent Kubernetes environments with disaster recovery

The YNAP team were able to reduce the time it takes for building new environments for their development teams from two weeks to less than 5 minutes. In addition, the teams are able to run nightly automatic provisioning of clusters from scratch and deploy an environment through a simple automation suite. Furthermore, the team has effectively implemented a built-in disaster recovery plan.

Improved stability and observability

Overall the infrastructure and deployment stability for YNAP has greatly improved based on automated and repeatable processes. Since alerting and monitoring is built in with every full stack environment that is spun up, the SRE team has greater confidence. Additional monitoring via Grafana dashboards has been integrated with the team's internal tool called Slipway.

If you'd like to follow YNAP's technical journey, please visit https://medium.com/ynap-tech.