

# Fortune 1000 Retailer Accelerates E-Commerce with AWS-Based SAP Hybris Solution

## Compliant, Secure and Highly Agile System Scales to 2M+ Users a Month

### Profile:

This Fortune 1000 retailer of home goods has more than 4,285 retail locations across 50 states, Washington, D.C., Canada, Mexico and Puerto Rico. The publicly traded brand also has a store within a store concept where customers can shop and purchase through the retailer. It sought to launch a new ecommerce portal to facilitate this process for its store-in-a-store partners, including everything from the shopping cart to the application and final purchase ticket.

### Challenge:

The chief challenge before the team was to architect, deploy and manage an SAP Hybris ecommerce platform that could scale to 2 million users a month. In concert with Flux7 AWS consultants, this retailer agreed to an AWS-based approach that would help deliver the solution to market faster, in a secure, highly available, PCI-compliant fashion. With a deadline looming, the two teams quickly got to work.

### Solution:

After assessing business and technology needs, the AWS consulting experts at Flux7 recommended the retailer deploy Hybris to a Docker cluster on ECS in order to simplify scaling and automation. This recommended solution was definitely ground-breaking as SAP Hybris had never before been Dockerized in AWS. As a result, it was important for the team to have a solid technology foundation for this project. The team created a solution built with Lambda, Aurora, ECS and WAF, along with CloudFormation, CloudFront, ELB, ECR, EC2, VPC, S3, RDS and more.

To quickly prove out the solution and achieve tangible benefits each step of the way, the team used a Scrum methodology, breaking the project into several Sprints. The first Sprint was focused on proving out the success of the Hybris application on ECS. The team started by 'Dockerizing' the Hybris application and created an ECR container registry with cross-account access. From here, they created the Hybris ECS cluster. Having achieved quick success, Flux7 helped this retail client deploy a new cloud-based SAP Hybris solution in record-time that featured agility, PCI compliance and security.

*These distinct benefits were achieved through three key focus areas:*

**Automation:** Using AWS ECS as a base technology made it seamless to manage containers and deploy services. Lambda was deployed in conjunction with ECS to automatically manage container health and self-heal it if needed. Lambda was also used manage auto-scaling of containers, automatically increasing or decreasing based on demand.

Using Jenkins, the Flux7 team was able to add levels of automation to the project that automated application build flows, deployed code and performed functional testing. By doing so, the team was able to automate stack creation and updates. And, with the use of CloudFormation, Flux7 experts added templates for a variety of stacks, and created managed policies for them. By creating and managing AWS resources this way, the team has added a layer of automation that eases provisioning and updating of services while maintaining proper parameters for each.

**Scalability:** As soon as it was released by AWS, Flux7 quickly adopted the new ECS application, Autoscaling, where containers can scale based on CPU/Memory utilization. Its team of experts created custom CloudFormation resources and Lambda functions to achieve ECS autoscaling, making the entire system highly scalable.

CloudFront was used to help increase speed and availability of the portal to clients. Through AWS CloudFront, Flux7 was able to speed up distribution of web content to end users through decreased end-user latency by decreasing geographical distance, and reduce the load on servers through caching.

Aurora, AWS's relational database engine, was a natural fit for the project due to its Hybris-friendly out of the box language and its cost-effective approach to combining speed and reliability. Aurora also made it easier to scale the retailer's ecommerce service as Aurora scales linearly and will burst to higher rates if needed. Aurora also contributed to greater automation.

Last, Elastic Load Balancers were used to automatically distribute incoming traffic across multiple Amazon EC2 instances. For this ecommerce solution, multiple software load-balancers scale to meet the retailer's large customer demand, enabling greater levels of fault tolerance and seamlessly providing the required amount of capacity needed to distribute application traffic.

**Security:** With the need to meet PCI requirements and ensure data security of its ecommerce portal, Flux7 architected the solution using Security by Design

principles. Bolstered with an Amazon Relational Database Service (RDS), centralized logging and threat management, the security architecture also included encryption for data at rest and in motion and followed SAN prescriptions such as separation of services, segregation of duties, and least privilege access.

Moreover, WAF played an important role in securing the new ecommerce system. Flux7 automated creation of WAF layers using AWS WAF and AWS Lambda. Combined with Lambda, WAF allowed for a self-managing system to protect against potential attacks. Last, ECS contributed to system security by minimizing the need for human intervention into host EC2 instances and running immutable Docker containers.

### Results:

The Flux7 team ensured ongoing results through complete knowledge transfer and training on the new fully managed system, educating both developers and operations on best practices to empower them to effectively and efficiently manage the solution moving forward.

Flux7's AWS expertise helped this leading retailer deploy a new cloud-based SAP Hybris ecommerce portal in record time. Once the Hybris platform was Dockerized, the development team was able to quickly and easily provision an ECS cluster, develop and test to it, speeding time to market and quickly ensuring project feasibility.

Moreover, the Flux7 designed solution gave this retailer the ability to easily and consistently replicate applications on local machines as well as AWS. The automated, replicable environment met this retailer's need for scalability, PCI compliance and automation that grew its agility many-fold. Most importantly, with the new ecommerce portal, this retailer was open for business, able to scale the environment to match demand, meaning that they could greet and process payment for each and every customer that came through the new sales portal.



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