

DevOps

DevOps for Container Application

Automotive Customer

DevOps for Serverless Application

CUSTOMER — International automotive OEM

The customer, an international automotive OEM, operates a configuration system comprising a configurator and multiple microservices with complementary functionalities. The system was hosted on-prem and was migrated to the cloud to leverage the cloud's offerings and benefits, for example increased scalability and flexibility. Furthermore, during the migration project the customer onboarded a DevOps team and thereby re-gained control over their infrastructure.

CHALLENGE — It's all about scalability

Since the data center, in which the on-prem version of the system was operated, was to be decommissioned, the migration project had a hard and challenging deadline.

The customer had limited cloud and DevOps experience. Additionally, the DevOps-team was onboarded during the migration project and did not possess in-depth knowledge related to DevOps processes and cloud operations. For example, operating the cloud environment using Infrastructure as Code to guarantee consistent and reliable deployments and environments. Thus, in addition to migrating the system to AWS, there was a need to develop know-how and establish DevOps processes.

SOLUTION — Fast and secured development with modern methods

To address the challenges, MHP consultants helped design the system's architecture in AWS and implemented parts of the architecture leveraging AWS CDK as tooling for Infrastructure as Code. By using serverless services like Fargate and Lambda where possible, the overhead to migrate to AWS was greatly reduced. Additionally, the effort to later operate the system is significantly diminished thereby.

Furthermore, CI/CD pipelines were implemented to deploy quickly and reliably to AWS. With solutions centrally provided by the customer's Cloud Center of Excellence the effort to implement the pipelines was considerably reduced.

Complementing the pipelines, DevOps processes have been established, including branching strategies, Code Reviews as quality gateways, integration of static code analysis and testing among others.

This has not been achieved over night, but in iterative sprints following an agile Scrum approach. This approach has not stopped with the successful migration to AWS but continues to strive for operational excellence and continuous improvement of the system.

The DevOps team has been onboarded step by step during the migration, with pair programming being one of the main tools for knowledge sharing. DevOps-related services have been implemented in close collaboration with the DevOps team, fully tailored to their needs and preferences.

The project would not have been successful without the full commitment of all involved parties and the customer's management's amazing support.

The architecture construct was realized using the following AWS services:

- **Amazon API-Gateway** for API management
- **AWS Certificate Manager** to manage domain certificates
- **Amazon Lambda** to host business logic
- **Amazon Route53** to manage the DNS
- **Amazon ECS** for hosting the container applications

- **GitLab** for VCS, automating the continuous integration, delivery, and deployment of infrastructure changes
- **AWS Cloud Development Kit (CDK) with Typescript** for creating infrastructure templates
- **AWS X-Ray** integrated into StepFunctions to allow detailed monitoring
- **AWS CloudWatch** for logging, monitoring metrics and alarms

OUTCOMES – Server less and DevOps based, benefits more

The migration project has been completed successfully within the given timeframe as a joint effort of all parties involved. The DevOps team has been onboarded and is now expertly operating the system in the cloud, leveraging integrated, state-of-the-art services like AWS CloudWatch, X-Ray and CloudWatch Alarms.

MHP continues collaborating with the customer on the exciting follow-up project deploying the cutting-edge, stateless version of the configurator, which can fully leverage the scaling potential offered by the AWS cloud.

Additionally, MHP continues to support the customer on its journey of continuously improving the DevOps processes.

ABOUT THE PARTNER - “ENABLING YOU TO SHAPE A BETTER TOMORROW”

Functioning as a technology and business partner, MHP digitalizes its customers’ processes and products, and guides them through IT transformations along their entire value-creation chain. MHP is a digitalization pioneer for the mobility and manufacturing sectors with expertise that can be transferred to a wide range of industries. MHP is a distinguished AWS partner, currently holding the Advanced tier status and offering Consulting as well as Software services to its customers. Additionally, MHP is a member of the APN Immersion Day program as well as AWS Well-Architected Partner and to date obtained 10 AWS Service Delivery Program Validations (SDPs), two of which MHP achieved as a launch partner.

MHP serves over 300 customers worldwide, including large corporations and innovative SMEs. MHP advises on both operational and strategic issues, offering proven IT and technology expertise as well as specific industry know-how. MHP operates internationally as OneTeam with headquarters in Germany and subsidiaries in the USA (since 2011), UK (since 2016), Romania (since 2014), and China (since 2013).

The MHP Group has been shaping the future alongside its customers for over 25 years. The MHP team of over 3,300 employees is united by the company’s promise of excellence and sustainable success. This promise continues to drive MHP – today, tomorrow, and in the future.

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