

Development of a Central Platform for Service Interruptions at DB Regio Bus



DB Regio Bus is the largest bus operator in Germany and focuses on local public transport in rural areas. The bus companies, which were independent in the past, have been merged regionally and are market leaders in the German public transport market.

THE CHALLENGE

As a central service provider for mobility, unplanned service interruptions caused by events such as staff shortages, accidents or natural disasters must be avoided quickly and in a well-coordinated manner. DB Regio Bus provides a central platform for coordinating service interruptions for this purpose. On this platform, local bus companies can dynamically provide capacity in an emergency in order to minimize the consequences of train cancellations for customers.

The application is developed and continuously expanded by an external service provider. The required infrastructure at the customer's site must therefore dynamically scale and implement changes to the application code. To meet these requirements, a completely new DevOps process had to be established from deployment to operation.

Only services were to be used for the infrastructure components in order to provide a cloud-native architecture design to a high degree. At the same time, it had to be ensured that the internal group guidelines with regard to security and compliance were implemented and that the cloud services used meet the requirements.

THE SOLUTION

PROTOS Technologie GmbH assisted in the planning, integration and transfer of the application into operation according to DevOps.

The following AWS services were used for the infrastructure components: AWS Beanstalk in the application backend, Lambda functions in combination with AWS API Gateway for API requests, S3 in combination with CloudFront for delivering web content, and AWS Cognito as authentication service for external access.

To ensure the highest possible level of automation, all components were generated via Infrastructure as Code. Terraform was used for this purpose at the customer's site.

By integrating AWS Codecommit as a repository solution for the required application code as well as for the Infrastructure as Code scripts in combination with AWS CodePipeline and AWS CodeBuild / CodeDeploy, the requirement for the highest possible level of automation could be implemented. The services used were able to meet and additionally increase the group's internal security requirements.

THE BENEFITS



Digital process for managing service interruptions.

Digitization of a formerly analog process for managing unpredictable service interruptions in local rail traffic.



Project management of internal and external stakeholders

The in-house specified configurations meet all corporate requirements regarding security and compatibility.



Advantages of the implemented architecture

Maintaining compliance requirements such as full encryption of data at rest and in transit, least privilege principle, and centralized, audit-proof logging.



A scalable, highly available solution.

Achieved by using S3 for web hosting, AWS Elastic Beanstalk and AWS Relational Database Service. Additionally, the implementation of CI/CD pipelines for fully automated deployments with integrated testing.



Introduction of DevOps processes and cultural change.

The developed application and infrastructure are the starting point for further DevOps-like projects. With the experience gained, future projects can be developed and integrated more easily and quickly at DB Regio Bus.

"PROTOS Technologie GmbH provided us with support during the integration of a central platform for the coordination of business interruptions in local rail traffic. Thanks to the cooperation, we were able to successfully implement and realize compliance requirements, high availability and automated deployments. The qualified staff of PROTOS Technologie accompanied and supported us in a highly professional manner throughout the entire process."

*Jörg Dierks, Head of Cloud & Network
DB Regio AG, Bus Division*



ABOUT PROTOS TECHNOLOGIE GMBH

At the intersection between IT and management, we work hand in hand with you. We support your team as consultants in your current cloud topics such as migration, redesign and technical project management.

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