

Workflow Management Modernization

Revitalizing a UK facilities firm's administrative portal and mobile app through a complete code overhaul, robust AWS infrastructure, and Flutter development to achieve operational excellence and enhanced reliability.

Overview

A UK facilities services firm required a comprehensive modernization of its administrative portal and mobile application to address performance, scalability, and efficiency issues caused by legacy technology.

- Executed a full code overhaul using the latest stable frameworks (PHP) and rebuilt the mobile app with Flutter (Dart), ensuring a more stable and secure system.
- Established a scalable AWS infrastructure leveraging EC2, dedicated servers, and SQS to handle increased data load, real-time notifications, and seamless syncing with MS Dynamics 365.
- Introduced key efficiency features on the mobile app, including automated SharePoint file syncing, custom form creation, and real-time map view/geofencing for operator tracking.
- Significantly improved user experience, streamlined operations by minimizing latency, and enhanced data reliability through accurate operator activity tracking.



Client Profile

A UK-based facilities services firm that specializes in tasks requiring precise operational tracking.

Challenges: Performance Degradation and Legacy Code

The client's legacy platform created several operational and technical roadblocks:

- **Performance Bottlenecks:** The system struggled to handle increasing data load and user interactions seamlessly, leading to slow processing times.
- **Codebase Obsolescence:** Outdated framework and package versions in the codebase created instability, security risks, and high maintenance costs.

- **Scalability Issues:** The existing architecture lacked the capacity to support data-intensive tasks and the required real-time notifications.
- **Operational Inefficiencies:** Lack of automation for essential tasks like file syncing and form creation required manual effort and custom reporting.

Solution: AWS-Powered Code Overhaul and Automation

QBurst executed a comprehensive modernization strategy focused on bringing the application codebase to modern standards and building a highly scalable and reliable backend infrastructure on AWS.

- **Code Modernization:** The administrative portal's codebase was updated to the latest stable framework and package versions (PHP), and the mobile application was rebuilt using Flutter (Dart), allowing for a single codebase for multiple platforms.
- **Scalable AWS Infrastructure:** A dedicated and highly scalable infrastructure was established on AWS EC2, using separate dedicated servers for:
 - API requests and the user-facing web server
 - Data syncing with MS Dynamics 365
 - Real-time notifications via an MQ server
- **Efficiency with AWS SQS:** AWS SQS (Simple Queue Service) was integrated to manage queues for data-intensive operations and data syncing, ensuring streamlined operations and minimized latency.
- **Enhanced Mobile Features:** Key efficiency features were deployed on the mobile app:
 - Offline support with data syncing upon reconnection (using SQLite)
 - Real-time map view with geofencing and background location tracking for monitoring operator movement and job status (Firebase for push notifications)
 - Automated SharePoint file syncing with the mobile app

Technical Highlights

- **Full-Stack Modernization:** PHP (portal) and Flutter/Dart (mobile app) provided a stable and feature-rich development environment.

- **AWS Integration for Scalability:** Utilized AWS EC2 for dedicated servers and AWS SQS for efficient queue management of data syncing tasks.
- **Real-Time Communication:** Employed Firebase for reliable push notifications and messaging, alongside a dedicated MQ server.
- **Data Persistence & Logic:** Used MySQL and DynamoDB for various data storage needs, and integrated AWS Lambda for event-driven processing and logic.
- **Enhanced Data Reliability:** Geofencing and background location tracking provided accurate, automated monitoring of operator activities.

Impact: Driving Operational Efficiency & Productivity

The modernization project resulted in immediate operational improvements and a more secure platform:

- **Improved User Experience & Speed:** The optimized administrative portal delivered a 50% increase in data processing speed and ensured smoother user interactions.
- **Streamlined Operations:** The use of AWS SQS and dedicated server architecture minimized latency and ensured seamless, reliable data processing.
- **Boosted Productivity:** Automated SharePoint syncing and the ability for administrative users to create custom forms and reports drastically streamlined workflows, saving time.
- **Enhanced Data Reliability:** Real-time map view and geofencing features provided accurate and verifiable tracking of operator activities, bolstering data authenticity.
- **Future-Ready Platform:** Updating the entire codebase ensured a more stable, secure system with reduced downtime and maintenance costs.