



**DRIVING EFFICIENCY:
UNIFIED API PLATFORM DOUBLED
TOLL COLLECTION SPEED**

DATAMATICS

The client is a US-based tolling authority operating several thousand kilometers of toll roads and bridges and serving several thousand commuters every day. This organization has, over time, been transitioning itself from legacy, siloed applications towards more modern and scalable technology landscapes, where the core business attributes reliability, accuracy, and system uptime are concerned.

The Challenge: Modernizing a Fragmented and Legacy Tolling Ecosystem

Over the years, the tolling environment had evolved into a patchwork of systems built at different times for various needs. As the network expanded, this landscape became increasingly restrictive:

- Legacy applications owned different parts of the tolling lifecycle and shared limited interoperability
- Data sat in multiple systems, making end-to-end visibility difficult
- Manual checks and reconciliations slowed down processing
- Rigid system architectures made it hard to scale with rising traffic volumes
- User access and governance were inconsistent across systems

The client needed a modern platform to bring these separate systems together. It also had to support future growth without the restrictions of outdated infrastructure

The Solution: Cloud-enabled API-First Architecture

Datamatics collaborated with the client to create and launch the Tolling Operations Management Platform (TOMS). This solution aimed to merge older components and improve the speed and reliability of toll operations.

Key parts of the modernization included:

- **Unified API Platform**
A centralized API layer was introduced to manage the entire toll process, from transaction generation to reconciliation. This replaced several independent legacy modules
- **Role-Based Access Control**
A structured access model provided consistent governance and security across user groups. This addressed issues left by older systems
- **Modern, Responsive User Interface**
A new, more intuitive user interface with real-time insights and simplified daily workflows replaced the outdated screens
- **Cloud-Native Deployment on GCP**
The platform operated on Google Cloud Platform, using Kubernetes offering high availability, scalability, and operational resilience that the old infrastructure couldn't provide
- **DevOps-enabled CI/CD Pipeline**
A CI/CD pipeline to simplified deployments, cut down on manual work, and added predictability to release cycles
- **Integration with Enterprise Systems**
The new platform enabled connection between AS400 and the Enterprise Data Warehouse ensuring smooth data exchange without harming ongoing operations

With this strategy, the client shifted from outdated systems and embraced a unified, API-first architecture that better served the needs of modern tolling operations.

Impact: A Modernized Tolling Backbone Delivering Scalable, High-Performance Operations

2X faster toll processing,
enabled by automated
workflows replacing legacy
manual steps

99.6% system availability,
driven by a resilient cloud-
native architecture

Unified toll operations through
the consolidation of fragmented
legacy systems

Future-ready scalability,
supporting evolving traffic
demands and digital
enhancements

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