

# TMB supports open data project with Red Hat 3scale API Management



Transports Metropolitans  
de Barcelona

## Software

Red Hat® 3scale API  
Management

Transports Metropolitans de Barcelona (TMB) manages the public urban rail and bus networks across the city of Barcelona and its surrounding municipalities. To continue improving its services to meet modern user demand, TMB decided to provide access to its data to third-party developers via an application programming interface (API). To support its open data project with robust access controls, the company added Red Hat 3scale API Management to its existing Red Hat environment. TMB can now provide real-time transportation data to its mobile app users and third-party services, improving service quality and customer satisfaction.



## Public transportation

7,935 employees

## Benefits

- Gained access controls for sharing real-time transportation data with its mobile app users and third-party developers
- Established leadership position to participate in collaborative transportation data initiatives
- Gained flexible scalability to accommodate shifts in data demands

*“We see 5 million requests for transport data on a typical day in Barcelona, but if it rains and everyone decides to take the metro, we could see demand suddenly jump to 10 million requests. With Red Hat 3scale API Management, we can now more easily scale to deal with that shift in demand.”*

**Eduard Porquet**

Software engineer, Transports Metropolitans De Barcelona (TMB)



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Software engineer, Transports  
Metropolitans De Barcelona (TMB)

## **Sharing transportation data to improve passenger experience**

Transports Metropolitans de Barcelona (TMB) manages the public urban rail and bus networks across the city of Barcelona and its surrounding municipalities. In 2017, it managed 592 million customer journeys. As with any integrated public transport network, TMB’s operation is extremely complex. On any given day, the company has 1,000 buses on the roads and more than 120 urban rail stations in operation. It currently manages around 80% of Barcelona’s bus and urban rail transportation.

Large, complex operations, however, can lead to service disruptions that are shared instantly by frustrated travelers via social media. Barcelona experiences around 1,000 of these service disruptions per year. To achieve traveler experiences equal to Europe’s best transport networks, TMB decided to open access to its data—including detailed topographical and land-use maps, as well as schedules and other service details—to external developers via an application programming interface (API).

However, as a key part of this open data project, the company needed to retain access control. “Data transparency can improve efficiency, service quality, and user perception, but we also needed a way to prevent our data and services from being abused” said Eduard Porquet, Software Engineer at TMB.

## **Simplifying API management with new platform**

As a long-time Red Hat customer, TMB decided to use Red Hat 3scale API Management to provide controlled access to its data and public-facing API, integrated with its internal-facing API.

“We have used Red Hat Enterprise Linux and Red Hat JBoss Enterprise Application Platform for many years,” said Sergio Edo Arquero, Software Engineer at TMB. “There are very few companies that can deliver the enterprise-level support that Red Hat offers.”

Red Hat 3scale API Management lets TMB share, secure, control, and monetize its APIs on an infrastructure platform built for performance, customer control, and future growth. In addition, 3scale components can be placed on premise, in cloud environments, or on any combination on-premise and cloud environments.

With these capabilities, TMB has created a self-service portal for developers to retrieve authentication credentials for encrypted access to TMB’s APIs and applications.

## **Matching Europe’s leading municipal transport services**

### **Improved transportation experience with real-time data**

With its platform based on Red Hat 3scale API Management, TMB can offer access to real-time transportation information to passengers through its new mobile application, TMB App. Users can plan routes using real-time location information and expected travel times, as well as purchase tickets and access promotional offers.

Additionally, third-party applications—such as Google Transit, Citymapper, Moovit, or App&Town—can access TMB’s travel data to embed real-time Barcelona travel information. TMB supports these user-facing features with web-based services running on a service-oriented architecture (SOA). 3scale API Management also lets TMB easily manage external requests for data made through the tmb.cat website.

This data integration with other popular services makes planning and using transportation easier not only for local users, but also millions of tourists who visit the city each year.

### **Joined collaborative development efforts**

By opening its data to third parties, TMB and Barcelona are now in line with similar initiatives throughout Spain, such as Empresa Municipal de Transportes de Madrid (EMT)'s MyNavega offering that lets users configure maps and data via its GIS. The Moovit transit app currently works directly with 35 cities in Spain, while Google Transit works directly with 27 Spanish cities.

As a result of its open data project, TMB can now participate in and benefit from a network of developers across these programs who are applying real-time transportation data to new use cases, from academic scheduling to concert venues to tourism programs. Insights from these efforts will also help TMB and the city of Barcelona continue to improve their transportation services.

### **Gained flexible scalability to accommodate data demands**

With a hybrid deployment model, TMB can work across on-premise, cloud, hybrid environments to quickly share data with its app and third-party services.

"We see 5 million requests for transport data on a typical day in Barcelona, but if it rains and everyone decides to take the metro, we could see demand suddenly jump to 10 million requests," said Porquet. "With Red Hat 3scale API Management, we can now more easily scale to deal with that shift in demand while avoiding disruption to customer-facing services."

### **Expanding integration to continue improving services**

TMB plans to add more services and data to its platform, as well as integrating with other national and regional rail services and potentially adding ride-sharing or Barcelona's public bicycle-sharing system, Bicing. With these expansions, the company can continue its mission to provide comprehensive, accurate transportation information to travelers and third-party developers across Barcelona.

The company is also evaluating adding Red Hat Ansible® Automation to its Red Hat environment to free in-house resources by automating manual tasks and Red Hat OpenShift® Container Platform to support hybrid-cloud-ready application development.

"We see Red Hat as a long-term partner for innovation," said Porquet. "We favor open source solutions, but we need the enterprise-level support and service-level agreements. Red Hat provides both."

## About Transports Metropolitans De Barcelona (TMB)

Transports Metropolitans de Barcelona (TMB) is the main public transportation operator in the Barcelona metropolitan area. It aims to make journeys faster and more comfortable, offer a public service that is accessible to all, and improve quality of life in the Barcelona metropolitan area.

## About Red Hat



Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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