

# Transports Publics Genevois standardizes application delivery with Red Hat



Transports Publics Genevois (TPG) provides regional transportation services to around 600,000 passengers daily. To avoid downtime that affected its services and enhance IT security, the organization sought to standardize its many Linux distributions into a single container environment and adopt a continuous integration and continuous delivery (CI/CD) approach. TPG created a container environment based on a mature, supported Kubernetes solution from Red Hat and a centralized container image registry. Now, the organization has eliminated maintenance downtime and achieved the scalability and efficiency to keep pace with peak demand.

## Software and services

Red Hat® OpenShift®

Red Hat Quay

Red Hat Training

## Partner

Apalia



## Transportation

**2,151** employees

## Benefits

- Saved 30% of weekly work time with standardized, automated CI/CD pipeline
- Automated scalability to meet peak demand
- Reduced risk by regaining control of code
- Enhanced in-house technology skills with expert training and support

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**Charles Gauchon**

Head of IT Infrastructure and Operations,  
TPG



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## About Red Hat Innovators in the Open

Innovation is the core of open source. Red Hat customers use open source technologies to change not only their own organizations, but also entire industries and markets. Red Hat Innovators in the Open proudly showcases how our customers use enterprise open source solutions to solve their toughest business challenges. Want to share your story? [Learn more.](#)

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Head of IT Infrastructure and Operations,  
TPG

## Standardizing increasingly diverse IT environment to improve efficiency

Since 1977, Transports Publics Genevois (TPG) has been working to enhance mobility with regional public transportation services. Around 600,000 passengers travel using TPG trolleys and buses each day—half of which are electric vehicles, with one project even operating autonomously. TPG focuses on creating innovative, sustainable solutions that reflect its commitment to both its customers and the environment.

With a mix of Microsoft Windows and several Linux distributions supporting its services, complexity became a challenge to efficient operations. “Managing multiple Linux environments and distributions was very time-consuming,” said Charles Gauchon, Head of IT Infrastructure and Operations, TPG.

Additionally, a lack of standardized development and delivery processes for third-party developers creating TPG’s applications not only delayed projects, but also made it impossible for TPG to check the code for vulnerabilities.

“The developers build these applications in an external environment, then send us the code package by email or file transfer, for example. We just deployed them to the hosted environment,” said Gauchon.

To simplify management and security, TPG decided to standardize its Linux environment and automate application development and deployment with a CI/CD approach.

## Supporting rapid application development and deployment

After performing benchmarking tests for several potential solutions, TPG decided to use Kubernetes container technology as the foundation of its newly standardized IT environment. Working with local Red Hat partner Apalia, the organization chose Red Hat OpenShift to take advantage of Kubernetes innovation backed by expert support. Red Hat OpenShift provides a centralized, container-based environment for developers and operations teams to collaborate on creating, delivering, and managing applications across hybrid infrastructures.

“Red Hat OpenShift is the most mature, feature-rich Kubernetes distribution on the market, and a Red Hat subscription also offers the best support,” said Gauchon. “We were also reassured by the success of one of our biggest clients, who has used Red Hat OpenShift to reduce configuration times and give developers better access to data.”

TPG also adopted Red Hat Quay to create a registry for building and storing container images it creates based on source code from suppliers, now saved in GitHub. Its Red Hat OpenShift platform uses this registry as a single source of images for deployment.

Working closely with Apalia, TPG completed initial deployment of Red Hat OpenShift in an on-premise VMware environment and migrated several smaller, internal-facing workloads, including Atlas, GR, and Confluence. Now, TPG has migrated some of its biggest, critical Java™-based applications to run on Red Hat OpenShift, from its sales platform and mobile application back end to its corporate website and web shop—where passengers can buy or renew transit pass subscriptions.

“Customers can now use our application, built on Red Hat OpenShift, to buy tickets and view their itineraries, including train arrival times, where they will need to change lines, and more,” said Gauchon.

To help its teams adopt best practices for its new Red Hat technology, as well as CI/CD and DevOps, TPG engaged Apalia and Red Hat for training, including one week of custom training on Red Hat OpenShift.

“We have changed the way we work,” said Gauchon. “It’s now all based on Git, automation, and CI/CD.”

## **Providing reliable IT foundation for efficient transportation services**

### **Eliminated downtime and delays with efficient development and deployment**

A standardized, automated CI/CD pipeline has helped TPG's developers save 30% of work time per week. Instead of relying on the IT department for provisioning, they can use self-service capabilities to create development or pre-production environments on demand to test, validate, commit, and deploy code as needed.

Once code is ready for production, the IT operations team can deploy it in a single step. These deployments can be completed during regular business hours without affecting service availability. Previously, TPG required 1-2 hours of downtime several times per month to deploy new versions of code.

"With Red Hat OpenShift, we can upgrade applications and launch new services during the day without affecting our customer experience," said Gauchon.

### **Improved scalability to meet peak demand for transportation services**

The automated scaling capabilities provided by using Red Hat OpenShift help TPG add or remove container resources as needed to support shifts in demand for transportation, such as during winter months or when students return to school.

"Red Hat OpenShift gives us the elasticity we need by automatically provisioning additional capacity when we need it—and without additional staff needed, helping us save time and money."

### **Reduced risk by improving code control**

Creating a single registry for verified container images using Red Hat Quay has helped ensure TPG can deploy trusted, verified code to its IT infrastructure.

Instead of sending a code package for deployment to TPG, the organization's suppliers load their container images directly into Red Hat Quay. TPG can then scan the code for vulnerabilities or other errors before building and deploying the container into its Red Hat OpenShift environment. If any security issues are detected, Red Hat Quay sends an alert and automatically blocks future deployments until the issues are investigated and resolved.

"We are back in control of our source code," said Gauchon. "We control the container images to ensure that the code we are deploying on our systems does what it needs to in a secure way. We don't have any surprises."

### **Enhanced in-house technology skills with expert training and support**

TPG worked with Apalia during and after deployment to help its teams learn best practices for CI/CD and DevOps. The organization also engaged Red Hat Training to help its teams become familiar with its new container platform technology.

"Kubernetes has a lot of parts to manage," said Pierre Vacherand, Chief Technology Officer, Apalia. "With most Kubernetes distributions, you need a wide range of open source skills for a production-ready Kubernetes platform: Java networking, storage, role management, and more."

Red Hat also provides ongoing support and guidance as needed on related topics like backups, object storage, and more.

### About Apalia

Apalia is an advisory, engineering, and managed services company specialized in cloud, container, and automation technologies. Since Apalia's inception in 2010 in San Francisco, Apalia team members passionately assist clients in their transformational journey with innovative technologies.  
[apalia.net](http://apalia.net)

## Continuing the journey to modern IT

To build on its success with CI/CD, DevOps, and Red Hat OpenShift, TPG plans to expand its use of agile approaches. "Beyond the infrastructure benefits we've already achieved, completing our IT transformation and gaining business-side benefits means adapting our work processes to become more responsive and collaborative as well," said Gauchon.

The organization is also evaluating adding several Red Hat technologies to its IT environment to further improve efficiency. Red Hat Ansible® Automation Platform will be used to automate all of its application and network environments—both Microsoft Windows and Linux. Red Hat OpenShift Data Foundation (formerly Red Hat OpenShift Container Storage) is being considered to add persistent, software-defined storage optimized for Red Hat OpenShift.

TPG plans to showcase these technology enhancements as part of its future talent recruitment efforts.

"Red Hat technologies will continue to play a vital strategic role in the future of our business, not only by modernizing our IT environment and improving efficiency but also sharing those improvements with the world," said Gauchon. "Having Red Hat OpenShift in our job descriptions shows that we have a very modern IT environment, and we're already seeing greater interest and motivation to be involved in projects."

## About Transports Publics Genevois

TPG's mission is to contribute to the management of mobility in the territory of Geneva by offering a quality transport offer in accordance with the principles of sustainable development. In all their actions, they strive for excellence in the service of the public community.

### 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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