

# HERZOG TECHNOLOGIES KEEPS RAILROADS ON TRACK WITH RED HAT



## SOFTWARE AND SERVICES

- Red Hat® Enterprise Linux®
- Red Hat CloudForms
- Red Hat Satellite
- Red Hat Consulting

To make the rail industry safer, Congress has mandated a nationwide implementation of positive train control (PTC) technology. This highly advanced system automatically stops trains before certain types of accidents occur. Implementing this technology, however, is beyond the financial means and expertise of many railroads. Herzog Technologies, a leader in the rail signal and communications industry, used Red Hat technology and services to develop a cloud solution that helps railroads quickly and cost-effectively implement PTC technology. As a result, Herzog has reduced infrastructure costs and gained a competitive advantage in the railroad and PTC markets.



## LOGISTICS AND TRANSPORTATION

### BENEFITS

- Launched first hosted PTC solution in the market, resulting in greater competitive advantage
- Reduced PTC deployment time while maintaining consistency and accuracy
- Cut infrastructure and IT administration costs while gaining a new source of revenue

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TRAVIS ROLLINGS  
DIRECTOR OF OFFICE SYSTEMS, HERZOG TECHNOLOGIES



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## SMALL RAILWAYS STRUGGLE TO ADOPT PTC SYSTEM

After a crash in Southern California in 2008 between a commuter train and a freight train, Congress mandated the nationwide implementation of the PTC communications system by December 2015. The Federal Railroad Association funded an analysis of the costs and benefits of deploying PTC technology and estimated annual ongoing financial benefits after completion of between US\$2.2 billion and US\$3.8 billion. Railroads will gain these benefits through line capacity enhancement, improved service reliability, faster running times, better track maintenance, and higher safety standards.

However, due to the complexity of the United States rail network, implementing PTC technology has proven difficult. To avoid a partial railway shutdown, Congress extended its deadline to December 2018. Railroads that are not compliant by the deadline could face crippling monetary penalties between US\$2,500 and US\$25,000 per violation per day.

Herzog Technologies has implemented full, on-premise PTC solutions for its customers. To help smaller railways quickly meet the PTC mandate, the company decided to use its experience and expertise to build a cost-effective, cloud-based hosted solution.

“A lot of railroads don’t have the staff, the expertise, and, most important, the money to implement the same kind of system as larger Class 1 railroads,” said Travis Rollings, Director of Office Systems at Herzog Technologies.

With a hosted solution, smaller railroads could implement PTC technology quickly and at a much lower cost.

“We wanted to make it easy for new customers to onboard affordably and quickly,” said Rollings. “Plus, a cloud environment would let us easily release software updates to customers with configuration management and version control.”

## HERZOG BUILDS A SCALABLE, AUTOMATED CLOUD SOLUTION WITH RED HAT

Herzog chose to build its new PTC solution on a private cloud powered by Red Hat Enterprise Linux and supported by Red Hat Satellite and Red Hat CloudForms. These technologies help with deployment of complete back-end PTC implementations that serve as a back end to a complex Internet of Things system.

“The Red Hat environment scales easily and minimizes the footprint Herzog needs to host many customers in its datacenters,” said Rollings. “This way, Herzog can offer greater value while also accelerating deployment of PTC technology nationwide.”

Herzog implemented Red Hat Enterprise Linux as a stable, flexible foundation to support its data-center. The company uses its Red Hat CloudForms infrastructure to configure virtual machines and runs Red Hat Satellite to ensure the infrastructure is secure and compliant with various standards.

“We chose Red Hat CloudForms to transform our existing virtualization infrastructure into a true private cloud because it provides on-demand functionality to effectively scale the virtualization infrastructure and iteratively improve the solution,” said Rollings. “And Red Hat Satellite provides underlying system management that helps us manage our complete software life cycle, from test to production.”

Herzog also took advantage of Red Hat Consulting to gain expert help with deploying its new infrastructure.

“From day one, Red Hat has been great to work with,” said Rollings. “The Red Hat Consulting team was incredibly hands-on and provided important mentoring and knowledge transfer to our team. They realize we’re all working toward the same goal. Without Red Hat, this would have been a far more complex undertaking, and we would not have been able to onboard new customers as quickly.”

## **NEW SOLUTION HELPS HERZOG DELIVER BETTER PTC SOLUTIONS GREATER COMPETITIVE ADVANTAGE**

While several other companies were working to develop a hosted PTC solution to compete with Herzog’s offering, Herzog took advantage of Red Hat’s experience delivering PTC communications systems to the railroad industry – and the capabilities of the new Red Hat cloud infrastructure – to rapidly develop the automation needed to support its automated PTC hosting solution. As a result, Herzog was the first company to release a hosted PTC solution, establishing itself as a leader in the market and the industry.

### **HIGHER EFFICIENCY**

Managing a complex, hybrid IT environment can require multiple management tools, redundant policy implementations, and additional staff. As Herzog transitioned its IT infrastructure from traditional virtualization toward a hosted cloud model, Red Hat CloudForms provided unified management and operations for the hybrid environment, as well as a consistent user experience.

In addition, automating using the new Red Hat solution lets Herzog offer consistent implementations with minimal error and downtime. Previously, each virtual machine required manual setup for its configuration topology. Now, Red Hat Satellite has automated these configurations.

As a result of these improvements, Herzog significantly reduced deployment time for a railroad PTC system. Additionally, railroads using Herzog’s hosted solution benefit from more efficient performance, including increased reliability and streamlined systems management.

### **IMPROVED COSTS AND NEW REVENUE**

Building its new infrastructure on Red Hat’s open source solutions has helped Herzog create a scalable, secure, and robust platform at a lower cost than using proprietary solutions. In addition, the high level of automation achieved by implementing Red Hat CloudForms and Red Hat Satellite has helped the company reduce IT administration costs.

The new infrastructure has not only helped Herzog reduce costs but also created business opportunities. The new Red Hat solution has opened up a new revenue stream for Herzog: hosted software. In addition, Herzog can now capture important customer data to use for new service offerings, such as real-time monitoring and alerting, with the potential to offer metrics and data-based business insights to customers in the future.

## **HERZOG HELPS CREATE A SAFER FUTURE**

Almost half of the freight in the United States moves by rail, and PTC technology helps that freight move more safely. PTC technology is a move toward real-time access to information, the potential result of which is reduced locomotive failure, more efficient use of railcards and locomotives, and improved efficiency.

“Herzog has been in the rail industry since 1972,” said Brad Lager, President of Herzog Technologies. “We know that PTC is complicated, and we’re happy to partner with both freight and commuter clients to reduce the burden on our customers. Just as we have served the rail industry for nearly 35 years, we are in this for the long haul.”



CUSTOMER CASE STUDY Herzog Technologies keeps railroads on track with Red Hat

Herzog's innovative cloud solution, built with Red Hat technology and services, lets railroads of all sizes adopt PTC technology at a fraction of the cost of in-house PTC deployment, helping make rail transportation safer and more efficient.

### ABOUT HERZOG TECHNOLOGIES

Herzog Technologies is at the forefront of PTC technology and the rail signal and communications industry. Herzog has expertise in all areas of PTC technology, specializing in PTC track data survey, PTC track data management, and PTC integration. From turnkey systems to customized subset services, Herzog equips railroad customers to ensure safer, more productive railroad networks.

### ABOUT RED HAT



Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.



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