

# Assuring Railway Data Center Transformation Success With NETSCOUT

## Improves Agility By Migrating to Cisco ACI SDN and Virtual Platforms

### OVERVIEW

#### The Challenge

- Innovative railway company's Hybrid Data Center leveraging new Cisco ACI and VMware platforms, added Co-Lo facility
- Existing IT staff facing expanded performance challenges

#### The Solution

- nGeniusONE® Service Assurance platform
- NETSCOUT® Smart Visibility solution, with software-based InfiniStreamNG® & Packet Flow Switch appliances and vSTREAM™ virtual appliances
- nGenius® Visibility as a Service

#### The Results

- Successful data center operations transition to SDN platforms, Co-Lo validates railway investment
- Accelerated return on investment through NETSCOUT nGeniusONE SMEs, recommended practices guidance



#### Customer Profile

This railway company's heritage dates back more than 100 years, and today it is an early adopter of advance rail technologies, including:

- Autonomous track inspection to increase travel safety
- "Smart yard" equipment to intelligently manage complex yard operations
- Digital applications enabling truck drivers to streamline container drop-off and pick-up processes at terminals

With annual revenues approaching \$300 billion, the company's digital transformation activities have enabled it to increase operating efficiencies for customers and employees alike.

As part of earlier digital transformation initiatives targeted at streamlining service delivery, the company implemented Positive Train Control (PTC), Unified Train Controls System (UTCS), Train Yard Execution System (TYES) solutions, all of which are assured by the nGeniusONE Service Assurance solution. The company's information technology (IT) team also uses the nGeniusONE performance analytics platform and NETSCOUT visibility to monitor critical applications, such as IBM MQ middleware, Web-based utility apps, and Unified Communications (UC) solutions.

#### The Challenge

As part of the company's commitment to strategic innovation, leadership committed to transform data center operations, including plans for:

- Cisco® Application Centric Infrastructure (ACI) software-defined networking (SDN), which would provide IT with next-generation leaf-and-spine architecture, offering reduced configuration cycles and increased flexibility.

- Cisco Equal-Cost Multi-path Routing (ECMP), which offers substantial increases in bandwidth by load-balancing traffic over multiple paths.
- Introducing VMware ESX virtual servers to provide additional scalability.
- Upgrading to 100G network speeds.

Alongside this transformation, the company's data center operations were also transitioning to a hybrid data center environment that would include a new co-location (Co-Lo) facility.

While IT leadership was intent on realizing data center modernization efficiencies, they were aware these new architecture boundaries required additional visibility for effective network and application monitoring, as well as reporting and troubleshooting. In short, they needed the same NETSCOUT Smart Visibility sources and real-time analytics performance already established in their current-day data center environment. As a result, for the company's long-time IT team, there were more network traffic elements, business services, and new vendor technologies to monitor, which increased the need for real-time service assurance and performance management expertise. With their current staffing profile in mind, IT leadership was looking to augment its network and application monitoring resources to handle these new challenges.

### Solution in Action

The IT team is assuring the success of the railway's data center transformation by leveraging NETSCOUT's next-generation performance analytics, smart visibility, and advanced subject matter expertise. With this solution, the IT team is complementing its legacy nGeniusONE Service Assurance platform to include:

- NETSCOUT Certified InfiniStreamNG software appliances supporting 100G network speeds and providing needed smart visibility for the newly deployed Cisco SDN architecture and additional Co-Lo data center environment.

- Packet Flow Operating System (PFOS) Software for Certified Packet Flow Switch 7120, which supports high performance in the ACI SDN environment by monitoring both logical and physical connections. In addition, this NETSCOUT packet broker solution complements the Cisco spine-and-leaf design's scalability, reliability, and high performance by load balancing traffic flow in the data center, as well as dynamically managing packet forwarding at scale. The IT team is also taking advantage of NETSCOUT's Fabric Manager technology to pre-stage packet broker changes in advance of a maintenance window, without disrupting the current configuration.
- vSTREAM virtual appliance, which provides VMware ESX service assurance by monitoring server-to-server traffic in the new virtual server environment.

The company is also taking advantage of the subject matter expertise provided by NETSCOUT nGenius Visibility as a Service (nVaaS) resources to derive production-readiness more quickly from nGeniusONE in this transformed data center environment. The nVaaS team is dedicated to quickly customizing nGeniusONE service dashboards, service monitors, and troubleshooting workflows to provide refined real-time monitoring of the hybrid data center. In addition, the IT team can use nVaaS resources to establish service reliability and responsiveness baselines and migrate applications, compute, network, and storage workloads with confidence.

### The Results

For a company already conversant in the complexities of digital transformation in railway operations, they knew assuring success of this new hybrid data center environment would require the service assurance technology and unique resources offered by their long-time business partner, NETSCOUT. As a result, company management can remain focused on daily railway operations in an ever-changing transportation environment, while relying on NETSCOUT to assist their IT team's efforts in making this important data center transformation a success.

By involving NETSCOUT early in the planning process, company leadership factored innovative software-based nGenius smart visibility solutions uniquely suited to meet the performance challenges of Cisco ACI/ECMP and vSTREAM technologies and updated 100G network speeds. At the same time, this software-based approach met the company's cost containment guidelines, while enabling IT to instrument more visibility points across this hybrid data center than what would have been realized with traditional hardware appliance solutions. The company is improving early returns on investment by relying on nVaaS subject matter expertise to augment IT staff resources dedicated to nGeniusONE real-time monitoring and data center performance management activities.

With NETSCOUT, the company is able to maintain its business commitment to secure, innovative railway and freight transportation services, while reducing operating expenses linked to streamlined infrastructure overhead.

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### LEARN MORE

For more information about NETSCOUT Service Assurance Solutions for Transportation, please visit:

<https://www.netscout.com/solutions/service-assurance-transportation>

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