



CASE STUDY

# Modernising Infrastructure at Pace

National Express  
Transforms Legacy  
Infrastructure with Bytes



# Overview

National Express is the UK's largest coach operator, running high frequency scheduled services to hundreds of destinations across the UK and transporting millions of passengers every year.

- To do this it relies on internal and customer-facing digital platforms to support ticketing and operations, as well as business-to-consumer (B2C) and business-to-business (B2B) revenue channels. The reliability and availability of those platforms are therefore business critical.

**900+**  
Destinations

**Millions**  
of passengers

**700+**  
Servers

- In early 2025, National Express partnered with Bytes on an ambitious migration plan to **move it from an on-premises VMware environment to a cloud-based infrastructure on Amazon Web Services (AWS)**. Two key project goals were to increase agility and improve cost control. Although the company had an internal IT team, it needed the cloud expertise that Bytes offers to help plan and execute a successful and wide-ranging migration to AWS.
- National Express chose Bytes as its partner for this cloud transformation programme based on our **deep expertise** and proven track record in **delivering complex AWS initiatives**. As one of the fastest-growing AWS partners in the UK, with extensive capabilities spanning architecture design, strategic planning, migration, managed services and integrated security solutions, **Bytes stood out as the natural choice for National Express.**



# Challenge

While its legacy infrastructure supported daily operations, it had several issues:



Restrictive legacy contracts that were not cost effective



Lack of agility to support business change and speed to market



Risk to B2B and B2C revenue channels from poor system reliability



Lack of pathway for future IT modernisation

As National Express was running its virtualised VMware infrastructure on approximately 700 on-premises servers, the planning and design stage of the migration was critical and complex. The whole estate needed to be migrated with minimal disruption to operations or customers.

“

*Our ability to spin up compute is far, far quicker than it was previously. What Bytes and AWS have given us is the flexibility to respond to business change much more quickly than before. It gives us the foundations to do things differently in the future.”*

**PAUL CHALLIS, CIO, NATIONAL EXPRESS**



# The Bytes Solution

The migration of hundreds of servers requires a structured and well-governed programme. The project team applied a best-practice delivery structure, with clear joint ownership, defined roles and traditional project disciplines throughout.



- To reduce the risk of service disruption, the team employed AWS Migration Services. The use of AWS migration tooling helped to keep downtime cutover to a minimum, preserve database integrity and ensure workloads arrived on a secure AWS environment.
- The migration was planned in a series of more than 25 structured waves aligned to revenue channels and business domains. All changes were planned within a set of agreed maintenance windows.



# The Bytes Solution

Key deliverables from the project included:



**700+**

Servers successfully migrated to AWS



**25**

separate migration waves executed



**9 months**

Total migration time

The migration was successfully completed in nine months and within the expected tolerances of a programme of its scale and complexity.

More than 25 separate migration waves moved National Express's business divisions to AWS within standard, agreed maintenance windows, protecting business-critical platforms and channels throughout.

As part of the Managed Service, Bytes provides full backup and recovery management using enterprise-grade third-party tooling, ensuring data resilience and business continuity across critical systems.

01



Development of a **secure, scalable landing zone** on AWS with core shared services

02



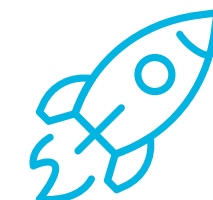
**Business - critical applications** successfully cut over with disruption within project tolerances

03



**Introduction of Bytes Managed Services** for operational support after migration

04



A cloud-based platform for **future modernisation initiatives**



# Managed Services and Ongoing Operations

Following the migration, National Express transitioned into a **fully managed AWS platform service** delivered by Bytes. This provides end-to-end ownership of both the cloud infrastructure and the workloads operating within it, and ensures the environment is secure, optimised and continuously supported.



- Bytes delivers comprehensive management across the full technology stack, including AWS native services, infrastructure components, application hosting environments and containerised platforms. This enables National Express to operate a **modern, scalable architecture** without the operational overhead of managing complex cloud environments internally.



# Managed Services and Ongoing Operations

Security is embedded throughout the platform via a fully managed implementation of SentinelOne. This includes:



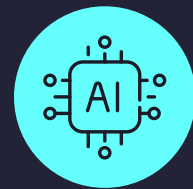
**Cloud-native security** posture management, providing continuous visibility of misconfigurations and vulnerabilities



**Runtime protection** for cloud workloads, covering both servers and containerised environments



**Identity protection** across Active Directory and Entra ID, strengthening access control and reducing identity-based risk



**AI-driven SIEM** capabilities, integrating telemetry from sources such as Palo Alto firewalls to deliver enhanced threat detection and response



**All security capabilities** are delivered as a managed service, with continuous monitoring, tuning and response handled by Bytes.



✓ **Improved Efficiency**   ✓ **Enhanced Security**   ✓ **Faster Innovation**

This integrated approach demonstrates how organisations can move beyond migration to fully realise the value of cloud. By combining AWS with a comprehensive managed-services layer, National Express benefits from **improved operational efficiency, enhanced security posture** and the ability to focus internal resources on **innovation** rather than infrastructure management.



# Benefits

The migration has given National Express improved agility, enabling National Express to provision compute and new environments far more quickly than before.



Spinning up new compute on AWS is around

**75%**

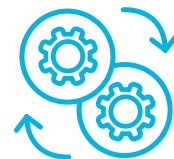
faster compared to its previous hosting environment.



Over a 24-month period, the company has saved

**£3m**

with reduced compute costs across comparable workloads.



National Express has also achieved approximately

**£500,000**

in annual savings by replacing a legacy application delivery platform with a cloud-based alternative on AWS.



*What made the project successful was partnership, trust, and transparency. Bytes operated as an extension of our team and brought deep AWS capability and joint leadership. Without this partnership, the migration would not have happened at the same pace."*

**PAUL CHALLIS, CIO, NATIONAL EXPRESS**



# Why choose Bytes?

Bytes Software Services is often chosen for AWS projects because of its recognised expertise, strategic partnership status and end-to-end cloud capabilities.

- As an **AWS Premier Tier Services Partner**, the highest tier within the AWS Partner Network, Bytes has demonstrated proven technical competency, successful customer outcomes and a strong commitment to AWS best practices.
- This recognition reflects its ability to design, migrate, modernise and manage complex AWS environments across a range of industries.
- Beyond certifications, Bytes provides comprehensive lifecycle support, from initial cloud strategy and architecture design through to migration, optimisation, security, governance and 24/7 managed services.

**700+ Servers Migrated**  
**25 Migration Waves**  
**£3m Saved**

**A successful partnership between  
National Express, AWS and Bytes.**

