Scaling a Mainframe Application in Azure

Case study   **VOLVO CARS**

RAIN CODE
mainframe to .NET

The Raincode COBOL compiler coupled with Service Fabric allow for the elastic deployment of mainframe applications on Azure without changing a single line of COBOL code.

Preserving the business value of existing systems.

Raincode's technologies come with a track record of cost-effective migration projects, delivering flexibility and agility to your legacy system.

- ✓ Single source
- ✓ EBCDIC mode
- ✓ Service Fabric on Azure
- ✓ Strong performance requirements
- ✓ **SQL converted from DB2 to SQL Server at compile time**

📞 **+32 2 522 06 63**
✉ **PoC@raincode.com**

www.raincode.com

The Problem

In 2018, the EU reinforced an existing legislation from 2009 for passenger cars, requiring that a precise CO2 emission report be included with any car configuration, whether made in-store or online.

This new legislation does not only dramatically increase the number of times emissions reports must be elaborated, it also implies that the software system that produces the reports remain available 24/7, with much shorter response time requirements, as customers are able to configure cars online at any time of the day or night.

The Solution

Volvo Cars' software component that computes these CO2 figures was developed in COBOL on an IBM Mainframe and has been steadily improved over the course of several decades. It is therefore a proven-in-use asset. However, pushing the additional workload induced by this new legislation to the existing version running on the mainframe would have been costly and would not have delivered the required performance or flexibility.

On the other hand, redeveloping it from scratch for a more modern platform would have been time consuming, expensive, and would have borne the additional risk of a drift between the two implementations while they evolve in parallel. Furthermore, any new code must still provide the same functionality as the legacy code in order to ensure business continuity.

Scalability and availability for IBM legacy on Azure.

To manage these conflicting goals, Volvo Cars' existing software was compiled as is using Raincode's COBOL compiler for Microsoft's .NET and deployed on Azure using Service Fabric to allow for greater elasticity.

This rehosted version of the software targets a SQLServer-based replica of the supply chain DB2 database, taking advantage of Raincode's unique capability of converting SQL statements from the DB2 dialect into the SQLServer dialect at compile time.

This configuration decouples the web-enabled CO2 emissions report engine from the mainframe-based, production-level database, ensuring performance and stability.

Volvo Cars serves millions of car configuration requests daily with a mainframe application ported to Azure.

Volvo Cars maintains a unique set of COBOL applications running both on an IBM mainframe and on Azure thanks to Raincode's compilers.

Raincode Headquarters
Rue de la Caserne 45,
1000 Brussels - BELGIUM

📞 +32 2 522 06 63
✉ PoC@raincode.com

Raincode USA
13245 Atlantic Boulevard
Suite 4-263 Jacksonville
FL-32225 USA

📞 +1 412 552 8207
✉ PoC@raincode.com

Raincode India
#1144, Guru Nilayam, 3rd
Floor, Sector 2, HSR Layout
Bangalore – 560 102 India

📞 +91 99450 47258
✉ PoC@raincode.com

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Mainframe to .NET and Azure