CUSTOMER CASE STUDY

POSTAL TECHNOLOGY COMPANY MODERNIZES APPLICATIONS USING CLOUD-NATIVE TECHNOLOGY WITH REDHAT & RANDOLI

Region
North America

Industry
Logistics, Postal Technology

Headquarters
Ottawa, Ontario, Canada

Company Size
64,000

Technologies

- Red Hat OpenShift Container Platform®

- Red Hat Integration®

2x Throughput with less CPU & memory compared to previous solution

Executive Summary

The postal technology company is the Information Technology provider for the parent company that operates the largest retail network and the biggest transportation fleet in Canada to provide Canadians with postal and parcel delivery services.

In order to handle the year over year growth in transaction volumes during the holiday season, the company entrusted Red Hat & Randoli to help modernize its payment gateway using Red Hat Integration® & Red Hat OpenShift Container Platform® as part of the organization's digital transformation mandate.

Challenges

The customer was looking to overcome the following challenges with the modernization engagement with Red Hat & Randoli.

- Move away from the outdated monolithic platform to Microservices

- Required better scalability to meet peak volumes during holiday season

- Very high licensing cost of the existing SOA Suite platform

Solution

Randoli provided thought leadership & software delivery services to transform the existing monolithic solution to Microservices based on Camel/Springboot (Red Hat Integration®) and Red Hat OpenShift Container Platform® taking an agile integration approach. See details below.

Benefits

- Increased developer efficiency & accelerated development due to Camel & Red Hat OpenShift® allowing quicker time to market.

- Cost savings on licensing & improved scalability with less resources.

- 2x throughput with less cpu & memory compared to existing solution.

- Ability to scale within seconds compared to weeks of lead time before.

- Red Hat OpenShift® allowed developers to focus on delivering business value.

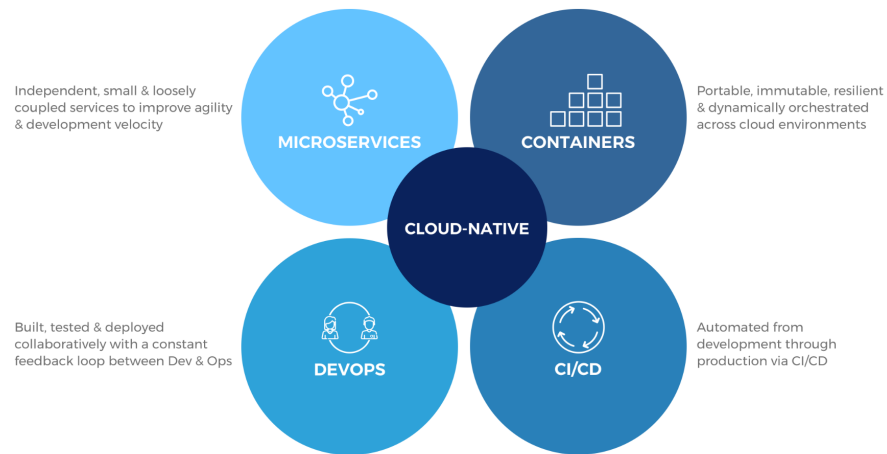- Automated tests allowed rapid delivery with a higher degree of confidence.

randoli

Approach: Agile Integration & Cloud-Native

A key objective for the new solution is to handle the year over year increase in transaction volumes that was experienced during Black Friday and Christmas holiday shopping. To improve scalability & agility to meet the increasing demand, it was decided to adopt an **agile integration** strategy, where decentralized & distributed integration, APIs and containers are the key pillars.

Another key objective was **cloud-native** where Microservices, Containers, Automation & DevOps are key pillars.

Independent, small & loosely coupled services to improve agility & development velocity

MICROSERVICES

Portable, immutable, resilient & dynamically orchestrated across cloud environments

CONTAINERS

CLOUD-NATIVE

Built, tested & deployed collaboratively with a constant feedback loop between Dev & Ops

DEVOPS

Automated from development through production via CI/CD

CI/CD

To meet those key objectives, we leveraged Camel/Springboot to implement the integration capabilities as Microservices with container-based infrastructure & automation provided via Red Hat OpenShift Container Platform®. We had to leave in place the existing SOAP based interfaces to support legacy applications. However a parallel REST interface was implemented for each Microservice to allow easy integration for new applications being developed or existing applications going through modernization.

There were many challenges with having to reverse engineer the existing system, unclear requirements, tight deadlines and gaps with operational procedures to being the first major application to go to production on the customer's Red Hat OpenShift platform®. The Randoli team in collaboration with Red Hat worked diligently with the customer to overcome the challenges and deploy the solution to production.

The randoli team got excellent support from the team that was championing the DevOps strategy at the customer. The teams worked together to improve the process and helped fix operational gaps. Additionally the Randoli team coached and mentored the customers development team to ensure they continue to follow the best practices as they take over the application to ensure long term success.

Technical Details

Complex Integrations with the payment provider and internal systems were implemented using Apache Camel, where Camel's rich library of prebuilt components for enterprise-integration-patterns, transports & data formats enabled developers to handle complex integration tasks with ease. This increased developer efficiency & accelerated development allowing quicker time to market.

Test-Driven-Development - was followed by leveraging Camels first class support for testing coupled with the Karate framework. This allowed the developers to handle requirements changes & defects with confidence & faster resolution times.

Business Rules With Drools The application had many business rules to determine risk, eligibility, payment types etc. There were two key objectives.

- To externalize & centralize the business rules in a self documenting way.

- Visibility on which business rules were executed

Randoli conducted a proof-of-concept to show the customer how Drools can be used to define business rules using a declarative approach (i.e What to do vs how to do) and how Drools can be used embedded within the Microservice. We provided an approach to enable the customer to view (via Elasticsearch & Kibana) which rules were fired for each interaction and how that decision was made.

Observability was a key requirement. The Randoli team worked together with the customer team to understand & implement key metrics and business requirements around *monitoring & logging* to ensure the operations & support teams are empowered to troubleshoot issues and gain insight into how customer transactions were executed.

Conceptual View - Microservice
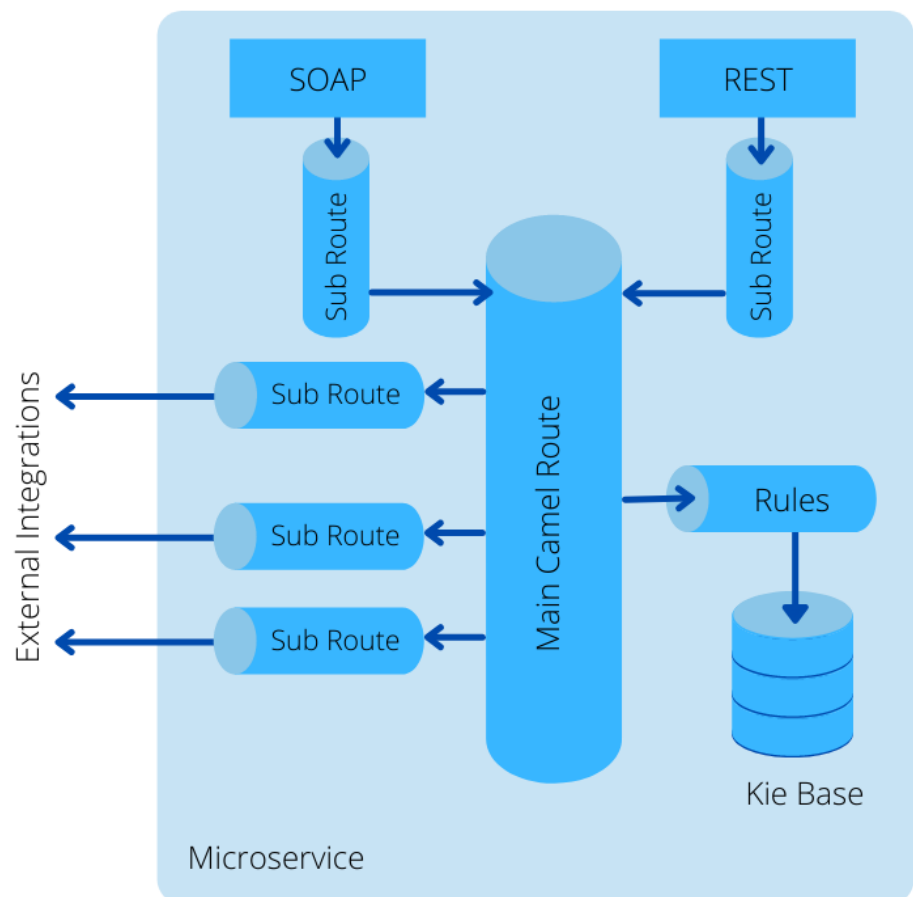
randoli

Results

Despite being the first critical path application for the customer to go live on their OpenShift application, we were able to work together to ensure the application was successfully deployed and operational with minimal disruptions to existing business operations. The following results were notable

- 2x Throughput with less cpu & memory compared to existing solution.

- Ability to scale easily to adjust to demand within seconds compared to weeks of lead time with the existing solution. This allowed the customer to handle orders-of-magnitude increase in volumes experienced during Black Friday and Christmas holidays seasons.

- Developer efficiencies due to use of Camel, OpenShift with best practices and guidance from the Randoli + Red Hat team.

- Camel's rich library of prebuilt components for enterprise-integration-patterns, transports & data formats increased developer efficiency & accelerated development allowing quicker time to market.

- Camels first class support for test driven development allowed the developers to handle requirement changes & defects with confidence & faster resolution time.

- The ability to externalize & centralize the business rules in a self documenting way.

- Increased visibility into which business rules were executed and how those decisions were made.

- Much improved operational metrics, dashboards and logging capabilities

Randoli & Red Hat Partnership - Migrate, Modernize & Integrate Your Applications

Randoli has worked together with Red Hat to help many large enterprises to migrate, modernize and integrate their applications using cloud-native technologies.

- Red Hat® Integration which includes,
    - Red Hat JBoss Fuse ®
    - Red Hat Runtimes ®
    - Red Hat 3Scale API Management ®
    - Red Hat AMQ & AMQ Streams ®
- Red Hat® OpenShift Container Platform

About Randoli

Randoli is a product and services company that enables accelerated and cost-efficient cloud migrations & app modernizations. Our product, Randoli App Director, helps define, manage & scale your apps on multiple Kubernetes clusters with ease.

Our service offering comprises end-to-end cloud migration & app modernization delivery and consulting. We collaborate with our customers to decide the best way to leverage Randoli's offering to realize any cloud migration & app modernization vision. Our team of open-source experts, flexible engagement models, and partnership approach is a testament to our success with global clients.

Randoli can help migrate & modernize your apps using the best in class open source cloud-native technologies backed by Red Hat.

Randoli AppDirector® helps accelerate app migration & modernization and provides a single-pane-of-glass to manage your apps across multiple kubernetes clusters.

Let us know more about your use case here.