Advanced MuleSoft Training: AstraZeneca

MuleSoft Case Study

Improving the MuleSoft practice

AstraZeneca

AstraZeneca, a corporate leader in the pharmaceutical industry had acquired MuleSoft licenses to help unleash new business values based off 18 years of data, research and development. The initial proof of concept was to design a geo-localization software platform that transforms the way employees travel globally. Knowledge gaps on enterprise integration practices and very limited experience with the MuleSoft Anypoint platform put the project at a cost risk with upper management on the lack of progress.

Challenge Overview

• Application architects and developers were working on an enterprise integration use case. Their expertise led them to create a point-to-point proof of concept but then realized it wouldn't scale fast enough nor efficiently.

• Because they had limited experience with Mule, the developers implemented flows with no integration mindset and even worst practices.

Abstract

AstraZeneca, a company leader in the pharmaceutical industry, had acquired MuleSoft licenses to help unleash new business values based off the data the company already has, product of 18 years of research and development. The initial proof of concept was a software of geolocalization employees could use when traveling to other sites in the world. However, a lack in of knowledge on enterprise integration practices, plus no training on the MuleSoft Anypoint platform, put the project in risk as upper management started to see this as a useless cost.

The Challenge

The development team quickly took the tasks to create a proof-of-concept using Mule to showcase its strengths. However, because they never went through formal training, they created a point-to-point solution that was faulty and hard to scale.

The team was a general-purpose software development team, they had no training on enterprise integration practices. They started a proof-of-concept of a single use case that was intended to assist their employees to locate and secure meeting rooms within the company's global premises.

As they began, they planned for a monolithic application that was supposed to serve thousands of requests every second. After six months of developing they realized that it was not fault tolerant and had no error recovery whatsoever. Processes were developed without keeping in mind the potential performance impact of integrating with several external systems, hence requests were slow, and they blocked resources. This was forcing them to vertically scale to an extreme just to fulfill SLA's.

Being in a highly regulated industry, they had to be compliant with many security and data protection policies around the world, which was absent in the solution architecture.

The Solution

The whole team (developers, testers and architects) went through an extensive training period with real life scenarios to gain knowledge on MuleSoft Anypoint platform. While in the training sessions, the use cases covered in the training were mapped to their requirements to ensure best practices in their solutions and laid down a roadmap for future integrations.

The team went through an extensive training period. This training was custom tailored to the company's needs to make sure the content was valuable for them. To understand the needs, several discovery sessions were conducted to figure out the pain points of the customer. In each discovery session, outcomes from the previous session were revisited to ensure the quality and value of the topics to be included in the course.

On the first day, the topics and scope of the training were introduced to the students and training expectations were set. From there, questions about the platform were parked and revisited during the training, clearing any doubts. Moreover, during the training week, questions ranging from general architecture to implementation and even security came up, which were handled by the trainers, helping the team create a better solution.

Topics such as Mule development, API-led connectivity, CI/CD, testing and architecture were the backbone of the training, ensuring that at the end, attendees had the knowledge needed to retake their tasks and create solutions based on best practices and industry standards.

Attendees were introduced to the concept of Microflows to create solutions that were scalable, reusable, independent, and fault tolerant. The implementation of Microflows follows the single responsibility principle, this means that each app will oversee one single transaction and it will execute the transaction via the unit of work pattern to guarantee accurate state control in case of a failure.

The inter-Microflows communication is carried out by passing permanent messages in permanent queues in a message broker to ensure that the messages and the queues definitions will be available regardless of a server downtime or a system restart.

Solution

- Full enablement on enterprise integration practices with our advanced MuleSoft training.

- The use cases covered in the training helped the customer's team to lay down an integration architecture following best practices and patterns they can replicate.

"We were working on this for 6 months and the outcome wasn't looking as planned, but the training helped us to complete the initial project in just 2 months. Plus, the upper management perception improved a lot."

Agueda Martinez,
Development Manager.

The setup of the queues and the cluster of the message broker makes this solution very resilient as the delivery and consumption are guaranteed. Fault tolerance and error recovery were clearly depicted in the training program. Any technical person attending our sessions could identify such mechanisms. This helped developers to see the controls they had to put in place for error handling. Deadletter channels and a repository for poisoned messages were used to handle situations where for any reason the process failed. Personnel from UK and Mexico attended to this advanced course.

The Results

3x times improvement on the product delivery with fault tolerance, resiliency, robustness and scalability features. The team's ability to deliver integrations thinking on enterprise robustness, scalability and reusability improved 3x times. The initial phase of the project was delivered in only two months after our training and consulting sessions. The newly learned expertise made them the go-to team for enterprise integrations within the company.

About Nova

Nova is a company specializing in Information Technology Consultancy and Training Services. We provide services in all North America, LATAM and Europe. Our headquarters are in the NYC metropolitan area and we also have offices in Guadalajara, Mexico and Madrid, Spain. All our team members have one thing in common: our enthusiasm for technology and our passion for customer service excellence. We are your nearshore and onshore software transformation experts.

Results

- Full overhaul of the solution architecture based on the knowledge obtained from the training.
- Product development time reduced in 3x times.
- Software developers had gone through enablement to better understand Anypoint and Mule.
- Team readiness to take on new integration requirements and quickly bring value to the organization.