

Montreal Informática transforms core business systems using Enterprise Generation Language.

Overview

■ **Challenge**

To seize a marketplace opportunity to help its clients modernize their legacy enterprise systems, Montreal Informática needed a cost-effective way to move away from Natural/ADABAS technology and to provide a flexible platform for core business applications moving forward.

■ **Solution**

Working with IBM, Montreal Informática conducted a proof of concept project using IBM Rational Business Developer, IBM Rational Migration Extension for Natural and IBM DB2 information management software together with EGL technology to modernize a legacy Natural/ADABAS application.

■ **Key Benefits**

Montreal Informática has seen increased developer productivity. Developers from a range of backgrounds learned EGL rapidly, enabling Montreal Informática to use the same developers for building batch and online systems. The successful pilot project has opened new business opportunities because the company now has the ability to automate much of the transformation process, while offering clients a choice of deployment platforms.

Headquartered in Rio de Janeiro, Montreal Informática LTDA is among the largest IT service providers in Brazil. Offering services and solutions in information management, information technology, electronic data processing, outsourcing, imaging, biometric applications and computing, Montreal Informática has six regional branches in Brazil and approximately 1,800 employees.

Recognizing a business opportunity to accelerate enterprise modernization efforts for its clients, Montreal Informática recently undertook a proof-of-concept project to modernize and transform a business-critical Natural/ADABAS application using IBM Rational® Business Developer software featuring Enterprise Generation Language (EGL) technology. Many of the company's clients are running core business application systems built on Natural and

ADABAS. Montreal Informática began the pilot project to demonstrate a way to leverage and reuse these systems, while moving them to a more flexible, open foundation. "In Brazil, we have many clients that are looking to move away from Natural/ADABAS while retaining the high-availability and security of their mainframe systems," explains Mauricio Alvarenga, IT manager at Montreal Informática. "Some already have IBM DB2® software installed and they want to move everything to DB2 to reduce complexity and maintenance costs. Others are finding it difficult to hire Natural programmers, as many Natural programmers in Brazil have moved on to other languages or retired. So we started this project to show our clients the possibilities of transforming their legacy systems to a more modern development environment with flexible deployment and UI platforms."

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Key Components

Software

- IBM DB2 for z/OS V8
- IBM Enterprise Generation Language
- IBM Rational Business Developer v7.1
- IBM Rational Migration Extension for Natural v7.1
- IBM WebSphere Application Server

Hardware

- IBM System z
- IBM System z Application Assist Processor (zAAP)

Leveraging an existing infrastructure

“Many CIOs I talk to don’t believe that Java on a mainframe can work,” Alvarenga continues. “But, I can show them a system we developed almost four years ago that handles millions of online purchases per month.” For that system, a smartcard-based e-ticketing solution for a transport authority, Montreal Informática selected an IBM zSeries® 890 server, with IBM DB2 for z/OS® V8 and IBM WebSphere® Application Server for z/OS software. The system employs an IBM System z® Application Assist Processor (zAAP) engine, which provides a powerful z/OS Java™ execution environment offload for the System z platform. “We will leverage this same infrastructure for testing, so that we can benchmark performance of the original Natural system and compare it with the transformed project,” says Alvarenga.

Choosing a project and getting started with EGL

For their initial transformation effort, the Montreal Informática team selected a Natural/ADABAS system that connects schools and clinics with a government agency, enabling different groups to enter and access data in several different usage scenarios. “We chose this system because we had written it ourselves and we run it on our machines in-house, which allows us to run many tests from different user perspectives and generate consistent benchmarks. Also, because the system is modular we can transform one part at a time. This gives us a lot of control over the process,” says Alvarenga.

“We chose these developers because they had different backgrounds. One was a Delphi programmer, one knew COBOL, and the other two were Java developers. After a week of on-site EGL training provided by IBM, they knew the basics of EGL. The Java developers in particular were very comfortable with the IBM Rational Business Developer interface because it is Eclipse-based.”

—Mauricio Alvarenga, IT manager,
Montreal Informática

Montreal Informática assigned a team of four developers to the transformation project, none of whom had prior experience with EGL. “We chose these developers because they had different backgrounds. One was a Delphi programmer, one knew COBOL, and the other two were Java developers,” says Alvarenga. “After a week of on-site EGL training provided by IBM, they knew the basics of EGL. The Java developers in particular were very comfortable with the IBM Rational Business Developer interface because it is Eclipse-based.”

Transforming Natural/ADABAS to EGL

The transformation of the Natural code and ADABAS files is an iterative process consisting of three main phases that results in an EGL project with fully converted EGL source code and DB2 schema (Oracle is also supported). IBM Rational Migration Extension for Natural software, a plug-in for the Rational Business Developer environment, allows the Natural applications that have been transformed into EGL to execute properly on multiple platforms.

In the first phase of the process, discovery and analysis, the Natural code is analyzed and inventoried. This service, provided off-site by IBM and IBM Business Partners, enables customers to streamline the transformation process, eliminate unnecessary or unused code and scope the rest of the project, breaking it down into more manageable parts if needed. “IBM provided us with a very nice overview of close to 200,000 lines of code; it showed what code was being used, what code was not being used, and identified potential errors,” says Alvarenga. “After reviewing this information, we selected the modules that we wanted to include in the conversion.”

In the next phase, the selected modules are converted to EGL. More than 90 percent of this transformation, which is also provided by IBM, is automated. Working with an IBM consultant, the Montreal Informática team used Rational Business Developer to complete code remediation on sections of code that were identified as needing further review. The team used the EGL debugger to step through the code and verify system functionality for multiple use cases. As a second validation step, the team then generated Java code and tested the resulting application on a Microsoft® Windows® system, accessing an IBM DB2 dataserver. “Working with someone who knows the technology very well, it was easy for us to realize the productivity benefits of EGL,” says Alvarenga. “He worked with us for about 20 days, and after that the team was confident they could do the next modules themselves. In just 30 days, they had become very productive, very quickly.”

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– Mauricio Alvarenga, IT manager,
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In the final phase, Montreal Informática will generate the appropriate run-time artifacts, complete its testing, and then benchmark the deployed applications on the System z platform. "I'm confident that the COBOL code will perform very well, and the zAAP engine will provide exceptional performance for our Java customers as well," says Alvarenga.

A First in 30 years of IT

"Currently we have one set of developers for web applications, and another for batch systems. With EGL, the same developers can do both, and we can offer our clients a choice of deployment platforms," says Alvarenga. "Many of our customers are already interested in this technology and as we build up a customer base for EGL applications, we will begin to migrate more developers from Natural to EGL."

"At the beginning of this project I was a bit skeptical. I have almost 30 years of IT experience. In that time, I've never seen a software conversion that went well and I've tried many of them," Alvarenga continues. "After the first discovery and analysis delivery, I was surprised because it was really very good. I see that with the right skills, developers are very productive. I am very enthusiastic about the results and about the future of enterprise modernization at Montreal Informática."

For more information

To learn more about EGL, contact your IBM Business Partner or IBM representative, or visit:

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