Translator

U.S. Army Europe saves more than $150,000 by automating database translation

Customer: U.S. Army Europe
Website: www.eur.army.mil
Customer Size: 29,000 soldiers
Country or Region: Germany
Industry: Military/public sector

Customer Profile
U.S. Army Europe trains and leads Army forces in 51 countries to support U.S. European Command and Headquarters, Department of the Army.

Benefits
- Enhanced force protection
- Saved $150,500 in manual translation costs
- Improved usability of data

Software and Services
- Microsoft Server Product Portfolio
  - Microsoft SQL Server 2012
- Microsoft Dynamics CRM
- Microsoft Visual Studio
  - Microsoft Visual C#
- Technologies
  - Microsoft Translator API
  - Transact SQL

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> "By using the Microsoft Translator API to automate SQL Server data translation into English, we are able to present senior leaders with universally usable data that supports better informed decisions."
>
> Mark Hutcheson
> IT Specialist, U.S. Army Europe

Before migrating to Microsoft Dynamics CRM, U.S. Army Europe needed to translate portions of a SQL Server database used for screening and hiring local nationals. Using the Microsoft Translator API, Microsoft Visual C#, and the common language runtime (CLR) environment, engineers automated the translation of select SQL Server data into English. As a result, the Army saved about $150,500 (about 1,750 hours) in manual translation costs, avoided a seven-month delay, and maintained access to all of its historical employment screening data.

Business Needs
U.S. Army Europe trains, equips, deploys, and provides command and control of troops to enhance transatlantic security. To support that mission, it employs many local nationals for civilian jobs such as landscaping, food services, and maintenance. They apply for those jobs in their local language through an online employment application.

In the past, the application included fields for applicants to enter a more lengthy description of the job they were applying for along with their background and qualifications. Most of the applicants came from surrounding European countries so that information was typically submitted in a language other than English.

All of the application data was stored in a SQL Server database to be used for screening and hiring employees and validating their access to the base once hired. "This system provides a Europe-wide local national screening system, which is critical to supporting force protection," says Mark Hutcheson, a civilian IT specialist for U.S. Army Europe.

By 2014 the database had hundreds of thousands of applications dating back 30 years. At about that time, U.S. Army Europe launched a project to migrate from a

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homegrown screening and human resources system to Microsoft Dynamics CRM. The goal was to streamline the application process, provide more efficient analysis and reporting tools, and make more readily actionable data available to force leaders.

Before the migration, the non-English information in the SQL Server database needed to be translated to make it usable for reporting and research. The challenge was how to translate that data.

"Manually translating those thousands of records into English would be very labor intensive and costly," says Hutcheson. "Leaving the data in the native languages would limit the usability of the database and would create security challenges."

Fortunately, there was a third option offered by Sam Lester, a Microsoft Premier Field Engineer who supports SQL Server applications for U.S. Army Europe.

Solution

As planning for the Army's Microsoft Dynamics CRM migration progressed, Lester focused on preparing the SQL Server database. He had started working with U.S. Army Europe in 2013 and was very familiar with Microsoft Translator—a cloud-based automatic translation service.

Microsoft Translator technology powers translation features in many Microsoft products, and provides a free (up to 2 million characters a month) public application programming interface (API) that developers can use to incorporate automatic translation into their applications, websites, and tools.

"Anyone who wants to incorporate language translation into their solution can

easily plug into the Microsoft Translator API," says Lester. "SQL Server has a CLR environment that allows you to wrap .NET code within SQL Server stored procedures. Using Visual C# and SQL Server CLR, we created a bridge between the Translator API and SQL Server to translate database records natively with Transact SQL (TSQL)."

After discussing the idea with his Army colleagues and members of the Microsoft Translator team, Lester developed a proof of concept (POC) for the automated SQL Server translation tool. To maintain security, he designated text from just two columns of the database—including job titles, background, and experience, but no personally identifiable information—to be translated.

The POC was approved quickly and Lester spent **less than 20 hours completing the code.** He then released the translation tool to a test group of Army staffers stationed in Europe who simulated job applications entering non-English text. Several hundred rows of sample data were successfully translated into English resulting in enthusiastic approval from U.S. Army Europe.

The final version of the tool automatically translated the several thousand records in the historical database into English in just a few minutes. Once the translation was done, the team was able to automate database normalization to more efficiently organize the data and eliminate redundancies in preparation for migrating to Microsoft Dynamics CRM.

Benefits

By using the Microsoft Translator API to create a SQL Server translation tool, U.S. Army Europe was able to expand the usability of its local national screening database, expedite translation, and save more than $150,000 in translation costs.

- **Enhanced force protection.** The ability to accurately translate unstructured data into English enhances analysis and reporting capabilities and the usability of data going back 30 years. **The historical**

perspective is important for identifying applicants who apply multiple times and may have been denied in the past. "When the data was in disparate languages, it created a layer of confusion," says Hutcheson. "By using the Microsoft Translator API to automate SQL Server data translation into English, we are able to present senior leaders with universally usable data that supports better informed decisions."

- **Saved $150,500 in manual translation costs.** The U.S. Army Europe SQL Server team estimated that manually translating the unstructured data stored in the database into English would have taken approximately 1,750 hours or 220 work days (about 7.3 months). That would have cost about $150,500 in salary and benefits. In addition, manual translation would have delayed the migration to Microsoft Dynamics CRM by more than seven months.

  The automated translation process was fast and no additional cost was incurred. The Microsoft Translator API was free because the volume of data translated was less than 2 million characters. In addition, the Army already owned licenses for the products involved, and Lester's time was included in the annual Microsoft Premier Services contract.

- **Improved usability of data.** By translating all data prior to database normalization, *all* historical data was normalized, not just the data that was originally submitted in English. By automating the normalization process, the CRM migration team saved **roughly 900 hours of manual effort.** "When we began, we had thousands of job titles in several languages," says Lester. "After the automated translation process and normalization, we were able to condense the list down to a few dozen."