

# Systems & Software

Micro Focus® Database Connectors\* provides a simple, secure, and seamless move to RDBMS architecture.

## Overview

Systems & Software is a top-rated software provider to the North America utilities industry. Its Web-based enQuesta software helps utilities fulfil their customer commitment and drive operational excellence.

## Challenge

Micro Focus COBOL has been in use for decades at Systems & Software and is the basis of enQuesta. This core COBOL system integrates very effectively with a Java Web services front-end.

COBOL data files are the traditional data storage mechanism integrated into the COBOL language. While fast and efficient, COBOL data files do have drawbacks, as David Atwood, Software Developer at Systems & Software, explains: "Recovering from a system failure can

**"Following the Database Connectors implementation, we've found our applications are more resilient and reliable."**

### DAVID ATWOOD

Software Developer  
Systems & Software

be very time consuming, as the data needs to be checked and repaired. Our solutions are absolutely mission-critical for our customers; some of them are even integrated into the power grid, so any downtime is unacceptable. Data analysis and reporting can also be difficult with COBOL data files. It's hard to access the data directly and it often requires extra engineering. We felt we could serve our customers better if we moved to a modern relational database management system (RDBMS), such as Oracle."

But although an RDBMS solution was highly desirable, manually modifying COBOL application source code to use SQL syntax, necessary for RDBMS integration, is a time consuming and complex process, as Atwood explains: "Our COBOL applications are large and complex and manually updating the code was a daunting prospect. We anticipated needing at least 2 years before we could get a new RDBMS solution to market"

## Solution

Initially a solution was found with a niche vendor in France. However, when the key vendor contact for Systems & Software was due to

\*Available as Acu4GL for ACUCOBOL customers



## At a Glance

### ■ Industry

Software & Technology

### ■ Location

USA

### ■ Challenge

Offer higher quality and cost-effective customer service by moving from traditional COBOL data files to modern relational database management systems (RDBMS). Manually updating COBOL applications to accommodate this move is costly and time-consuming.

### ■ Solution

Use Micro Focus Database Connectors to quickly achieve the benefits of a modern RDBMS architecture without a major application rewrite.

### ■ Results

- + Business continuity guaranteed through more reliable and resilient architecture
- + Support for the latest RDBMS platforms including Oracle and SQL Server
- + Enhanced data reporting capabilities for customers
- + Reduced business risk as a result of minimal application change
- + Better diagnostics support and application maintenance tools for development teams

**“RDBMS support is essential when we are bidding for new business. Database Connectors gave us the easiest route to achieve RDBMS integration without having to spend years and years rewriting everything.”**

**TYLER CARR**

Principal Software Engineer  
Systems & Software

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retire, Systems & Software decided to look elsewhere: “It was then that Micro Focus introduced Database Connectors which seemed the perfect solution for us. We use Server Express for our COBOL development, so it was a natural extension and would give us the option to offer integration with different relational databases, depending on customer preferences.”

Database Connectors automatically translates the existing file IO syntax used by the COBOL source code, into SQL instructions operating against a relational database. Systems & Software uses COBOL copybook files to define data elements which can be referenced by many programs. A simple update to the copybooks was all the code change required to make their COBOL application RDBMS compatible. Some additional code changes were needed to accommodate RDBMS record lock handling differences compared to ISAM file record lock handling.

The automatic runtime translation of COBOL data file syntax to RDBMS instructions means Systems & Software developers can continue to code using the COBOL data file semantics they are familiar with, and yet leverage the benefits of a modern RDBMS architecture without major application re-engineering, as Tyler Carr, Principal Software Engineer at Systems & Software, comments: “Unfortunately, COBOL data files are often susceptible to corruption following a system failure. Restoring these files can take several hours and often needed direct involvement from our engineers. Following the Database Connectors implementation, we’ve found our applications are more resilient and

reliable and if there is a system crash, we can use Oracle’s Point-In-Time recovery support to get the application restarted faster than we could ever do using data files. The debugging and diagnostics tools available with an RDBMS also make our job of diagnosing incidents much simpler now that there is a single source of data to analyze”

### Results

The easier reporting capabilities are paying dividends at Systems & Software, as Atwood explains: “Doing month-end reporting for our customers using data files could run for many hours, putting pressure on the available batch window. Following our move to Database Connectors alongside various application optimizations, we enhanced our data access and reporting process and subsequently reduced our batch window. Our move to RDBMS was totally transparent to our customers but they have definitely enjoyed the benefits. We use IBM Cognos for reporting now that the data is accessible using standard tools; our customers can take advantage of other reporting tools, such as the Open Source tool JasperReports, to easily do their own custom reporting.”

A recent customer project prompted a move to Micro Focus Visual COBOL which will ultimately give customers the choice of Oracle or SQL Server.

Carr concludes: “RDBMS support is essential when we are bidding for new business. Database Connectors gave us the easiest route to achieve RDBMS integration without having to spend years and years rewriting everything.”



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