

Superior Court of California, Stanislaus County System



Court Saves Over \$700,000 Annually by Migrating its Legacy System to a Modern Computing Environment

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The Superior Court Stanislaus County System sought a way to update its legacy Case Management system. Nine months into efforts to implement a Java-based solution, they halted the project because of scalability problems and soaring development costs. The Court adopted a strategy that included the use of Microsoft® Visual Studio® .NET and the Microsoft .NET Framework to migrate its legacy system off the mainframe and into a modern environment. The new system runs on Microsoft Windows® 2000 Advanced Server and offers a lower cost of ownership, greater extensibility and improved performance. Working with Fujitsu Software Corporation's NetCOBOL for .NET (language add-in software for the .NET Framework), the new application required just two and a half months to build, test and implement.

Situation

The Superior Court Stanislaus County System, located in Modesto, California, outgrew its aging Case Management system. The system was more than ten years old and still served some of the basic functions required of the Court system; however, due to the increased number of cases and caseworkers, the performance of this legacy system deteriorated to unacceptable levels and had become costly and burdensome to maintain.

The Superior Court Stanislaus County System determined that it needed to explore its options for updating the Case Management system to meet current and future demands. An independent consulting group was brought in to determine what improvements could be made to the existing

Fast Facts	
Number of developers to build application	7
Number of months to build application	2
Number of users	300
Number of concurrent users	20
Average query time improvement	From 60 seconds to 10 seconds
Amount of money saved annually	\$720,000

system and if cost savings could be realized. The resulting report recommended that the Court migrate to a modern, distributed environment. The existing system was an IBM Customer Information Control System (CICS)—essentially an IBM mainframe running CICS

software. The Court's Case Management system consisted of 785 separate COBOL programs.

Solution Overview

Customer Profile

The Superior Court Stanislaus County System, located in Modesto, California, has 350 caseworkers who manage the Court's civil and criminal cases.

Business Situation

The Court had outgrown its legacy Case Management system. Performance of the mainframe application had become unacceptably poor and the system was expensive to manage.

Solution

The Court has now successfully ported its IBM mainframe system to a modern, distributed environment. The new system was developed with Visual Studio .NET and the .NET Framework, along with Fujitsu Software Corporation's NetCOBOL for .NET language add-in.

Benefits

- Rapid development cycle
- Reduced costs
- No need to retrain system users
- Improved Performance
- Better manageability

Software and Services

- Microsoft® Windows® 2000 Advanced Server
- Microsoft® .NET Framework
 - ASP.NET
- Microsoft® Visual Studio® .NET
 - Visual C#® .NET

Fujitsu Software

NetCOBOL for .NET

Hardware

Dell PowerEdge 2550 (2 web servers and 2 database servers). Dual Xeon processors on the database servers

Partners



To best leverage its investments in technology and people, and to improve the performance and scalability of the system, the Court decided to port the legacy system off of the mainframe to a new environment.

Solution

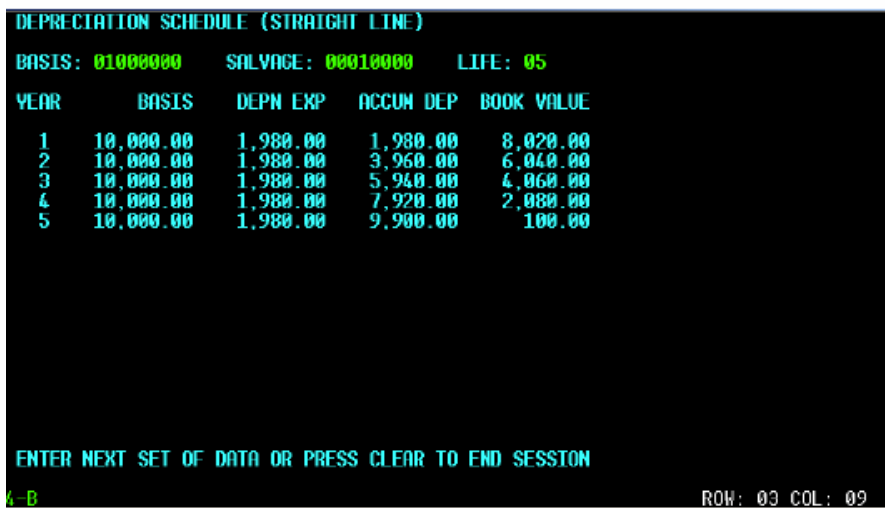
The Superior Court Stanislaus County System has now successfully ported the Case Management system off of the mainframe and has introduced its new, distributed, transaction-based application for managing court cases. Built on the Microsoft® .NET Framework, the new case management system runs on Microsoft® Windows® 2000 Advanced Server. To develop the new system, the Court used Microsoft® Visual Studio® .NET along with Fujitsu Software Corporation's NetCOBOL™ for .NET–language add-in software designed specifically for the .NET Framework.

The Superior Court Stanislaus County System originally decided to port its Case Management system off of the mainframe using Java, beginning the process in January 2002. In May 2002, with many of the programs converted, user testing began. Response times were significantly better than the old system, but developers noticed scalability problems as they increased the number of programs that were converted to the new system. Thinking they had worked around the problem, the court conducted a load test in September 2002, with a realistic number of users tapping into the system at once.

“That’s when we hit a brick wall,” says Raul Menendez, a consultant on the project. “We came up with a way to work around one problem only to run into more problems. The system just wasn’t going to scale that well. These problems primarily involved the Java compiler that we were using and the calls made to the Oracle database. In addition, we began to look at the work we’d done so far and it was clear that the system was becoming complex and messy. It was starting to seem as though the new system would be a nightmare to manage.”

While trying to solve one of these problems, the developers used Visual Studio .NET and were especially impressed by the ease with which they were able to convert Java code to Microsoft Visual J#™. The Court began to rethink its strategy and researched other options, especially options that leveraged Microsoft .NET technologies. The Court learned of Fujitsu's NetCOBOL for .NET and decided that it would convert the CICS Case Management system to a Windows-based system.

Turning “Green Screens” Into ASP.NET Pages



DEPRECIATION SCHEDULE (STRAIGHT LINE)

BASIS: 01000000 SALVAGE: 00010000 LIFE: 05

YEAR	BASIS	DEPN EXP	ACCUM DEP	BOOK VALUE
1	10,000.00	1,980.00	1,980.00	8,020.00
2	10,000.00	1,980.00	3,960.00	6,040.00
3	10,000.00	1,980.00	5,940.00	4,060.00
4	10,000.00	1,980.00	7,920.00	2,080.00
5	10,000.00	1,980.00	9,900.00	100.00

ENTER NEXT SET OF DATA OR PRESS CLEAR TO END SESSTON

4-B ROW: 03 COL: 09

Figure 1. A typical CICS screen before conversion to ASP.NET.

“The conversion process is so easy, once it’s complete you can sit back and look at the application and start finding ways to improve it. Microsoft and Fujitsu not only help you port your legacy application off of the mainframe, but they also help you enhance those legacy applications as well.”

Andrew Mackenzie
Strategic Alliance Manager
Fujitsu Software Corporation

To migrate its Case Management system, the Superior Court Stanislaus County System used Fujitsu NetCOBOL for .NET—a solution that combines the reliability of Fujitsu's family of COBOL compilers with the Visual Studio .NET development system. It includes an enhanced COBOL compiler with language extensions and a completely new code generator targeting the Microsoft Intermediate Language (MSIL).

The Visual Studio .NET development system and Fujitsu software made porting the Court's CICS applications to Windows a quick and painless process. The IBM Mainframe BMS screens were converted using IBM's BMS to HTML template facility. The new HTML pages included all of the fields that were on the original screens; however, field attribute behavior was not carried over into the new environment. These pages were then converted to ASP.NET screens. The function keys that caseworkers were accustomed to using with the legacy application are now represented by soft keys across the bottom of the page and by using DHTML, they are able to use the function keys on their keyboard exactly the same way they did on the legacy system.

The next step involved indentifying all of the CICS API calls used by the applications. The CICS calls were manually converted to emulate all of the necessary functions. At this point, the application was ported to the new environment and the most challenging development work was done.

“By porting the application to NetCOBOL for .NET we improved the performance and maintained the transactional integrity of the original application. Our costs are now a fraction of what they were before.”

Debbie Brasher
IT Manager
Superior Court Stanislaus County System

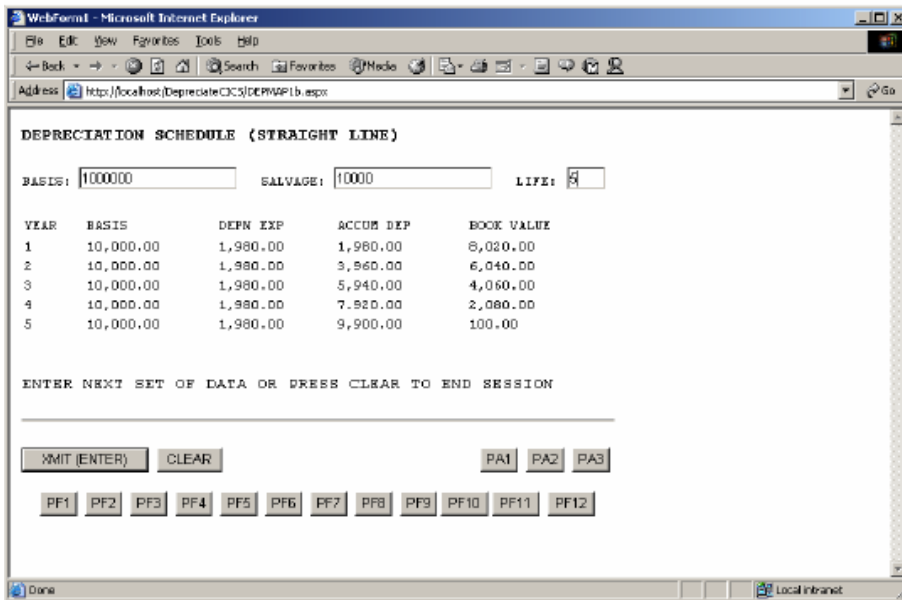


Figure 2. The screen from Figure 1 has been converted to ASP.NET.

Benefits

The decision to turn its aging legacy system into a modern, web-based application resulted in several advantages for the Superior Court Stanislaus County System. The application which previously ran on the mainframe now runs on two dual-processor Web servers (for redundancy). This migration has reduced system maintenance costs while improving performance and reliability. With a system that runs on Windows Advanced Server 2000, the Court also has the

ability to easily and affordably scale up to meet the kind of increasing demand that led to the need to replace the legacy system.

Having already invested a significant amount of time and money pursuing a Java-based solution that stalled before completion, the Court was able to quickly complete the project with Visual Studio .NET and Fujitsu's language add-in software. The project was completed and the new system was up and running as a live system within two and a half months. "I'm sorry NetCOBOL for .NET hadn't been released when we started the project," says Debbie Brasher, IT Manager, Superior Court Stanislaus County System.

"The new system is far cheaper to maintain and manage than the old mainframe system," adds Menendez. "No costly training was required since the new application so closely mirrors the legacy application. For system users, response times are greatly improved and the valuable features of the old system are still available."

A Quick and Painless Migration

Once the decision was made, developers were able to port the legacy system off of the mainframe in just two and a half months. Actually, the majority of the conversion process was handled by just one developer – a process that had taken several developers five months using the Java compiler.

The new system was deployed side-by-side with the old system mid-December, 2002. For two weeks, parallel testing was performed, with users entering data into both the old system and the new system. Testing proved that system performance had vastly improved. Query times were improved 5 to 10 fold, depending on system traffic. The new system was scaling well and handling load requirements. On January 1, 2003 the Court shut off the mainframe and has been running the new system since.

Reduced Cost of Ownership

The introduction of the web-based Case Management system has resulted in a fractional cost of ownership because of the elimination of mainframe management costs. Based on the fact that the maintenance load that required ten programmers now only requires one junior and one senior programmer, the Court estimates that the time required to manage the system has been reduced from 400 hours per week to 80 hours per week.

The Court relied on Stanislaus Country's IT department to manage the system. The Court estimates that the average chargeback was \$60,000 a month. This only covered basic mainframe access; it did not include any system enhancements such as updated reports or changes to bail structures. This kind of additional work was billed at \$90 per hour. The Court's own IT staff now has two developers who maintain the system and can perform any enhancements and improvements needed, so the chargeback has been eliminated.

"By porting the application to NetCOBOL for .NET we improved the performance and maintained the transactional integrity of the original application," says Debbie Brasher, IT Manager, Superior Court Stanislaus County System. "Our costs are now a fraction of what they were before. One of the most gratifying aspects of going to NetCOBOL for .NET was the minimal training required by both the programming staff and the end users."

A Legacy System in a Modern Environment

The need to migrate a legacy system to a modern, distributed environment is not unique to the Superior Court Stanislaus County System. NetCOBOL for .NET was designed specifically to leverage the .NET Framework to help developers accomplish this important task.

“A lot of organizations want to find a way to update their legacy applications while avoiding a wholesale change to an entirely new system,” says Andrew Mackenzie, Strategic Alliance Manager, Fujitsu Software Corporation. “NetCOBOL for .NET makes the migration of COBOL applications easy, and with Microsoft .NET a lot of new opportunities are available. Modern technologies, such as XML Web services, are easily incorporated with Visual Studio .NET. Companies can easily incorporate other Microsoft .NET technologies and extend their legacy applications in so many ways.”

Since the Superior Court Stanislaus County System project was completed, Fujitsu has further simplified the process of porting CICS legacy applications to a modern environment with the introduction of NetKicks™—a new migration solution that allows companies to move their existing COBOL CICS applications to the Microsoft .NET Framework using Fujitsu’s NetCOBOL for .NET.

“This is a great way to bring legacy systems into the world of modern computer applications,” continues Mackenzie. “It’s safe, it’s flexible, it’s affordable and it buys you time. The conversion process is so easy, once it’s complete you can sit back and look at the application and start finding ways to improve it. Microsoft and Fujitsu not only help you port your legacy application off of the mainframe, but they also help you enhance those legacy applications as well.”

The Microsoft .NET Framework is an integral Windows® component for building and running the next generation services. It provides a highly productive, standards-based, enterprise-ready, multi-language environment that enables developers to take advantage of their existing skill set, facilitates integration with existing software, and operating Internet-scale applications. The Framework consists of two main parts: the common language runtime that includes a revolutionary advance to Active Server Pages (ASP.NET), an environment for building smart and loosely coupled data access subsystem (ADO.NET).

For more information about the Framework, go to:
<http://msdn.microsoft.com/netframework/>

Microsoft Visual Studio .NET is the rapid application development (RAD) tool for building next-generation Web applications and XML Web services. Visual Studio .NET empowers developers to rapidly design broad-reach Web applications for any device and any platform. In addition, Visual Studio .NET is fully integrated with the Microsoft .NET Framework, providing support for multiple programming languages and automatically handling many common programming tasks, freeing developers to rapidly create Web applications using their language of choice. Visual Studio .NET includes a single integrated development environment with RAD features for building Web applications and middle-tier business logic, and RAD XML designers for working with data.

For more information about Visual Studio .NET, go to:
<http://www.visualstudio.net/>

To acquire Visual Studio .NET, please see your reseller or go to:
<http://shop.microsoft.com/devtools/default.asp>

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