ENERGY

CHARLOTTE WATER

SUN HELPS CITY OF CHARLOTTE SERVE GROWING COMMUNITY

Highlights

Company
City of Charlotte

Industry
Municipal Utility (Water, Sewer, and Stormwater)

Applications/Solutions
- SCT Banner customer information system
- Oracle 7.3.4 database
- Qualix HA+ high-availability management system
- Veritas Volume Manager and NetBackup

Products/Services
- Two Sun Enterprise™ 5500 four-way servers in high availability (HA) configuration
- Ultra Enterprise™ 2 Server (development platform)
- Solaris™ 2.6 operating environment

Key Business Challenges:
- Replace 30-year old homegrown system with off-the-shelf, Y2K-compliant package

Key Business Results
- Flexible billing system and powerful Sun platforms provide scalable solution for one of the country's fast-growing public water systems
- System performed flawlessly after going live, serving nearly 100 active users

"The system with Sun gives us the assurance that we can grow the system to meet our needs."

Richard Martin
Finance Director
City of Charlotte, North Carolina

Thanks to the region's 10% annual population growth rate, Charlotte, North Carolina is currently one of the country's fastest growing metropolitan areas. Over the past decade, the City has worked closely with the Mecklenburg County government to consolidate duplicate and overlapping services.

The result is that the City's water, sewer, and stormwater department now provides service to much of the county, and in so doing, has become by far the largest municipal agency transaction system. With customer growth and Y2K issues on the horizon, the City decided in 1996 that the time had come to replace its aging customer information system.

After a lengthy RFP process, the City chose SCT's Banner customer information system, a client/server solution. The city relied on Piedmont Technology Group, one of Sun's first resellers (going back to 1986), for systems consulting, project management and integration services. Based on Piedmont's recommendations, input from the City's IT department, and a good track record with Sun products, the City chose a high-availability cluster of two, four-way Sun Enterprise 5500 servers, becoming one of SCT's first customers to operate the Banner solution on Sun.

A Growing Customer Pipeline

The City of Charlotte's water and sewer operations have more than doubled in size to a quarter million accounts over the past dozen years, according to city finance director Richard Martin. To handle the growth, the city is in the midst of a long-term $1 billion capital program. As part of ongoing modernization efforts, the City had to reexamine its 27-year old, homegrown, COBOL-based billing system to see if it would meet 21st century requirements.

The legacy system had several problems. Due to its age, there was little if any documentation, and because it was written so long ago, there were few if any people left in the IT group that intimately knew the system. A legacy of its age was that the system was limited in scope, with many functions still performed manually. With Y2K problems and the metro area's population growth, the city decided that it was time for replacement.

The initial step was hiring James Martin & Co., a well-known consulting firm which helped pioneer the practices of managing relational databases, to help the city identify the solution. After briefly considering the idea of adapting billing systems from other municipalities, the city decided that a new, client/server off-the-

shelf package would be the best choice. After a painstaking RFP process, the city chose SCT's Banner customer information system.

According to Richard Martin, the City's choice was part of a strategic plan to migrate to current technologies. "Our IT organization transitioned from mainframe to client/server technology because we felt that this would be the best way to handle our growth going forward," he said.

That set the stage for the next milestone: selecting the platform. Because of the system's highly anticipated growth, the City required a scalable platform. Additionally, because the City also wanted a system that could deliver fast, dependable subsecond response times, it was also looking for reliability and high-performance.

During this stage, the City worked closely with Piedmont Technology Group, a technology consulting and systems integration firm, based in Charlotte. Piedmont, which first got its legs developing technical computing solutions, has expanded with Sun into delivering secure enterprise solutions, and is currently an Oracle partner for its financial applications and databases.

Piedmont and the City of Charlotte have enjoyed a long working relationship, dating back over a decade to the installation of CADCAM workstations for the City's geographic information systems, with other systems installed in high-impact areas such as the police department. "Because of our 10-plus years serving the City of Charlotte, we have built up a very trusting relationship. The City understood that Piedmont not only had expertise in Sun, but that we believed in Sun's technology," said David Poarch, Piedmont's Enterprise Systems Group manager.

After detailed analysis, the city decided to choose Sun as the server for the new customer information system. "Over the years, the City had built up a very positive track record with Piedmont Technology Group and Sun's platform technology," noted Bob Alexander, Piedmont's business consultant for the project. With the Sun decision, SCT subsequently made Banner available for the Sun Solaris operating environment.

Implementation

"We carefully looked for the right mix of operational and technical people to put on this project," said Martin. The result was a cross-functional project team composed of business specialists from the user community. The City's Renee Weaver directed the project. Piedmont's Doug Groce assisted with the technical project management. "With Piedmont's expertise and the reliable Sun platform, I was able to direct my attention to the business issues. I believe that this was a significant factor in leading to the overall success of the project," said Weaver.

The technical challenges were based on the system's sheer size, and the need to integrate it with 11 existing internal systems. It started with a conference room prototype running on a Sun Ultra Enterprise 2 Server. While the project was underway, the city upgraded its LANs to 100-Mbit Fast Ethernet to take advantage of the powerful Sun servers, and it began installing the high-availability dual Sun Enterprise 5500 Server cluster. When it came time for scale-up, Piedmont uncoupled one of the high-availability Sun Enterprise 5500 servers to test system performance. "That was a critical part of the project because it gave them the confidence that the performance was there," explained Ray Locklear, Piedmont senior systems engineer. Once the tests were completed, Piedmont quickly restored the cluster configuration.

Building for the Future

The system has compiled a flawless service record since going live in October 1999. During its first couple months of operation, the system has not gone down. Today, Sun-based SCT Banner system is serving 100 users overall, with about 70 - 80% of them active users. Martin credits the track record to a combination of vigorous preparation and a strong IT infrastructure. "We had a very intensive training process to certify users," he said, adding, "They have adjusted to the new system very well, even though it's a completely different environment for them."

Martin is also very confident that system has plenty of headroom for growth. "When we looked at the system to begin with, we wanted to make sure that there would be enough flexibility in the design to accommodate future billings," he said, noting that one of the ideas being considered is having consolidated master billing which could efficiently handle the addition of new services without having to build a new customer billing infrastructure from scratch. Said Martin, "The system with Sun gives us the assurance that we can grow the system to meet our expanding needs."

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