

MidAmerican Energy archives customer and business data to improve application service levels and support continued business expansion

Overview

Challenges

- *Improve the management of application data acquired through mergers and acquisitions. Maintain consistent high levels of customer service and support. Defer the cost of hardware upgrades, while serving an increasing customer base.*

Why IBM?

- *IBM@ Optim™ includes database archiving capabilities that scale across applications, databases, operating systems and hardware platforms.*

Solution

- *IBM@ Optim™ Data Growth Solution*

Benefits

- *Strengthened support for business expansion by automating archived capabilities to manage data growth. Achieved stability and reliability in the production environment and improved service levels. Achieved disk savings by archiving production data to realize equal reductions in replicated test environments, as well as image copy and work file spaces.*



Focus on business growth and customer service

MidAmerican Energy Company, the largest utility in Iowa, is strategically located among several major markets in the Midwest. The company serves more than 706,000 electric customers and more than 687,000 natural gas customers, and is committed to providing superior customer service. The company has come a long way from its origin as Iowa Public Service, a small, publicly held utility serving 250,000 customers in northwest Iowa. The years 1985 to 1995 focused on business growth, and the utility company went through several mergers and acquisitions. With

each transition, there was continued pride in providing superior customer service and maintaining strong customer relationships.

Initially, key business operations relied on an in-house customer billing system that tracked meter readings, invoicing, accounts receivables and other details on each service location. Managing customer billing information, while ensuring performance service levels, were high priorities. To address these challenges, the application group developed an in-house archiving program to remove historical billing information and store it outside the production environment.

“Fast response time and easy access to customer billing information were important to our service agents for transaction processing and responding to customer inquiries,” said Dennis Blackwell, Supervisor of Database Administration at MidAmerican Energy. “Our archiving program allowed us to remove historical records, ensuring that we could complete batch billing cycles on time. We just assumed that operations would be sustainable, even if our customer base expanded.”

Acquisition drives need for new billing system

In 1995, Midwest Resources merged with Iowa-Illinois Gas and Electric (IIGE) to form MidAmerican Energy Company. “Neither our original billing system nor the IIGE system alone could support our business needs going forward,” said Blackwell. “That’s when we selected CustomerOne™ from Accenture.”

The original billing system was “premise-centric” and relied on an IBM IMS™ database. In contrast, CustomerOne was “customer-centric” and relied on an IBM DB2® relational database. A single customer record could correlate to multiple premises and accounts. “From the outset, we knew that CustomerOne did not include an archiving capability, but it allowed us to focus on our customers and their movements for service and billing purposes,” said Blackwell.

In 1996, the IT group started converting the current and historical data from the two billing systems into CustomerOne, which took about two years. “The conversion process was followed by the trials and tribulations of becoming familiar with CustomerOne in operation. We monitored growth and noticed increases in CPU time, and DB2 required more disk space than the IMS environment,” noted Blackwell. “We started to feel the pains of the transition and data growth. We also experienced performance challenges. With longer batch windows, we were losing our ability to meet service level agreements (SLAs).”

Difficulties meeting service levels

New monthly, quarterly and annual business processes were being introduced, and timely completion was critical. Nightly batch processing for billing, meter readings, collections and cash flows that could not be completed by 12:30 a.m., or date-flip processing that was not completed by 3 a.m., would impact customer service agents, who needed access each morning.

“It became increasingly difficult to provide the appropriate service levels,” said Blackwell. “Our agents are conscientious about giving friendly, efficient service and had won several J.D. Power and Associates awards for customer satisfaction. They wanted to keep those customer satisfaction numbers up and didn’t feel we could

with the existing system performance. Keeping historical data in the production environment indefinitely would only weaken our ability to accommodate new business growth. We had to implement an archiving solution for CustomerOne.”

Search for archiving capabilities

“The challenges and risks associated with developing the archiving capabilities we needed were too great,” noted Blackwell. “We wanted to archive referentially intact data, store it securely, retain access and be able to restore archived data, even if the data model changes.”

In 1999, when Warren Buffet acquired MidAmerican Energy, continued business expansion was expected. Once they determined that archiving was the only way to accomplish their goals, budgeting for an archiving solution was a necessary first step. “Optim was the only solution that provided archiving capabilities for DB2 data,” said Blackwell. “We talked to representatives from Accenture and learned of a ‘synergy group’ composed of several utility companies across the country that were all using CustomerOne and might also be interested in archiving.”

Accenture proposed a solution, but its focus was on data removal and not archiving. Because capabilities for accessing and retrieving historical data

were critical, simply removing data was not the best solution. Accenture's team acknowledged the challenges in developing capabilities to archive referentially intact sets of CustomerOne records, as well as providing storage options and capabilities for restoring data from a DB2 production environment.

The utility companies met to evaluate proposals for archiving and discuss what could be accomplished. Ultimately, Blackwell suggested the IBM Optim Data Growth Solution because it provided comprehensive archive and restore capabilities that met their requirements and allowed each company to customize archive procedures. Many of the utility companies concurred. Accenture agreed to help develop the initial templates for archiving CustomerOne data.

Business users determine archive policies

Over the next 9 to 12 months, business users across departments were closely involved in determining what historical data could be archived and when. "To ease their worries, we had to demonstrate that Optim could restore archived data in its entirety, or any subset of the data, as needed to service specific accounts," said Blackwell. "We also proved that data removed from the production environment was still accessible. In the end, the business users appreciated seamless access to both current and historical data."

Implementation proves flawless

"The implementation went flawlessly," commented Blackwell. "About 95 percent of the archive definitions were inline with our business needs, and customizations were easily completed for the rest. We were able to implement in just a few weeks."

"With Optim, we run eight or nine different archive processes to manage data across multiple business areas. We can archive historical customer contract data every 3 months and archive financial data semi-annually. Typically, about 90 percent of the transaction volume is managed in just 10 percent of the database. We target the largest tables for archiving to ensure that the size and growth does not slow transaction, batch, utility or maintenance processing," said Blackwell.

Ongoing enterprise data management

"After implementing Optim and processing a few large archives, it is good practice to monitor continued data growth and to quantify the results by taking measurements monthly," Blackwell recommends. "It is important to know the rate of data growth, whether positive or negative, and to understand the cause, as well as the net effect. This information can be shared with the business users to improve operations, reduce costs and justify the reallocation of IT resources to support service levels."

"Since implementing Optim, we have saved disk space and have balanced our CPU utilization. CustomerOne grows at a rate of approx 3,300 cylinders or one 3,390 disk device per month. Leaving that growth unchecked for years adds up quickly in disk space," said Blackwell. "With Optim, we are able to maintain and monitor data growth at a manageable threshold. In addition, our batch processing times have stabilized well within our SLAs, and our backup and recovery times are 20 percent faster."

Multiplying the savings

"Archiving and removing historical information from the production environment reclaims capacity, which delivers exponential savings across the organization," said Blackwell. "Considering the number of copies of production data replicated throughout your organization, when you reduce the amount of production data, the capacity savings are realized in every cloned environment, data mart, backup file and utility/sort space, as well."

MidAmerican Energy requires copies of production data to support application development, quality assurance and regression testing. Prior to implementing Optim, procedures to extract realistic customer data from production for testing purposes took days. With Optim's subsetting capabilities, developers can create

manageable testing environments using referentially intact subsets of data, and the test environments can be populated and refreshed in a matter of minutes, which saves time.

“In particular, regression testing requires regimented processing,” said Blackwell. “Using Optim’s test data management capabilities, we can run a full billing cycle across a full partition of data and do a table-to-table comparison to reveal expected and unexpected changes and resolve issues. Improving our testing processes has allowed us to reduce the number of problems often introduced into our production applications.”

Closing comments

“Business users will always be reluctant to remove historical data from a production environment. If you have a proven solution, like Optim, you can demonstrate that archiving keeps data accessible, which eases their anxiety,” Blackwell noted. “Optim worked the way they said it would. We were able to demonstrate the capabilities to our business users and had support from senior management.”

“Since implementing archiving, we have removed over 500 million records of historical data from the CustomerOne

database. We will probably reach one billion archived records quickly,” Blackwell commented. “If a new merger or acquisition increases our customer base, we can manage the data volume by archiving and retaining even less historical data online in the production transaction processing system.”

About IBM Optim

IBM® Optim™ enterprise data management solutions focus on critical business issues, such as data growth management, data privacy compliance, test data management, e-discovery, application upgrades, migrations and retirements. Optim aligns application data management with business objectives to help optimize performance, mitigate risk and control costs, while delivering capabilities that scale across enterprise applications, databases and platforms. Today, Optim helps companies across industries worldwide capitalize on the business value of their enterprise applications and databases, with the power to manage enterprise application data through every stage of its lifecycle.

For more information

To learn more about IBM Optim enterprise data management solutions, contact your IBM sales representative or visit: www.optimsolution.com.



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