Success Story

DB Optimizer™ XE3

appwave™ Embarcadero®
AppWave™

ORGANIZATION

Pitney Bowes

APPLICATION

- Cross-platform database development
- Database performance tuning
- Software distribution

TOOLS

- DB Optimizer™ XE3
- Embarcadero® AppWave™

CHALLENGES

- Finding the source of performance bottlenecks was a time-consuming manual process, and rarely led to effective problem resolution.
- Multiple database platforms required numerous tools with different user interfaces to manage and learn.
- Distributing software licenses and version upgrades to developers and DBAs on different teams across the organization inhibited productivity.
- Company acquisitions led to duplication of software licensing, resulting in development silos and wasted money.
- Limited insight into who was using the various tools increased the risk of over purchasing licenses.

RESULTS

- Simplified database management and administration with a single, cross-platform tool suite.
- Enabled rapid performance troubleshooting and resolution with visual tuning and monitoring features.
- Proactively identified and fixed issues that were affecting processing performance.
- Enabled efficient verification and fine-tuning of routine processes; for example, reduced time spent on data extraction processes from several days to 12 hours.
- Eliminated time spent managing licenses with centralized license management and gained visibility into software usage to reduce overspending on licenses.
- Enabled rapid software distribution and on-demand access to software across multiple teams and team members to boost productivity.

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– Tim Woods, Advisory Data Engineer at Pitney Bowes Software

Pitney Bowes is a $5.3 billion company with over 28,000 employees, serving both large corporations and small-to-medium-sized businesses in more than 100 countries. The company delivers a unique combination of analytical tools and expertise in physical, digital and hybrid communications that improve communications across multiple channels. Pitney Bowes provides the world's most comprehensive suite of mail stream software, hardware, services and solutions to help companies manage their flow of mail, documents and packages to improve communication. The company's 87 years of technological leadership have produced many major mail stream innovations, and it is consistently on the Intellectual Property Owners Association's list of top U.S. patent holders.

In April, 2007, Pitney Bowes acquired MapInfo (now a part of Pitney Bowes Software [PBS]), a provider of location intelligence solutions tools and services used by more than 7,000 organizations worldwide in virtually every industry. The acquisition was part of a companywide initiative to move into the software industry and enabled Pitney Bowes to deliver a broader range of advanced solutions for retail, communications, insurance, financial services and the public sector while strengthening its customer communication management offering.

Following the acquisition, PBS implemented Embarcadero's suite of database management tools, DB PowerStudio™ XE3, to simplify cross-platform database development and administration, and fine-

tune the performance of those processes. Today the company accesses the software via Embarcadero AppWave, which according to Tim Woods, Advisory Data Engineer at PBS, has helped to simplify the distribution of DB PowerStudio and other applications and information across distributed teams.

CHALLENGE

With 75 employees under five managers, the Data Development group at PBS runs lean, and tools and processes that contribute to efficiency are highly valued. Following the acquisition by Pitney Bowes, it was important to Woods to ensure existing customer needs would continue to be met. However, with a complex SQL Server environment spread across multiple servers and databases, it was becoming difficult to maintain optimal performance.

PBS has several key content products, all with different data sets and multiple databases on a complex mix of servers. For the Street Pro product, which allows customers to display street-level maps for any location with 52 layers of data, Woods' team has to digest a million files on a quarterly basis, and those files live on five different servers, each with three separate databases. Another product, MapMarker, is equally data-intensive, and also provides data analysis capabilities. Just for the North American versions of these products, PBS DBAs have to back-up about a half a terabyte of data per quarter.

"I would be asked why a component of the database was performing poorly, and it would take weeks to identify and fix the problem, given the amount of data I had to

go through," said Woods. The process involved running and outlining profile traces on the various servers to identify bottlenecks.

"Reviewing the code that was executed was difficult, because I lacked effective software, and I had to do a lot of digging into the code and manually monitor Windows event logs to locate problems," said Woods. "I'd spend about a week just digging through the code, and I would rarely be able to pinpoint the problem."

Woods received an invitation for an online seminar about Embarcadero's DB PowerStudio suite in October 2011, during which he was impressed by DB Optimizer, an application within DB PowerStudio. DB Optimizer's capabilities to monitor and capture offending code over time, and then drill down into bad code appealed to Woods.

"I could see how DB Optimizer would save me a lot of time," said Woods. Tim notes how the tool filters out the "white noise" in the profiling session when compared to SQL Server Management Studio's (SSMS) native profiling tool. DB Optimizer surfaces the most important and relevant information while "the outputs from the SSMS's SQL profiler showed everything, which was too much information."

Furthermore, DB Optimizer XE was cross-platform, which meant that Woods could use it when working in both Oracle and SQL Server environments around the world. "I needed a tool that was more global in nature, and this one fit the bill," he said.

SOLUTION

DB PowerStudio XE3 is a suite of highly-intuitive applications that helps simplify cross-platform database administration, development and performance tuning. Designed for database teams that work in mixed DBMS environments, DB PowerStudio XE3 complements native tools with critical capabilities such as database change management and SQL optimization and tuning.

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>
> – *Tim Woods, Advisory Data Engineer at Pitney Bowes Software*

Complete with support for all popular DBMSs (Oracle, SQL Server, Sybase and DB2), all of the components in DB PowerStudio, as well as the subset of features, are available under a single license, via a single interface, and can be deployed on-demand. Components of DB PowerStudio include DBArtisan, Rapid SQL, DB Change Manager and DB Optimizer.

Woods's team completed a proof of concept where DB PowerStudio's DB Optimizer was used to monitor databases and perform queries about performance issues.

"There's a feature in DB Optimizer that takes a query and gives you different options for solving the performance issues," said Woods. "Some of the answers are simple—do a table scan and add an index. In many cases, multiple joins aren't necessary to accomplish a task, and that saves me a lot of time."

During one extraction in which data was being pulled to build .TAB files, one of the DBAs noticed the process was running slowly. DB Optimizer provided a few different indices which Woods applied to the database. "The developer called me within 10 minutes and asked me to keep doing whatever I did, because it was working," he said.

Although Woods said DB Optimizer doesn't provide the "silver bullet" to solving all your database management issues, it does help to quickly pinpoint problems and avoid reading through hundreds of lines of code, all while presenting new options for solving the problem. The GUI, said Woods, is also intuitive and easy-to-read.

AppWave Makes Deployment Fast and Easy

Woods's team is using Embarcadero AppWave™ to deploy the DB PowerStudio suite. A purpose-built enterprise app store for PC software, AppWave reduces the complexity of Windows applications by enabling users to search, browse and run Windows software titles instantly. Administrators have complete visibility into actual software usage and can make fast, more accurate fact-based decisions on what software to maintain and support.

For Embarcadero products like DB PowerStudio XE3, AppWave comes included, with users able to access it with one-click. No installation is needed as software streams right to a user's desktop. AppWave provides fast access to applications by integrating with a company's active directory (LDAP) so user and group access can be automated. It also enables users to rate and review applications, including providing best practice information to peers.

"AppWave provides more than just a means for deployment," said Woods. "It also manages the licenses we're using and provides a detailed report on usage for each software product within the suite." Conveniently, AppWave can be used for both standard and custom apps deployed within an organization.

According to Woods, using AppWave in this way facilitates the sharing of product lines among DBA and engineering teams, and AppWave's license management and reporting capabilities enhance cross-geography and cross-functional collaboration. Teams can use AppWave

to post data or software and track usage across the company for enhancements or product retirement purposes.

Woods plans to enhance information sharing with AppWave socialization features to include links to share videos and training resources. "AppWave seems the ideal replacement to the file shares that we have been using to exchange software and data as Pitney Bowes grows to accommodate additional software and data integration projects," he said.

RESULTS

Since implementing DB Optimizer via AppWave, Woods has seen huge improvements in database management and administration. "On average, I save 20% to 30% of my time using DB Optimizer over SSMS Profiler," said Woods.

In one example, DB Optimizer helped reduce the time it took to run one critical process from four to five days each, to less than half a day.

"We were bringing in a link server connection across database servers to update a table that had 45 million records," said Woods. "When the table was being extracted, it would run a query back against other servers and update on the fly. But when you're running this 3,500 times it starts to deplete server resources, and it takes days."

After looking at the process with DB Optimizer, Woods determined a more efficient way to complete the update. The values being updated included a small integer and a bit (either 1 or 0). Woods realized that it would be easier to create new fields in a table and run an update from one server to the other—in other words, bring the data over to the new server rather than linking the servers.

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AppWave has also offered Woods and his team numerous benefits. "With AppWave, I can post a software title once and provide access to all the various teams," he said. "File shares are unnecessary and there's no delay to access."

Woods said that two different teams within Pitney Bowes are using AppWave with single licenses for DBArtisan, and all of the training, videos and communications are available to both teams. "AppWave is a great way to reduce development silos within a large organization like Pitney Bowes," he said.

Furthermore, PBS engineers now have fewer dependencies on desktop machines in the event of a crash or failure. "Since AppWave runs in a virtual environment, our engineers can log on using a different PC and simply re-start the app in the AppWave browser," he said. According to Woods, this improves business continuity and productivity.

"Machines don't last forever," he said. "With AppWave, your most critical applications are always available when you need them."

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