CUSTOMER PROFILE
BBM Canada (www.bbm.ca) is a not-for-profit broadcast research company responsible for collecting viewing and listening data from thousands of Canadian households and translating it into meaningful audience ratings surveys used by broadcasters and media buyers. BBM’s analyses enable its customers to set advertising rates and offer compensation to advertisers if audience ratings are lower than initially forecasted.

THE CHALLENGE
Delivering accurate data under tight time frames
“Our entire reputation rests on having very solid data with no errors, data that our customers can depend upon,” explains Tom Saint, CIO of BBM Canada.

BBM’s customers must receive their nightly ratings surveys by 3 p.m. the next day. BBM crunches the nightly data from nearly 6,000 households—approximately 15,000 viewers—and provides reports to 100-plus radio and television markets. Each survey participant wears an electronic meter, called a portable people meter (PPM), which silently records encoded broadcast signals from the stations to which the individual tunes. BBM receives the data by modem at its primary data center in Toronto, Ontario, where the data is entered into the PPM database.

During sweeps periods, at which time broadcasters run their most popular programming to improve ratings, BBM collects paper diaries from 300,000 participants, who record their viewing and listening habits for one week. Data collected during sweeps periods must be accurately analyzed and reported seven times a year. BBM scans the diaries and creates digital images that are stored in a 1.7TB sweeps database.

Prior to using NetApp storage and data protection solutions, BBM maintained this data in Oracle Databases residing on six development/testing servers with direct-attached storage in the Toronto data center and a second data center in Richmond, British Columbia. All development and testing had been done on dedicated hardware. When BBM created its disaster recovery (DR) plan, the company set up its Richmond data center as an alternate processing environment. It replicated the PPM and diary processing databases to that location, where processes could be run if there was a failure in the primary data center. BBM saw an opportunity to run development and testing in the DR location because that hardware was infrequently used. To do so required creating a backup copy of the production database against which programmers could run tests. The process took 60 to 90 minutes, providing there were no

KEY HIGHLIGHTS
Industry
Media

The challenge
Accelerate delivery of accurate ratings surveys.

The solution
NetApp® FlexClone® and FAS3020 storage enable rapid cloning of Oracle® production databases and VMware® virtual server images for a cost-effective dev/test environment.

Benefits
• Reduced time to provide dev/test instances from four days to 15 minutes
• Saved $100,000 annually in Oracle licensing fees
• Avoided $185,000 in storage and DBA costs
• Reduced backlog of customer requests 50%
“Using NetApp FlexClone on VMware, we’ve reduced our time to develop test instances from four days to 15 to 30 minutes.”

Ed Grassie
Director of IT Infrastructure, BBM Canada

operating system or application changes, just database updates.

More testing translates into better data and more accurate ratings surveys for customers. The time required to copy the entire database, along with the storage constraints, prevented BBM from making more than one copy of its production database for testing. BBM parcelled out portions of the database, against which programmers tested their changes to the PPM application. This limited the scope of the testing.

**THE SOLUTION**

BBM initially chose NetApp solutions to improve storage utilization and create a bulletproof DR capability with reciprocal data centers. At the Toronto data center, BBM used NFS to connect the Oracle Database servers to a NetApp FAS3020 storage system that contained the production data. BBM replicated its Oracle data and production systems from Toronto to its Richmond data center using NetApp SnapMirror®. In the event of a disaster, it could bring up critical services, such as a survey database, within a day.

**Free the data to improve testing**

BBM discovered it could leverage its DR investment and NetApp FlexClone to enhance dev/test processes. It now uses NetApp Snapshot™ software to create a writable, point-in-time copy of the production database and uses FlexClone to create multiple data instances that can be used on other servers. BBM maps other Oracle Database servers to those FlexClone data sets.

“Within seconds, NetApp FlexClone gives us an exact production copy of the database for development and test, and we can make as many as we need, whereas before, it took us as long as 90 minutes to make a single database copy,” says Ed Grassie, director of IT Infrastructure at BBM. “We now test changes we’ve made to the programming or to a database and compare them to that day’s live results to see what effect they have had.”

BBM evolved its use of FlexClone by using VMware and virtualized servers for its Oracle DR and dev/test environments. “We needed more server capacity for our databases but wanted to avoid the costs associated with buying more databases licenses and servers,” explains Grassie.

Snapshot copies of VMware images and data for the Oracle Databases are stored on a NetApp FAS3020 storage system. By making a FlexClone copy of the VMware server and pointing it to a FlexClone copy of the Oracle production data, BBM can create complete virtual environments of its Oracle Database servers. Five of these virtualized environments typically run at a time, allowing programmers to run tests concurrently, with the goal of improving survey results. It takes a database administrator (DBA) minutes to clone the VMware images and data and link the two.

“Using NetApp FlexClone on VMware, we’ve reduced our time to create test instances from four days to 15 to 30 minutes,” exclaims Grassie.

**BUSINESS BENEFITS**

**More testing produces higher quality data at lower cost**

The ease of creating virtual clones allows programmers to run tests without impacting production. “Conducting tests with a complete, current clone of the production data improves test quality by reducing errors,” observes Grassie. “FlexClone allows us to implement more thoroughly tested changes to each development project, thereby minimizing risk for us and for our customers and improving the quality of our surveys.”

The cost savings come in many areas. With virtualized test environments, for its PPM system alone, BBM saves $100,000 annually in Oracle Database licensing fees. With fewer physical databases, BBM avoids hiring a DBA to manage those systems, saving approximately $85,000 annually.
Better problem solving and customer service

When BBM conducts its major sweeps surveys, customers are anxious to get the data quickly. Cloning the data allows BBM to catch and fix errors before they reach the critical delivery period. To address the information needs of its customers, BBM’s programmers manually input new control data into each survey, which leads to frequent changes to the applications. With the volume of changes made, errors can occur and have a snowball effect that can delay survey delivery to BBM’s customers. In the past, BBM had to freeze production while trying to pinpoint and resolve the source of an error, a process that could push out the delivery date by days. Now, using a FlexClone copy, BBM can debug problems against a database copy without affecting new survey data being loaded to the production database.

BBM troubleshoots errors sooner because it can check multiple point-in-time database clones to find when and where errors occurred. “We’re catching problems two weeks earlier and have the time to properly investigate and fix them, rather than rushing through a patch,” says Saint. “We have greater confidence that when the delivery date comes, we’ll be able to do the final processing quickly and not encounter last-minute problems. We’ve been able to shave at least two days off our promised survey delivery dates, from nine days down to seven, which has improved the value of our services for our customers.”

BBM has boosted external and internal customer satisfaction by reducing its quarterly backlog of new customer-requested features by 50%. BBM often exited a quarter with a backlog of requests equal to the number of new features just implemented. “NetApp FlexClone has given us the ability to respond more quickly to customers’ requests,” says Saint. “It enables us to get more work done because we can run multiple tests concurrently and implement many of the feature requests within the quarter.”

Improved efficiency for programmers and DBAs

Programmers test multiple types of changes, such as new survey methods, broadcast station reallocations, and other operational changes. FlexClone enables them to accelerate their output because the wait time for a test environment has been dramatically cut. DBAs can provide programmers with either a cloned database, a cloned virtual server image, or both within 15 minutes; previously, it took up to four days to refresh a development environment. DBAs no longer have to copy code changes programmers make during development to make the data production-ready, a step that took a day and a half. Instead, they “promote” a virtual environment into production.

Decreasing the storage footprint

Instead of making a full physical copy of the 1.7TB production database for sweeps surveys, BBM makes a virtual copy using FlexClone that uses about 200GB of storage space. For each copy of the data set used in dev/test, BBM uses up to 90% less storage than previously. By using FlexClone to make virtual copies of VMware images, BBM avoids making full physical copies of each virtual machine environment, saving a significant amount of storage and reducing overall storage costs related to supporting the production and dev/test environments by up to 40%. This amounted to a savings of $100,000, not including the additional time and cost to deploy and maintain those environments.

BBM has reduced data center operational costs by consolidating its DR, dev/test, and production environments from 170 servers with 26TB of direct-attached storage to 14 IBM BladeCenter servers and two NetApp FAS3020 systems running VMware. Though the total amount of physical storage is nearly the same, the ability to create virtual copies and Snapshot copies for...
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Tom Saint
CIO, BBM Canada

dev/test has given the company the flexibility to increase the amount of virtual storage by 60%. By using NetApp on VMware, BBM makes better use of existing assets and has eliminated the need to purchase additional direct-attached storage that would be underutilized when the company is not doing development.

“NetApp FlexClone has given us the ability to create development and test environments that truly replicate our production environment—quickly, easily, and repeatedly,” asserts Grassie. Adds Saint, “It allows us to do things we couldn’t have otherwise done and at less cost.”

SOLUTION COMPONENTS

NetApp products
NetApp FlexClone
NetApp Snapshot
NetApp SnapMirror
NetApp FAS3020 storage system
NetApp FAS250 storage systems
NetApp Data ONTAP® 7G
NetApp SnapManager® for Oracle
NetApp SnapManager for SQL Server®
NetApp SnapManager for VMware

Protocols
CIFS
NFS

Third-party products
VMware vSphere and ESX 3.5

Environment (dev/test and production)
Applications: proprietary PPM and diary processing systems, Exchange, SharePoint® team foundation server
Databases: Microsoft® SQL Server 2005, 2008; Oracle 8i, 10g
Operating systems: Microsoft Windows® 2003/2008, Linux® Redhat/Ubuntu
Server platform: IBM BladeCenter servers

NetApp creates innovative storage and data management solutions that accelerate business breakthroughs and deliver outstanding cost efficiency. Discover our passion for helping companies around the world go further, faster at www.netapp.com.