Better System Performance, Lower Cost, and Easier-to-Use HA, Make Switching to Echo^2 High Availability a "No Brainer"

THE DIXIE GROUP

The IT department at The Dixie Group had no idea that enhancing their disaster recovery capabilities was going to be such a *disaster*—at least to their system performance.

About The Dixie Group

The Dixie Group is one of America's fastest growing floor covering companies, recently becoming the fifth largest carpet company in the United States and the eighth in the world. In addition to manufacturing several widely recognized brands of carpet, including Maslan, Fabrica and Carriage, Dixie Group manufactures a variety of textiles and piece goods.

It began with a decision to bring in an iSeries high availability (HA) solution to reduce system downtime during both unplanned and planned downtime events. The IT managers at The Dixie Group, the Calhoun, Georgia based floor covering manufacturing giant, calculated that the money the company would be paying over the next few years in subscription fees to a hot-site data recovery center would fund a second iSeries machine and HA software. After some deliberation, the IT department decided to move forward, so a well-known brand of iSeries HA software was purchased along with a new iSeries model 820 to replace their model 730 production system. The 730 would then become the HA backup machine.

Around this time Tony Pack came on board as Database Administrator, and one of his first jobs was to get the HA software installed. Before long, the software was mirroring data between his two machines located in separate buildings and connected by a high-speed fiber optic line. A major benefit of the HA software was that daily tape saves could be done on the backup machine, thereby eliminating the downtime previously required for this process.

Once the software was installed, however, users began complaining that system performance was pretty much back to where it was before the upgrade; in fact, it was often worse. Significant system performance degradation was the last thing that Pack expected from this new disaster recovery initiative—especially since the upgraded production machine had twice the CPW capacity.

Says Pack, "IBM did a performance analysis to see exactly what was eating up the CPU and their results showed that some of the additional overhead came from the

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necessary journaling for HA, but most came from the processing by the HA software itself. Essentially, IBM said that we had outgrown the box and recommended that we upgrade to a model 825 despite our recent upgrade to a model 820!" Of course, Pack was disappointed, but he figured that the company would just have to live with diminished performance in order to enjoy the benefits of HA.

As Pack worked further with the HA solution, he discovered to his further chagrin that it wasn't unusual to see large numbers of transactions queued by the HA software on the production system just waiting to be sent to the backup system. This of course meant that all of these backlogged transactions represented a significant vulnerability should the production system suddenly fail.

Says Pack, "Our communications bandwidth was not being taxed by the workload, so we couldn't blame the backlog on that, but there were times when we were running many thousands of transactions behind – especially when we had high system volume. It wasn't unusual to see over a million transactions queued up on the production system."

To try to resolve the problem, Pack worked with his staff to reduce the workload by paring the number of objects being mirrored to those most critical. This cut the workload by half, which solved most of the backlogging problem, yet despite reducing the number of objects being mirrored, the overhead on the production machine still had not improved by much.

It was about this time that Pack was looking for a way to eliminate the downtime caused by the iSeries file reorganization process, and he came across iTera's Reorganize While Active product. He didn't even think to look at iTera's Echo² High Availability software since he already had HA and he assumed that they all worked about the same. During one conversation with iTera sales staff, however, he started lamenting the overhead that his current HA required, and he soon learned that Echo² uses remote journaling, which is proven to make a significant difference in HA performance.

Pack was especially interested in remote journaling because he was already using this feature of the operating system on his development machine to journal source code changes offline to his production machine, and was pleased with the performance and simplicity of this function. He decided to look more closely at Echo², and the closer he looked, the more impressed he became. Pack figured it was time to bring Dixie Group's other IT decision makers into the conversation.

By coincidence, Pack saw an invoice from his current HA vendor for annual maintenance at around the same time he got a quote from iTera for Echo² High Availability. He was shocked to discover that Echo² actually cost less than the annual maintenance fee of the other HA vendor. Says Pack, "The decision to purchase Echo² became a 'no brainer;' it was clearly superior technology at a lower cost."

"On a Sunday night, we shut down our current HA product and put Echo² on the machine, and when we came in on Monday morning it was as if our system had been upgraded," continues Pack.

Since Echo² uses remote journaling, it transports mirrored data to the backup system in a very efficient manner below the level of the machine interface. This relieves the production system of significant processing overhead.

Says Pack, "Before we purchased Echo², I came across information from IBM about the benefits of remote journaling in iSeries HA solutions in their Redbook, Striving for Optimal Journal Performance[1], and in one of their tests a 7 to 10 percent performance improvement was realized. However, when we replaced our previous HA with Echo² we experienced a performance improvement of closer to 20 percent!"

Echo² also resolved Pack's frustration with the time it took to monitor the previous HA system. Because of the autonomic functions of Echo², he now could monitor the system in only a few minutes a day, compared to the 5 to 15 hours a week required by the previous solution. In fact, because Echo² was so much easier to use, he assigned the monitoring tasks to subordinates, which gave him several hours a week to work on higher value IT issues.

Says Pack, "We just didn't have 2 to 4 hours a day to baby sit a solution, especially when we were paying the kind of money required by the HA vendor for software maintenance. With Echo², the time needed to maintain the solution has been dramatically decreased." Continues Pack, "We do have objects requesting sync every once in a while, but it's not the same ones day after day and it's not every day, as with our previous HA software. In most cases, we don't have to resolve out-of-sync objects since Echo² takes care of it automatically. The system practically runs itself."

In addition, Echo² didn't require that mirroring be suspended during the backup process. Says Pack, "When we did our tape saves on the backup machine with the previous HA, we essentially had to stop the product because we couldn't hold the apply process on the backup. This made us vulnerable during the entire backup time. With Echo² we can simply stop the apply process while the mirroring process keeps sending the data changes to the backup machine. This keeps transactions on the queued for replay to the data on the backup machine when the apply job is turned back on."

Conclusion: better performance, less time to monitor, less data vulnerability and a lower price made Echo² High Availability a "no brainer" for The Dixie Group.

Notes:
1 –From Chapter 6 in the IBM Redbook, Striving for Optimal Journal Performance on DB2 Universal Database for iSeries. This Redbook can be found at www.ibm.com/redbooks. Search under book ID#: SG24-6286-00.