Boyd Gaming Puts HA Solutions to the Test and Echo² High Availability Takes the Jackpot

For nearly six years, Boyd Gaming, had been utilizing a major iSeries high availability solution to mirror its accounting and other front-office applications. Boyd's experience with the product, however, was disappointing. Chronic problems included a frequent need to resynchronize objects between the two systems, difficulty testing role-swaps (the backup system taking on the role of the production system), and poor customer support.

About Boyd Gaming

Boyd Gaming Corporation owns and operates 13 casino entertainment properties with operations in Nevada, Mississippi, Louisiana, Indiana, New Jersey and Illinois. Boyd properties include the Stardust, California and Sam's Town hotel and casinos in Las Vegas, and Boyd is about to open the luxurious new Borgata Hotel and Casino in Atlantic City through a joint venture with MGM/Mirage.

Boyd decided that after six years they needed to evaluate their current strategy and brought in iSeries veteran, Jim Ravens as Business Recovery Manager.

Says Ravens, "When I came on board, the mandate from my boss Marv Magnani, Application Services Manager, was to achieve successful, repeatable role swaps, no matter what it took."

For months, Ravens worked with the existing HA product but was continually frustrated with the time it took to manage the system, the frequency of out-of-sync conditions, and worse, the level of support from the vendor.

Because of their frustration with the product, Boyd finally contracted with a reseller of the HA solution for help to get problems resolved and to achieve a successful role swap. After a significant reconfiguration of the system by the contractor, Boyd finally did come close to a role swap. However, when attempting to test the role swap Boyd discovered that errors had cropped up again which took a great deal of time to resolve. Boyd decided that they needed to start looking at other HA solutions.

At an IBM Technical Conference in Las Vegas, Marv Magnani ran across iTera's booth and learned about their Echo² High Availability product. Both Magnani and Jim Ravens took a closer look at the product and were encouraged.

Says Ravens, "The product seemed very simple and efficient, particularly because of how iTera had incorporated remote journaling into the solution."

Despite Echo² costing significantly less than their current HA, Boyd was understandably skeptical about running into their previous HA problems with Echo²,

plus they wanted to give their existing HA vendor one last chance. It was about this time that Boyd's lease was getting close to expiring on their model 740 iSeries that runs their back-office financial applications, and they were looking to replace it with a new model 820. Boyd still had a few months left on the lease when they had the idea to bring in the new machine early to use as an HA target box if both iTera and their existing HA vendor would be willing to install their solutions one at a time and let Boyd test each on the same set of data. Both HA vendors agreed, and IBM even let Boyd bring the machine in early at no extra charge to conduct the test.

Boyd Puts Echo² to the Test

Each vendor was given three days to install their HA software, have the application data fully replicated, and successfully perform a role swap. iTera was the first to install, and within three days the role swap was not only executed successfully, it was completed in about five minutes. Echo² was then taken off the system and the other HA solution was installed. At the end of the three days, the vendor was still not able to fully mirror application data from the source to the target, and because of this, the role swap was only partially successful.

When the test was complete, Ravens and his staff were very excited about the potential of Echo². However, before switching entirely toEcho², management wanted to perform one final test by installing Echo² on their two 820 front-office machines (where the hotel and gaming applications run), then role swap to the target machine, and finally, run these applications for a month on that machine before switching back.

Once Echo² was installed on these machines and all selected data replicated, Ravens did a role swap and successfully moved all users and interfaces to the second machine. For six weeks Boyd ran it's hotel and gaming applications on its backup machine without encountering any data integrity problems or having any objects go out of sync. At the end of the six weeks, Boyd then reversed the role swap without incident. Boyd management was now happy to select Echo² to as its exclusive iSeries HA solution.

Says Ravens, "These tests certainly gave me a good sense of how both HA solutions function, the effort needed to manage the systems on a daily basis, and what is needed to perform a role swap. It also gave our operators an opportunity to use both products." Continues Ravens, "We regularly and successfully test the role swap process; in fact, we have seen role swaps execute in as little as 24 seconds."

Unexpected Benefits

As Boyd continued to use Echo², they also realized a variety of unexpected downtime-reducing benefits:

When Boyd did their final migration to the 820 machine (the one that replaced their 740 machine used for back-office applications), Echo²'s replication process simply preloaded all of the necessary data on the 820 without the need for a manual tape backup and restore. In fact, when they were ready to pull the plug on their old machine, they simply did a role swap, moved the interfaces and let IBM take away the old box. "We saved the users about six hours worth of downtime, says Ravens. "The only downtime that users experienced was the time it took to take the cables off of the 740 and connect them to the 820."

Echo² also saved considerable downtime when they needed to do an OS upgrade on

their front office 820 machines from V5R1 to V5R2. A role-swap moved users to the target, the source machine's OS was upgraded, and users stayed on the target for two weeks, after which they were moved back to the source and the OS upgrade was executed on the target. Because Echo² can continue mirroring even when source and target machines are on different levels of the OS, mirroring never had to be suspended.

Another significant benefit was realized when, for the first time, Boyd was confident enough in the integrity of the target data to move their data warehousing, report generation and tape backup processes to the target machine, thus relieving the source machine of this overhead. And since tape backups could now be done on the target machine, downtime was also eliminated for this process as well.

Finally, Boyd purchased iTera's Check Point Recovery (CPR) product to speed up the process of ending, moving and restarting interfaces during the role swap process. Currently, when Boyd needs to move users to the target machine, the role-swap itself only takes a minute or less; however, operators still need to end all of the interfaces to other devices and systems before the role swap, and then move and restart the interfaces after the role swap. This entire process typically takes about two hours, but with CPR they are confident that the time can be cut to 30 to 45 minutes.