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INSURED AND INVESTED

Primerica Inc. secures its data on a zEnterprise 196

By Jim Utsler

Primerica Inc. employees (left to right) David Wade, Abel Melchiore, Rob Leigl and Lisa Casteel at the Duluth, Ga data center.

PHOTOGRAPHY BY BRAD NEWTON

Most everyone has some kind of insurance, whether auto, homeowners, life or all of the above. Most also have investment vehicles including stocks, bonds, mutual funds or simple savings accounts.

Companies are no different. Like individuals, they have to carry insurance to protect against losses and plan for the future with investments. But many organizations don't take their data centers into account when considering insurance and investments.

This is shortsighted, particularly when it comes to data. It's not until data is no longer accessible that people stand up and say, "We can no longer take our information for granted."

That's why some companies are diligent about making sure their data is backed up and ready to be recovered in the event of an emergency. That's their insurance against loss. Of course, they also need the technology to support those backup and disaster-recovery efforts. That's where investments come into play. David Wade, CIO and executive vice president of Primerica Inc., says, "IT departments are the custodians and responsible record keepers of companies' data."

That's why Primerica is investing in new technologies to ensure its data won't be lost, even in the event of a disaster. Using its new IBM zEnterprise* 196 (z196) as a central backup vehicle and DASD Backup Supervisor (DBS) from OpenTech Systems, it has largely automated its comprehensive backup procedures and dramatically decreased its overall time to recovery. In tandem, the company is also using several other OpenTech tools to reduce the number of backup tapes it has on hand.

Many Different Hats

Primerica, headquartered in Duluth, Ga., is a leading distributor of financial products to middle-income families in North America. Primerica provides term life insurance, mutual funds, loans and other financial products. It currently insures 4.3 million lives, and more than 2 million clients maintain investment accounts with the company.

Primerica's independent representatives use the company's proprietary Financial Needs Analysis (FNA) tool to help educate both existing and potential clients about their insurance and investment options. The FNA application tightly integrates with Primerica's back-end production data, all of which resides on the z196 server.

"We have approximately 400 AIX* and (Windows* on Intel* processor)-based servers—the Power* processor-based AIX servers are

used to host all of the company's Web-facing applications—but we feel it's important to maintain our data on one platform, which in our case is the mainframe. At Primerica, the mainframe is the file server for all legacy, intranet and Internet applications. This is not only because the mainframe is easier to recover in the event of an emergency, but also because we don't want to have to restore some 400-plus servers individually if something were to happen," notes Abel Melchiore, Primerica's data center senior vice president. "We purposefully run a very lean IT staff, meaning that everyone wears a lot of different hats, and we simply wouldn't be able to handle that."

Prior to moving to the z196 server, the company had been using a System z9* Enterprise Class machine. When the z9 server was due for an upgrade, Primerica had to decide whether to move to a System z10* server or leapfrog that model and move directly to the z196 server. According to Melchiore, the decision was easy to make. "It just made more sense, including financially, to go with the latest and greatest technology," he notes.

Primerica took possession of the z196 server in October 2010, but thanks to its lengthy experience with the mainframe—including some 19 systems over the course of 30 years—and a very capable IT staff, the actual to-production deployment took less than a day. In fact, Melchiore says, "It took less than six hours, which actually amazes a lot of people." The z196 now hosts six LPARs, three System z* Integrated Information Processors (zIIPs), and an Integrated Facility for Linux* (IFL) running Novell SUSE Linux.

Also amazing is the amount of attention the company pays to its backups—including dailies and weeklies, in the case of the mainframe—and disaster-recovery efforts. Because all of its production data is on the mainframe, it has to make sure everything is accounted for every day.

UP CLOSE

Customer: Primerica Inc.

Headquarters: Duluth, Ga.

Business: Financial services marketing

Challenge: Automating backup processes and reducing the number of tape volumes in storage

Solution: Deploying several OpenTech Systems' solutions to reduce reliance on manually scripted JCL-coded backups and tape-migration processes

Hardware: IBM zEnterprise z196 and a host of IBM Power Systems server-based AIX servers

Software: OpenTech Systems' DASD Backup Supervisor, Tape/Copy and Virtual Data Recovery

Proof Positive

That's in part why Primerica turned to OpenTech's DBS. In the past, it had relied on Job Control Language (JCL)-driven backup processes. But, given the company's lean IT staff, these weren't as automated as everyone would have liked— and the potential always existed for JCL coding errors. Additionally, the JCL scripts provided scant reporting and auditing capabilities.

As Melchiore explains, "Some products are very robust, but they require a tremendous amount of detail to make them work properly. With DBS, you just focus on the basics, creating the backup and recovery jobs, and then the system does everything for you. It tells you when your volumes are added and deleted. It provides disaster-recovery reports.

Of course, the company can't simply rely on DBS-generated reports to ensure it's ready in case of a disaster. Instead, it conducts several tests throughout the year, including a 12-hour system test and an 84-hour end-to-end regression test. The first is a proof of concept, demonstrating that the LPARs can be brought up on a hosted machine located at an out-of-region off-site facility and that the IPL can be completed.

The 84-hour test is much more rigorous. Not only does it include everything associated with the 12-hour test, but also what Melchiore calls "true end-to-end testing. We perform a 'cold' restore of all our mission-critical systems and data using encrypted backups. We then switch users over to the hosted system from our production system to test whether the data is up to date, in keeping with the backup we're using and that users can actually transact with the systems."

In one such test, Lisa Casteel, Primerica's data center assistant vice president, and Rob Liegl, Primerica's data center team leader, restored the

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largest mainframe LPAR, populated it with data from tape, IPLed the system and tested an application in about seven hours. More complete testing involving additional LPARs typically takes only a few more hours to complete, coming in at about 12 hours. As Melchiore notes, this type of rigorous testing isn't simply an exercise in what ifs, but "proof that we can get back into business very quickly."

Core Business Goals

That's only part of the story. The company was also facing a wall—literally—of backup tapes with some 34,000 off-site and another 100,000 on-site. Wanting to trim these numbers, Primerica decided to migrate its tape backups to a more dense form factor.

It chose to upgrade its 3490 tape volumes to larger and denser 3592-E05 encrypted tape media and consolidate the data within stacks. But this was easier said than done.

The company again turned to OpenTech, and this time was presented with Tape/Copy. This tool, like DBS, creates JCL scripts based on user requirements, with no actual coding needed. As Liegl explains, "You pretty much tell it what you want to do, whether you're migrating on a data-set level or on a volume level, and Tape/Copy creates the JCL for you automatically. As a result, you don't need a team of people trying to figure out how to copy the data and its properties. One person can do it."

When Tape/Copy moves or copies data volumes, it also moves or copies any associated identifying information, including the dates and times the original volume was created. This is true even when multiple legacy volumes are being stacked on new single volumes. As a result, users can look up volumes based on those identifying characteristics even after a migration.

"This comes in handy when you're looking for a tape but you're really not sure which generation you need. Tape/Copy simply pushes all of that information with the volume migration," Casteel notes. "Doing that manually would be a nearly impossible task."

Primerica is also using OpenTech's Virtual Data Recovery (VDR) to augment Tape/Copy. As the company was creating copies of the original tape volumes, it wanted to avoid confusion about which tape was which—the original or the copy. VDR allowed for the automated renaming of the copies."

Thanks to Casteel and Liegl's efforts, the number of off-site tape volumes dropped to around 3,000, and the on-site number to 13,000. The reduction in off-site storage needs resulted in a 50-percent savings.

Additionally, the number of monthly manual tape mounts has dropped dramatically since the move to 3592-E05 tape media. In the past, monthly manual tape mounts had come in at about 130,000. Now it's a mere 300, according to Melchiore. This has to do with a virtual tape system Primerica has put into place that emulates 3490 tape volumes.

A Quick Recovery

As an insurance and investment company itself, Primerica knows the importance of both being insured and making wise investments. That's why it has put so much effort into making sure it's covered in the event of a disaster and, if one should occur, that it can recover from it quickly. That's also why it decided to reduce the number of tapes it had to manage. This has allowed Primerica to save money and reallocate personnel to more pressing matters.

Primerica's upgrade to the z196 server has been equally significant. The z196 server is much more responsive than its predecessor (with microprocessors running up to 100 times faster than those on the System z9 machine) and offers the potential for the company's IT staff to manage its Power Systems and System x* servers as if they were part of the mainframe.

Although Primerica could have taken the direct System z9-to-System z10 migration route, it saw little point in that. It would be on a System z10-to-zEnterprise upgrade path in a couple of years anyway, so why not, as Melchiore previously put it, "go with the latest and greatest technology."

Jim Utsler, *IBM Systems Magazine* senior writer, has been covering technology for nearly 20 years.