Mainframe edition

IMS REMAINS RELIABLE PAGE 10

CICS SECURITY FEATURES PAGE 48

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INNOVATION® DATA PROCESSING

Baldor Electric streamlines backup with FDR/UPSTREAM

AN ELECTRIFYING SOLUTION!

gence
ge 32

Presenting: The IBM System z10 Enterprise Class

New servers provide enhanced flexibility, new scalability levels Page 20

Eric Breuer (left), manager, large systems, Baldor Electric, and Rance Greer, manager, computer operations, say the company's IBM System z9 EC and INNOVATION Data Processing solution simplifies backup.

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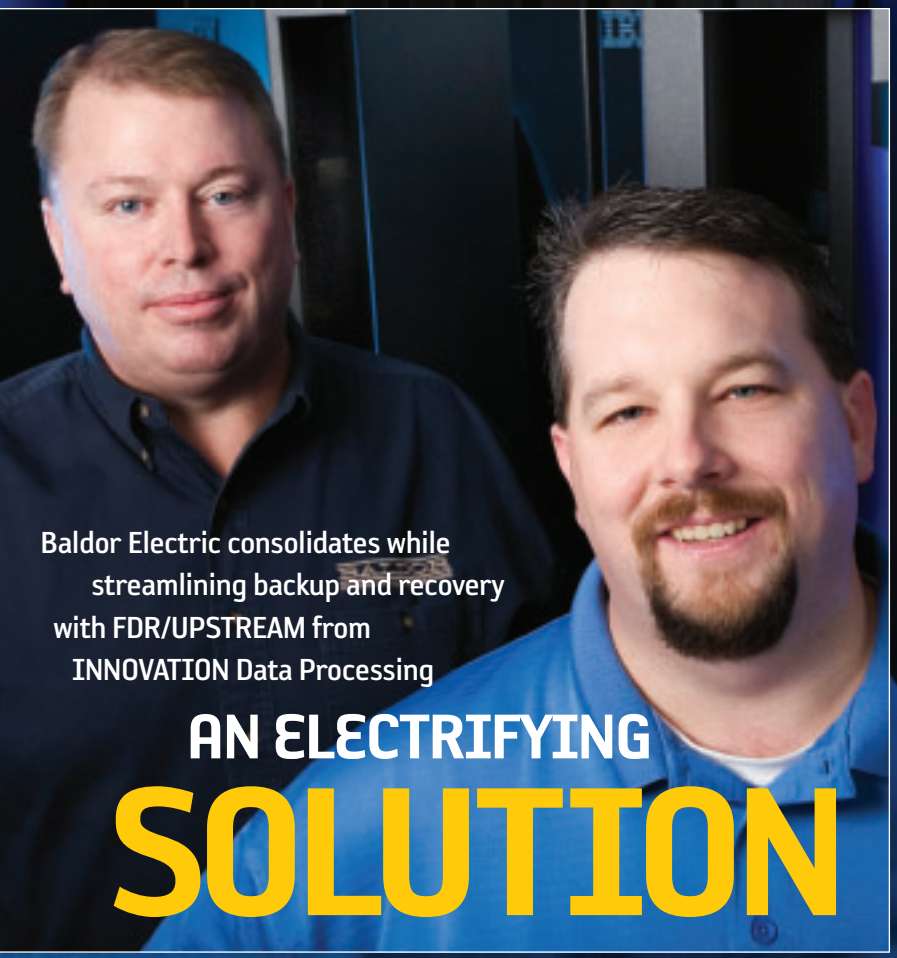


Baldor Electric consolidates while streamlining backup and recovery with FDR/UPSTREAM from INNOVATION Data Processing

AN ELECTRIFYING SOLUTION

PHOTOGRAPHY BY JASON MASTERS

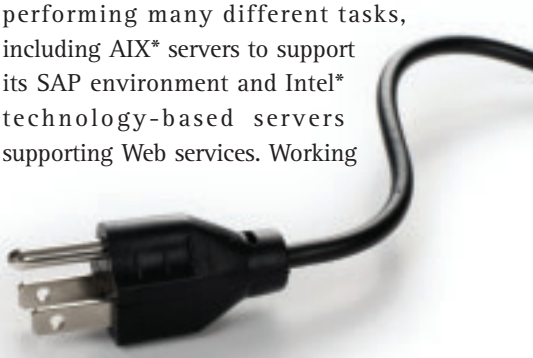
BY JIM UTSLER

Lately, I've written several articles about consolidation, moving programs and files from multiple servers to single servers—often in partitioned environments, both physical and virtual. The people I've spoken with generally say they're doing it for ease of administration (although benefits such as improved energy efficiency also come up).

Notably, their arguments for this type of IT reconfiguration are solid. Instead of managing any number of servers based on any number of hardware platforms, they can bring many of their applications under the umbrella of far fewer servers, sometimes as little as one. This allows them to cut back on the amount of work—and time—needed to make sure their IT assets are supporting the core business. It also allows them to save money on hardware, software licensing fees and datacenter cooling costs.

One of the biggest benefits to this type of server consolidation is that it also consolidates backups. Instead of having to manage a backup on each individual server, they can simply set one up, with all of its partitions—and even some one-off servers—being backed up as a single job. As one might expect, this saves a great deal of time and hassle—and requires fewer personnel resources. And in this time of company belt-tightening, every little bit helps.

One company taking this consolidation approach with its IT environment is Baldor Electric. In the past, it had many servers performing many different tasks, including AIX* servers to support its SAP environment and Intel* technology-based servers supporting Web services. Working



UP CLOSE

CUSTOMER: Baldor Electric

HEADQUARTERS: Fort Smith, Ark.

BUSINESS: Designer and manufacturer of electric motors, drives, power transmission products and generators.

HARDWARE: An IBM System z9 Enterprise Class (EC) 2094-S38

CHALLENGE: Simplifying its backup and restore procedures

SOLUTION: Using FDR/UPSTREAM from INNOVATION to easily back up not only its virtualized mainframe environment, but also its Intel technology-based servers

under a "grow the business without growing IT" philosophy, it consolidated many of these servers onto a single IBM* System z9* Enterprise Class (EC) 2094-S38, running z/OS* and Linux* on System z*.

It upped the ante by throwing INNOVATION Data Processing's FDR/UPSTREAM into the mix to consolidate the backups of not only its Linux on System z partitions, but also the PC servers it still had left in place. This one move has improved Baldor Electric's overall business resiliency by reducing the complexity of the backup environment while helping streamline recovery from potential disasters. "The application's ease of use was a big part of our decision to go with it," Rance Greer, manager, computer operations with Baldor Electric, says. "We went through training and were able to just take off and run with it."

Ease of Administration

Headquartered in Fort Smith, Ark., Baldor Electric was established in 1920 with the "determination," as the company line goes, "to build a better electric motor." Since then, it's grown to become a $2 billion company, with acquisitions of companies such as Southwestern Die Casting in the 1970s, Powergard Generators in 2000 and Rockwell Power Systems in 2007. The latter acquisition more than doubled its roster of around 3,800 full-time employees.

The company designs and manufactures industrial electric motors, power transmission products and generators. Its customer industries range from agriculture and food preparation to elevator manufacturing and mining. "The only things we don't do," says Eric Breuer, manager, large systems, Baldor Electric, "are those little motors for your washer, dryer and refrigerator in your home."

Baldor distributes these products across the country using district offices that are wholly owned by district managers. The company also has sales offices in Australia, England, Germany, India, Singapore and Switzerland, as well as other countries.

Because of the breadth of its operations and its recent growth, the company was saddled with a large IT environment that included AIX, Intel and mainframe technology-based servers. This mishmash of servers was becoming too unwieldy to easily manage. "We needed to reduce the number of operating systems we had to deal with. We couldn't expect everyone to know them all," Breuer says. "So it wasn't a matter of reducing head count, but more as a case of lessening the administration overhead."

A large SAP user with operations around the world requiring 24-hour availability, Baldor Electric had to find a way to reduce its reliance on so many different platforms, with the goal of simplification in mind. Of course, the best way to do this, the company decided, was to consolidate as many servers as possible onto as few servers as possible.

So over the past four to five years, the company began whittling away at its server install base, moving from multiple mainframe servers to just one (the System z9 EC in 2006) and bringing UNIX* technology-based servers into the System z environment using z/VM*. It also migrated its SAP environment to the System z platform, using Linux on System z servers as the primary SAP platform. It's using Linux on System z for some Web applications, such as Apache, and productivity software such as Lotus* Domino*.

Although the company is working diligently to bring as much as possible into the mainframe environment, Breuer says, "We'll probably never get away from the Intel platform altogether. But the push is to get as much on that System z platform as we can for administrative and disaster-recovery purposes." As part of this effort, the company is using a mainframe filesystem (z/FS) to store critical documents that would typically be found on a PC server on the System z platform. This server runs under Open Edition MVS* (OMVS). It uses a z/FS dataset and is mounted under OMVS and then shared through the setup files in the DFS/SMB Server. These datasets can be backed up just like any other dataset to the tape library and restored at disaster recovery.

"DFSMSrmm is very reliable, and it's 100-percent supported by IBM."

—Eric Breuer, manager, large systems, Baldor Electric

This allows the company to back up everything, including mainframe Linux on System z files and Windows* technology-based files, with a single solution, to one tape library. Should a disaster occur, the company would then be able to quickly restore all of its critical files, no matter the platform.

Running Itself

In order to make this happen, Baldor Electric is using FDR/UPSTREAM from INNOVATION Data Processing as its primary backup system. As Greer explains, "Once we got all of the Linux on Sytem z servers set up, we wanted a single backup process. That would allow us to do one backup for everything in our production environment every night and then run complete backups of everything in the house every weekend."

In addition to using FDR/UPSTREAM to back up and restore its mainframe Linux on System z and all of its associated files, Baldor Electric is using it to back up and restore its Intel servers. Once everything is written to tape, the backups are taken offsite. "We've proven we can restore from those many times, if, say, someone blows a server away and wants to restore it or if it's just a single-file restore," Breuer says.

Although it looked at other backup-type solutions, Baldor Electric found FDR/UPSTREAM to be the most compatible with its IT environment. In keeping with its consolidation effort, it wanted a single solution that would be easy to manage and not several solutions that would work on the different platforms, including the mainframe and the Intel technology-based servers. "Everyone wears two or three different hats, so we couldn't have one person designated solely to backups," Greer says. "And this solution was the best option for us to help us avoid that. Once you set it up, it simply runs itself."

And if a restore is required, the GUI-based nature of FDR/UPSTREAM's Director module makes things similarly simple. According to Breuer, all it takes is a "click to restore. It's a fairly easy tool to use, and our Linux on System z guys really like that." Using this tool, they can easily do even single-file restores, without having to take the time to muck through an entire backup to find what they're looking for.

Notably, FDR/UPSTREAM takes advantage of some of the built-in data-protection technology that comes with z/OS, such as IBM DFSMS* Removable Media Manager (DFSMSrmm*), which allows the company to control the expiration retention for backup tapes. "DFSMSrmm is very reliable, and it's 100-percent supported by IBM," Breuer notes. "We were comfortable with it, we had it and we were going to use it." Aside from FDR/UPSTREAM, the only non-IBM software Baldor Electric uses in its backup environment is the backup scheduling software from BMC Software. "Everything else on that box is running IBM," Breuer adds.

Another mainframe technology to keep data off the communications network that FDR/UPSTREAM takes advantage of is HyperSockets, which is built into the System z platform. In the case of Baldor Electric's backup scheme, the mainframe files are being channeled from Linux on System z directly to FDR/UPSTREAM via HyperSockets and then sent to tape across the FICON* channel. The company discovered early on that HyperSockets is faster than gigabit Ethernet. "When we tested some SAP transactions, we saw major performance benefits when using HyperSockets as compared to using a gigabit switch," Greer says.

One Step

Thanks to their three-day instructional session at the INNOVATION headquarters, Breuer and Greer became quickly acquainted with FDR/UPSTREAM. Since they set it up, they've had only three occasions where they had to go back to INNOVATION for in-depth technical support. Any other issues that may arise are quickly assessed and fixed based on the product manual.

"Some of the documentation that comes with other products simply tells you to call the administrator if there's an error," Breuer says. "Generally error messages are pretty cryptic. The INNOVATION documentation tells you exactly what you're looking at, which is pretty unusual."

What aren't cryptic, however, are the benefits Baldor Electric has gained by undergoing its consolidation effort. It now has a much more streamlined IT environment that allows its IT personnel to focus on innovation rather than ongoing maintenance. And FDR/UPSTREAM is a large part of that, allowing the company to easily manage its daily and weekly backups and then quickly restore from them if needed. In fact, the INNOVATION solution can let the company restore both its application files and Linux on System z system instances in one step.

"We haven't had to restore using FDR/UPSTREAM on the native partitions in real-world situations, but we've tested it and it works. In fact, every time we go to our disaster-recovery site, three times a year, we restore four servers using that method," Greer remarks. "On an ongoing basis, we just restore the whole volume. But in the event of a real disaster recovery, we would be using the standalone Rescuer function, with all 15 of our production Linux on System z servers coming up that way."

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