NETWORK TESTING LABS REVIEW:

DATA IS IRREPLACEABLE. PROTECT YOURS.

WE FIND CA'S ARCSERVE AND CA'S XOSOFT THE ANSWERS TO OUR NEED FOR DATA INTEGRITY, APPLICATION AVAILABILITY, DATA SECURITY AND DATA PROTECTION.

By Barry Nance

Category: Data Protection

ARCserve and XOsoft easily beat Backup Exec and Veritas Cluster Server in our tests. ARCserve backed up our various sets of data – large and small – more reliably, more quickly and more flexibly. ARCserve gave us control over our data at a finer level of granularity, retrieved more consistent data and was far easier to use. ARCserve scales better, is simpler to install and configure, is more robust, offers more features, works across more platforms and is far less expensive.

XOsoft gave us a level of high availability across our applications and users that far exceeded that exhibited by Veritas Cluster Server.

CA ARCserve and CA XOsoft are without a doubt the clear and obvious answer to maintaining both data integrity and application uptime.

CA ARCserve and CA XOsoft each earn Network Testing Labs World Class Awards for best data protection and best application uptime.

TRUE STORY: Early one afternoon, a hapless, harried network administrator – we'll call him Fred – picked up a programmer's test request form. It asked Fred to copy production data from a particular date's production run to the test environment, so the programmer could test a bug fix. Fred knew the current directory on the Unix machine was the test environment, so he first deleted all of

the existing test material. Fred then issued commands to copy a different set of files to the current directory structure. Fred blithely went on to his next task.

No lights blinked. No alarms sounded. Fred had no idea he'd just caused tens of thousands of dollars of damage to his company. When he went home that night, Fred was happy and felt he had done a good day's work.

However, when he issued the delete commands, ***Fred's current directory wasn't the test environment***. Unbeknownst to poor Fred, it was the production environment. He had neglected to switch directories. As network administrator, he had full rights and permissions in both. Fred assumed he had changed directories, and he further assumed that he couldn't delete "in-use" files ... he thought the operating system would give him a safety net.

A quirk within Unix was the key to Fred (or anyone else) not noticing his error sooner. If files are in use, ***Unix doesn't delete them right away***. Only when the last "close file" operation occurs does Unix perform the deletion.

At the end of the (online) business day, just before end-of-online-day backups, Unix dutifully deleted all the production files. The second shift operations people noticed the first sign of trouble when the end-of-online-day backups finished in just a few seconds.

To add insult to injury, the previous day's backup media had been transported to a special safety deposit box at a nearby bank. The bank was closed.

A whole day of an entire department's account maintenance activity was lost. Nearly a thousand users had to spend the next few days re-entering the missing data, and, because many of the changes were financially date-sensitive (mutual fund purchases, redemptions and interest rate changes), the users had to additionally enter special adjustments to get the correct amounts to appear in each account's records.

Fred almost lost his job.

Unfortunately, not a day passes but one company or another finds itself re-keying data, wondering which backup copy is which or otherwise losing substantial time and money to solve data maintenance problems.

The simple, easy and inexpensive answer is a good set of data maintenance procedures, plus the right level of data protection automation to help you implement those procedures.

The ideal data protection tool, first and foremost, preserves your data, and it can reliably and easily restore the original versions of that data. It is easy to administer and conforms to the way you do business. It offers a fine level of granularity that lets you precisely and accurately control the preserving – and the restoration – of your data. It does its job quickly, and it consumes as few

resources (such as server CPU, disk space and network bandwidth) as possible. The ideal data protection tool is secure, robust and scalable. It supports all the platforms (including virtual machines) you have in your business. The ideal data protection tool ensures high availability of your applications and your data.

To find out which data protection tool you should be using, we put the two market leaders through their paces in our Alabama lab, testing CA's ARCserve and XOsoft against Symantec's Backup Exec and Veritas Cluster Server. We intensively stress-tested these products to decide which we – and you – could trust with mission-critical data.

CA's ARCserve and XOsoft emerged the winners in every round of tests. ARCserve stored only a single instance of repetitive data, gave us a simple-to-use dashboard interface, provided faster and more efficient data recovery, was more reliable, was more scalable and was significantly less expensive to buy and administer. XOsoft afforded us application-aware replication of our computing environments, supported more applications, was easier to use and gave us a finer level of control over our data. Both ARCserve and XOsoft were easier to set up and configure. Both supported more platforms. And, importantly, ARCserve and XOsoft are more secure.

CA's ARCserve and XOsoft win Network Testing Labs World Class Awards for best data protection product and best application uptime product.

Performance

Preserving (backing up) data is one of the few computer activities that's absolutely necessary yet performs no "data processing." You want backup operations to take as little time and use as few computing resources as possible, so you can put your computers back to work.

In our tests, CA's ARCserve performed much faster than Symantec's Backup Exec, and it handled our data reliably and safely. Chart 1, below, shows the average difference between the two across a wide gamut of file backup and file restore situations. ARCserve's average time to back up files was only 34.2 minutes, while Backup Exec took 43.5 minutes. For file restoration, ARCserve needed only 40.5 minutes, but Backup Exec's efforts lasted 52.0 minutes.

Storage might be cheap, but managing that storage certainly is not. ARCserve needed only a small fraction of the backup media space that Backup Exec consumed. In fact, the difference was so great that we don't have a chart to show you – standard chart scaling put ARCserve on the ground and Backup Exec in the stratosphere. ARCserve typically reduced our backup data storage requirements by ratios ranging from 20 to 1 up to 30 to 1. ARCserve's Data Deduplication feature stores data only once, with markers to indicate duplicates

(such as copies of emails sent to several recipients). Symantec does offer a separate data deduplication feature (PureDisk), but it has a fairly high price tag, and it doesn't work nearly as well or as efficiently as CA's built-in data deduplication.

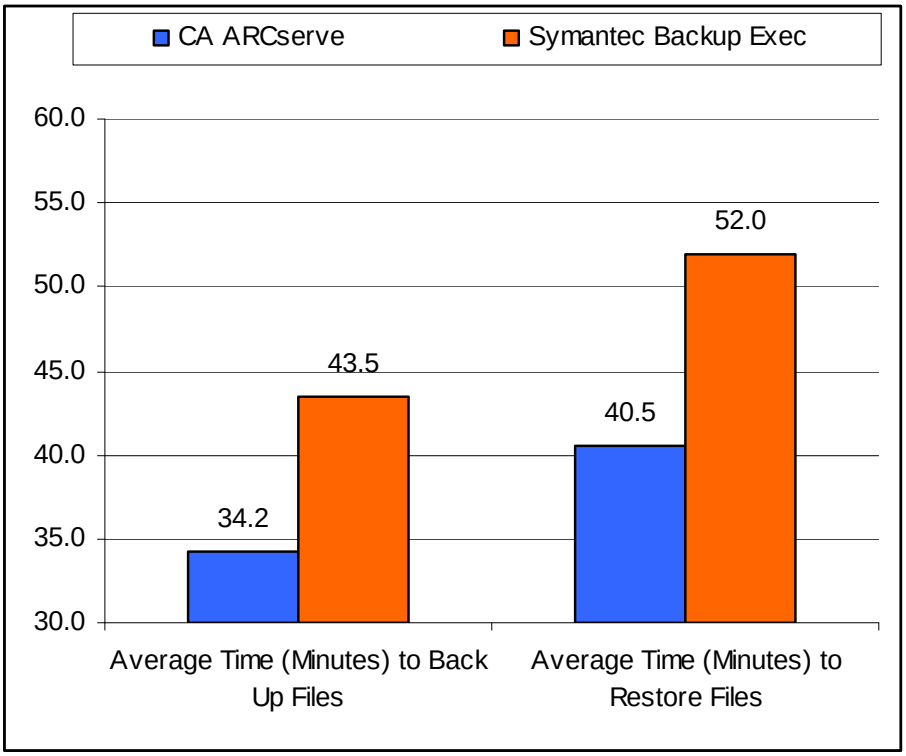

Chart 1. Backup/restore performance.

In our application uptime/availability tests, XOsoft outperformed Veritas Cluster Server by a mile. Chart 2 depicts the average time needed by XOsoft and Veritas Cluster Server to detect a server or network outage and then switch application availability and usage to a different server. When an outage occured, XOsoft gave us application availability within 30 seconds. Disappointingly, Cluster Server took over a minute to notice the outage and perform the switch.

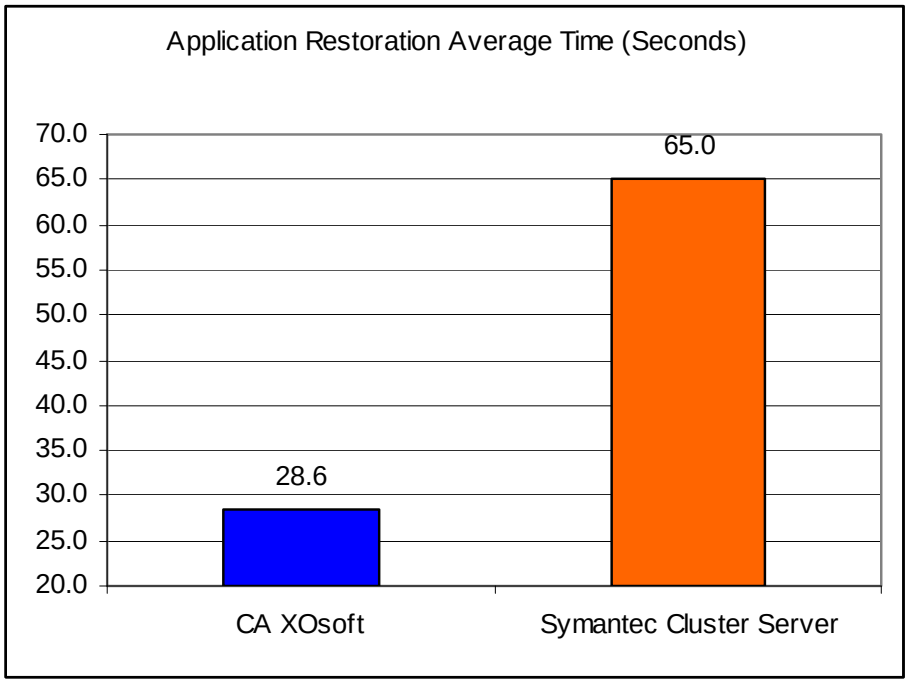

Chart 2. Application availability restoration performance.

Ease of Use

ARCserve and XOsoft each have an intuitive, easy-to-navigate interface, with a thoughtfully-designed dashboard that tells you, at a glance, the current status of your backup/restore and application availability activities. An expandable/collapsible tree lets you quickly drill down to perform specific operations on your data. The central console offers simple, one-click access to such tasks as job setup, activity monitoring and reports. ARCserve's one-step, granular file recovery was a delight to use – ARCserve always made us feel we were in complete control of our data. The ARCserve and XOsoft interfaces also offer one-step-at-a-time, easy-to-follow Wizards.

XOsoft is full of features to help your network run smoothly. Of these features, we were most impressed with XOsoft's capability to throttle its bandwidth usage. We found we could easily tune XOsoft to use exactly the network bandwidth we desired.

In contrast, Backup Exec and Cluster Server lacked the wealth of available detail found in the ARCserve and XOsoft interfaces. We also found the ARCserve and the XOsoft interfaces to be more flexible and comprehensive. To their credit,

Backup Exec and Cluster Server do provide a good real-time overview of backup, restore and application uptime status information.

ARCserve installs via a Wizard, and the process takes only about fifteen minutes. Backup Exec took about a half hour to install – twice as long. Both ARCserve and Backup Exec guide the operator, step by step, through the first backup.

Both CA and Symantec supply good documentation with their products.

Special Features

In addition to its no-extra-charge data deduplication feature, ARCserve gave us excellent data management for our file servers, database servers, application servers and our messaging servers. In our Oracle environment, ARCserve's RMAN agent used Oracle application-specific technologies to give us continuous data protection for our databases. We further noted that the RMAN agent was particularly efficient, robust and reliable. ARCserve's backup and restore operations for our virtual machine environments worked flawlessly. To our delight, ARCserve even came with two licenses for CA XOsoft replication.

XOsoft was similarly efficient as it worked in the background to ensure business continuity and application availability. XOsoft's support for VMware and its single-instance host level replication for Microsoft Hyper-V were impressive. XOsoft's high degree of integration with SharePoint 2007 was also evident – XOsoft auto-discovered our SharePoint data, gave us consistent SharePoint bookmarks and was able to replicate not only the SharePoint data but its configuration data, as well. XOsoft's application-aware replication was unparalleled.

Both ARCserve and XOsoft gave us better and more granular control over the backup, restore and replication of our Windows configuration data, including dynamically-changing Windows registry contents.

Conclusion

CA's ARCserve and XOsoft were the clear winners in our evaluation. Not only were they more granular, they were far faster, more scalable, more reliable and easier to use.

For both physical and virtual servers, ARCserve and XOsoft are robust, feature-rich and particularly frugal in their use of computing resources. We note that ARCserve and XOsoft will help companies significantly reduce their IT budgets.

ARCserve and XOsoft gave us measurably better data protection and application uptime. We highly recommend you consider using ARCserve and XOsoft in your organization.

Contacts and Pricing

CA 800-225-5224	
ARCserve Backup File Server Suite	$995
ARCserve e-Mail, Database and Application Suites	$1,495
Virtual machine support (VMware, Microsoft and Citrix)	$395
XOsoft	Starts at $2,000 per server
Symantec 800-721-3934	
Backup Exec for Windows Servers	$995
Agent for Windows systems	$595
Agent for Linux systems	$295
Agent for Microsoft Exchange	$995
Agent for SQL Server	$995
Agent for SharePoint	$995
Agent for Active Directory	$995
Agent for Oracle RAC	$3,195
Central Admin Server Option	$1,595
System Recovery Option	$695
Veritas Cluster Server	$995 per CPU, $1,995 for VM version

Testbed and Methodology

Virtually all our testing took place across 512 kb/s frame relay, T1 and T3 WAN links. The testbed network consisted of six Fast Ethernet subnet domains routed by Cisco routers. Our lab's 150 clients consisted of computing platforms that included Windows NT/98/2000/2003/ME/XP/Vista and Red Hat Linux (both server and workstation editions).

The relational databases on the network were Oracle 8i, IBM DB2 Universal Database, Sybase Adaptive Server 12.5 and Microsoft SQL Server 2005. The network also contained three Web servers (Microsoft IIS, Netscape Enterprise Server and Apache), three e-mail servers (Exchange, Notes and Sendmail) and two file servers (Windows 2003 Advanced Server and Netware).

Our virtual computing environments consisted of VMware and Microsoft Hyper-V.

A Compaq Proliant ML570 computer with four 900 Mhz CPUs, 2G bytes RAM and 135G-byte hard disks, running Windows 2000 Advanced Server, Windows 2003 Advanced Server and, at other times, Red Hat Enterprise Linux, was our test platform for all the products' server components.

Data Protection Report Card

Grade scale is A through F, with F = Failing and A = Perfect

Category and weight (%)	CA ARCserve and XOsoft	Symantec Backup Exec and Veritas Cluster Server
Backup, Restore and Application Availability (30%)	A	B
Performance (20%)	A	C
Ease of Use (10%)	A	B –
Reports (10%)	A –	A –
Deployment (10%)	A	C +
Documentation (10%)	B	B
Overall Score	A –	C +

About the Author

Barry Nance is a networking expert, magazine columnist, book author and application architect. He has more than 29 years experience with IT technologies, methodologies and products. Over the past dozen years, working on behalf of Network Testing Labs, he has evaluated thousands of hardware and software products for ComputerWorld, BYTE Magazine, Government Computer News, PC Magazine, Network Computing, Network World and many other publications. He's authored thousands of magazine articles as well as popular books such as *Introduction to Networking (4th Edition)*, *Network Programming in C* and *Client/Server LAN Programming*.

He's also designed successful e-commerce Web-based applications, created database and network benchmark tools, written a variety of network diagnostic software utilities and developed a number of special-purpose networking protocols.

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About Network Testing Labs

Network Testing Labs performs independent technology research and product evaluations. Its network laboratory connects myriads of types of computers and virtually every kind of network device in an ever-changing variety of ways. Its authors are networking experts who write clearly and plainly about complex technologies and products.

Network Testing Labs' experts have written hardware and software product reviews, state-of-the-art analyses, feature articles, in-depth technology workshops, cover stories, buyer’s guides and in-depth technology outlooks. Our experts have spoken on a number of topics at Comdex, PC Expo and other venues. In addition, they've created industry standard network benchmark software, database benchmark software and network diagnostic utilities.