

CommVault Galaxy Slashes Backup Time and Labor at Humber Institute

QUICK FACTS

Industry/Solution:

- Education

Platform/File System:

- Windows, UNIX, AIX, Linux

Application(s):

- Backup and restore

Challenge:

- While the available backup window stayed the same, data to be backed up was out growing it. At the same time, support, performance, and reliability with the Veritas backup solution were unsatisfactory.

Solution:

- CommVault Galaxy Backup & Recovery
- Synthetic Full Backup

Benefits:

- Backups are reliable and trouble free
- Backups are completed well within available windows; one backup process reduced from four days to 10 hours
- IT time freed up to work on strategic issues
- Galaxy ease of use allows technicians at satellite sites to do their own backups and restores

Customer Profile

Humber Institute of Technology and Advanced Learning, located in the west end of Toronto, is one of Canada's largest and most respected community colleges. Humber offers 150 full-time diploma programs, and over 200 certificate programs, as well as over 1,000 courses through Continuing Education. The student population includes 12,000 full-time students and 28,000 part-time students.

The college has two major campuses: the North Campus, and a large satellite campus, the Lakeshore Campus. There are also a number of smaller satellite sites. The Information Technology and Services (ITS) department operates out of a data center on North Campus, from which it serves the entire college.

Data Management Environment

Humber manages a large, decidedly heterogeneous computing environment across its multiple campuses, with a total of approximately 80 servers, including Windows, Unix, AIX, and Linux servers. Total disk storage is around two terabytes. There is a gigabit Ethernet LAN in the North Campus, with a 100 megabits per second link to the Lakeshore Campus. Backup for the whole enterprise is done over the network to the data center from all sites and departments, using CommVault Galaxy software.

NetBackup "Not Serving the Purpose"

Prior to installing CommVault Galaxy at the beginning of 2003, Humber was running Veritas NetBackup software. "NetBackup was just not serving our purpose," says C.M. Shum, Manager, Technology Services Support. Specifically, backing up the Lakeshore Campus had become a serious problem. "We only have a 100 megabit link to Lakeshore, and their backups will grow to 100 gigabytes," explains Shum. The window of time available to do the backup — over the weekend — was staying the same, but the amount of data to be backed up was growing all the time, so the window was getting tighter and tighter. "We knew that sooner or later, we'd run out of time to complete the backup if we stuck with Veritas," says Shum. "We needed an 'incrementals forever' backup strategy, but the architecture of NetBackup did not allow for that. NetBackup simply could not keep track of the files well enough to support

the 'incrementals forever' strategy. It got to the point where a full backup of the Lakeshore Campus was taking almost four days. The backup operation flooded the only data pipe and seriously affected the communication traffic between the two campuses. However stopping the backup job halfway will cause the data previously written onto tape to be totally useless. That was not acceptable; we had to make a change."

The Winner, By Unanimous Decision

Describing the challenge the ITS team faced, Joe Brazas, Director, Enterprise Technology Services explains, "The reason we went looking for a new backup solution was that we knew the existing solution was going to cause us a great deal of pain at some point. We needed something that had an architecturally different approach to doing backups. The CommVault Galaxy approach was very attractive to us because it relieved us of the pain of trying to do a complete, full backup as our data sets keep growing."

Humber evaluated several enterprise storage management solutions, including IBM Tivoli Storage Manager. "We almost went with Tivoli," recalls C.M. Shum, "but we got a call from CommVault. I was biased in favor of Tivoli, but I said OK, we might as well give it a try. CommVault's local people came in and gave a presentation. Our technical people were amazed and impressed by the Galaxy technical concept and by its performance. CommVault installed the software for a trial, and our techies all got to kick the tires. At the end of the trial, we had a unanimous decision to go for CommVault."

Backup Infrastructure

CommVault Canada worked closely with the Humber ITS department to design, stage, and implement an Enterprise Backup System deployed college-wide. The backup server is a dedicated Dell server running Windows 2000. The tape library is an Exabyte X-200 tape library, with six Exabyte Mammoth II tape drives and 200 slots. CommVault installed and configured Galaxy CommCell (CommServe, Media Agents, and relative iData Agents).

Wide Range of Data to Protect

Data protected by CommVault Galaxy includes student emails, course work, and schedules, staff and faculty email, the college's extensive

Web site, and several "Electronic Classrooms." In order to get their PCs and laptop computers backed up, students and faculty upload to a Windows server. "We found that a large percentage of students and faculty take advantage of the backup service," says Shum. A new student registration system is being developed on the Linux platform. When it is completed, student registration data will be offloaded from the mainframe and backed up using Galaxy. The AIX platform is used for teaching UNIX, and several schools within the college use systems for teaching. For example, one school maintains two Sun Solaris systems. All are backed up using Galaxy.

Synthetic Full Backups Play Important Role

Humber uses a variety of backup techniques, depending on the size of the backup needed for each server. All servers are scheduled for nightly incremental backups and monthly Synthetic Full backups. Incremental backups are done seven days a week. The servers are separated into four groups: Week 1, Week 2, Week 3, and Week 4. Each week, one group gets a Synthetic Full backup on the weekend. That means that each server gets a Synthetic Full backup once every four weeks. Servers with more than 50 GB to back up get Galaxy Synthetic Full backups (one full backup, and then "incrementals forever"). "The Synthetic Fulls capability is one of the major reasons we chose Galaxy," says Shum.

Faster Throughput Solves the Lakeshore Bottleneck

The performance of the Galaxy software has helped Humber solve the problem that started the whole process of reviewing the backup infrastructure. "I've been amazed by the throughput we get with Galaxy," says Shum. "We also did some tuning of the network, but the backup of the Lakeshore Campus, which was taking over four days, and which was really the problem that drove us to need a new backup solution, now takes five hours when doing Synthetic Fulls with Galaxy. The best part is all of the data come from various incremental tapes residing locally in the tape library and there is no impact on our Lakeshore data link."

Saving Time

Galaxy has had a major impact on the total amount of time the ITS staff must dedicate to backup. "We were dedicating the equivalent of about 2.5 full time employees to supporting backup when we were using Veritas," says Shum, "and that was after about three years experience with Veritas. After about six months experience with Galaxy, we've cut backup manpower down to the equivalent of about 1.5 full time employees."

User Happiness

Shum also sees that Galaxy helps users do their jobs more easily. "When we installed Galaxy," says Shum, "we brought a number of the technical people from around the colleges in for training. CommVault did the training. Galaxy is more reliable and robust than the previous backup solutions, and it's more intuitive and easier to learn. As a result, these technicians have more flexibility in doing their jobs, and we have the security environment, supported by Galaxy, that still allows us to control access. With Galaxy, we can now allow the technical people in the various departments to do their own backups and initiate their own restores. We don't want to be an obstacle when they're working on their systems in the wee hours of the morning. For example, the various departments often do system upgrades over the weekend. They usually want to do a backup first, and they might want to do an incremental part way through the process. With Galaxy, we can let them do all that on their own."

Sense of Security

Beyond saving time, Joe Brazas sees additional benefits from Galaxy: "What's the payoff? First, a sense of security. We know we have the backup covered. That's a big plus. Second, our backup window has decreased so dramatically that we are now able to focus on higher level issues, because we've already done our backups."

"When we were using Veritas NetBackup," says Shum, "it took lots of manpower resources just scheduling backups. We were also worried about the integrity of the data, so we had to do lots of quality assurance. When we first started using Galaxy, we ran a number of tests on the data. We are now

very confident in the data. Now we can concentrate on researching other technologies. With our backup technology stabilized, we were able to look to SAN, which should be installed before the end of 2003."

CommVault Reports and Support Rated "Best"

Galaxy automatically generates daily reports tailored to the needs of each technician. "The reporting functionality of Galaxy is one of the best I've ever seen," says Shum. "We've gone through CA Arcserve, IBM ADSM, and Veritas NetBackup. We know the strengths and capabilities of the backup software that's out there, and we are really impressed with Galaxy."

The campus-wide installation of Galaxy went smoothly, and Galaxy ongoing technical support has been excellent, reports Shum. "Not only is the 800-number support good," says Shum, "but the best part is the on-site support. If we have a problem and we call the local support people, they get here promptly. One reason we switched from Veritas was that we were not satisfied with the support we got. In one case, we had a problem, we asked for help, but after four or five weeks the problem did not go away. We requested on-site support, and they said they did not have the staff to handle it. They would send over an independent consultant, but we'd be charged extra. Let's put it this way: of all the backup software products and companies we've been involved with, CommVault support is the best. The support staff are really knowledgeable and friendly. If people aren't friendly, I'm not going to call them. I don't want to call them if they are hostile!"

The Product Works

Galaxy product performance has also been outstanding. "Shortly after we installed Galaxy, we had a 300 gigabyte server fail," recalls Shum. "With Galaxy, we restored every file, 1.7 million files, all restored without a problem. That included student data, course work, assignments, schedules. If you're a student, that's not just data, it's your research, your paper. If it's lost, you're in trouble, right? I'm in trouble too. If I can't protect student data, there's something wrong. With Galaxy, I'm confident I can protect the data."

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