Seminary saves time, storage, with backup snapshots, dedup

Pittsburgh Theological Seminary chooses snapshot technology, with incremental backups
and deduplication, for continuous protection, reduced storage space, better user experience

Customer Profile
Organization: Pittsburgh Theological Seminary
Industry: Higher Education
Country: United States
Employees: 95
Students: 276
Website: www.pts.edu

Business Need
Maximizing virtualization meant that Pittsburgh Theological Seminary (PTS) had to back up its
physical RDM servers – a task that wasn't possible with their existing backup software.

Compounding the problem was a large data footprint and shrinking backup window. What was
needed was a fast, virtualization-friendly approach.

Solution
PTS chose the Dell™ AppAssure 5.1 backup and disaster recovery software, which has cut data
backup time, reduced storage costs, and improved user experience.

Benefits
- Completed backups significantly faster, to finish within small window
- Delivered a high deduplication rate for reduced storage costs
- Eliminated data loss from long backup windows with incremental snapshots
- Deployed quickly, freeing up IT staff time and related expenses
- Simplified physical and virtual data backup with easy-to-use intuitive interface

Solutions
Dell™ AppAssure
Dell™ Latitude E5520s and E6320s
Dell™ OptiPlex 390s and 3010s
Dell™ PowerEdge R710 and R610 servers

Over six decades before the start of the Civil War, Pittsburgh Theological Seminary (PTS)
opened its doors in Western Pennsylvania. Its mission: teach, nurture, and prepare students by
giving them tools and information for a superior quality graduate education. The mission remains
unchanged, but certainly not the tools. Today PTS takes pride in an Information Technology (IT)
department that serves students, faculty, and staff by handling all computer and network
technologies and supporting campus Enterprise Resource Planning (ERP), multimedia services,
copy and print services, and instructional labs.

Student needs drive school's IT environment.

IT Director and former Network Administrator David Middleton has spent nine years on the
evolving infrastructure. As he put it, "the network, the system, the virtualization environment, all of
our mail servers – I built our entire infrastructure." He pointed out, the operation is SQL-focused:
the entire ERP package and frontend package – where students go to register and pay their
tuition – is driven by the same SQL backend. In all, IT supports 1700 Exchange mailboxes, four
SQL servers, 22 virtual machines, six physical servers, and 4TB of data.

Virtualization brought new issues.

Virtualization, combined with increased storage demands, created a larger data footprint, a situation made more difficult by an increasingly smaller backup window. In addition, the OS drive of the physical servers, as well as their VMware settings, proved difficult to back up. Since moving from principal machines to a virtualization presence meant **everything**, including every drive, had to backed up, this was a serious problem. PTS realized its backup strategy had to change to minimize disruptions during production time.

The challenge: wasted time and storage space.

Weekly backups were taking longer, and daily differential backups for large datasets were reduced to daily incremental backups, increasing the time needed to recover from accidental or malicious deletions of data or other failures. These datasets often contained duplicated information that was simply backed up, over and over, wasting storage space.

Solutions were tried, and solutions failed.

"First we tried Symantec VMware backup software and put it to the test and it failed miserably. The primary reason that it failed was because it would not support physical RDMs," explained Middleton. "Exchanges and SQLs are our most important data ... So, the first time I tried to do a backup with the Backup Exec …   my server almost went offline ... only a couple of seconds, but that was enough to cause trouble."

But the problem still had to be solved; otherwise, rerunning jobs that failed, fell outside the backup window, or ran out of space would take time and manpower -- which translated to higher costs and greater risk.

PTS makes virtualization top priority.

PTS focused on finding a solution that was, in Middleton's words, "virtualization-friendly out of the gate." Then a piece of good timing took over: he had received a targeted email from AppAssure, spoke with them on the phone, and then followed up at VMWorld.

After testing, purchasing, and fine-tuning, "it has been behaving quite nicely," affirmed Middleton. He also pointed out that he enjoys controlling which data or servers are backed up hourly or daily or on any schedule he chooses.

Deduplication (dedup) reduces storage space.

For IT at PTS, deduplication is an added – and welcome – benefit. Middleton stated, "The dedup -- the compression -- is definitely something that has been a huge value to us: to take all that data and be able to put it in such a small footprint."

Snapshot technology helps IT meet expectations.

Students and staff expect 24/7 access to IT services, and, as Middleton pointed out, "using the traditional method of doing large backups on a weekend and doing incremental or differentials during the week just doesn't play well, because the weekends are still primetime."

With incremental backups, miniaturized and spread out through the entire week, IT can hope to deliver full access any time, with little or no disruption.

But benefits don't end there. Not only are the backups themselves superior and storage-saving, there are also more recovery points for IT. Middleton mentioned that it's not yet clear exactly how much money is being saved, but stated, "It has it given us better recovery options and more recovery options. And I feel that we're better protected now than we were before."

Dell AppAssure made Pittsburgh Theological Seminary student-ready.

The "house that David built" now manages the 4TB of data with an IT team of just 3.5 people, and has managed to save time, reduce storage space, and create an efficient, cost-effective virtualization environment that is totally transparent to the hundreds of students who choose classes, register, and pay their tuition bills. And that's exactly how he likes it.

Quote 1:
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— David Middleton, Director of Information Technology, PTS

Quote 2:

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