VIRTUA

EMC Avamar provides reliable backup and recovery as healthcare provider rapidly virtualizes server environment

ESSENTIALS

Challenges

- Slow, unreliable backup and recovery
- Frequent backup failures requiring server reboots and downtime
- Desire to reduce tape costs
- Backup solutions hindering data center expansion and data growth

Solutions

- EMC Avamar backup and recovery solution with data deduplication
- EMC Data Protection Advisor
- VMware server virtualization solution

Key benefits

- Fast, daily full backups and one-step recovery via existing network links
- Single, easy-to-manage backup solution for physical and virtual environments
- Backup run times decreased by more than 50 percent, while backing up three times more servers
- Lower tape costs as usage reduced from 35 tapes to just a few daily
- Flexibility to add applications and servers, enabling continued growth

CHALLENGES

Virtua is a comprehensive healthcare system of hospitals and medical facilities based in Marlton, New Jersey, with more than 8,400 employees and 1,800 physicians. Seeking the latest technologies to improve quality patient care and increase operational efficiency, Virtua decided to move its production data center to a new, remote hosted facility. In addition, Virtua IT was planning hundreds of new projects supported by a rapidly growing VMware virtualization infrastructure—such as electronic medical records (EMR) and a healthcare information exchange. These projects were part of the organization's strategic transformation toward a completely digital, highly virtualized, and efficient hospital.

Virtua used a combination of Symantec NetBackup and Backup Exec to back up 155 servers to tape and disk. Backup jobs often ran at least 12 hours with frequent failures leaving data unprotected. Sometimes servers had to be rebooted to get backups running smoothly, and backups sometimes hindered server performance. Upon examining their infrastructure, the Virtua IT team realized that their existing backup solutions would be even more problematic as they pursued new initiatives, and they had concerns about protecting the growing VMware® environment.

SOLUTIONS

After exploring different options, Virtua decided to implement EMC® Avamar® backup and recovery software with integrated data deduplication. Unlike traditional backup methods, Avamar deduplicates backup data at the source—within and across virtual and physical environments—so that only new, unique sub-file data segments are transferred and stored during daily full backups. Avamar also deduplicates backup data globally across sites and servers, reducing total required backend disk storage by up to 50 times.

Today, Virtua uses an Avamar agent-only solution for daily full backups of critical financial, clinical, and administrative applications running on 401 physical servers and VMware virtual machines to Avamar Data Store systems at its primary data center. In addition, Avamar automatically replicates the backups to Avamar Data Stores at a remote data center for disaster recovery.

Virtua also uses EMC Data Protection Advisor to report on backup status, completions, and schedules. Data Protection Advisor contributes to overall backup reliability and efficiency by providing Virtua IT and its data center operations staff with centralized backup reporting. Virtua is implementing EMC HomeBase™ to enable server-based operating system recovery and migration for its physical server environments.

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Virtua's 440-terabyte EMC CLARiiON® CX™ networked storage infrastructure supports more than 300 applications and databases, such as NextGen EHR, McKesson document imaging, Oracle, GE PACS medical imaging and VMware ESX® Server. With EMC DiskXtender® software, Virtua archives radiology and document images from CLARiiON to EMC Centera® systems. For business continuity, CLARiiON and Centera infrastructures are replicated to Virtua's remote site.

RESULTS

Avamar's deduplication capabilities help Virtua with fast daily full backups across its existing infrastructure, while reducing the network impact by about 99 percent. This has enabled Virtua to reduce its full backup times from 12 hours to less than six hours, perform daily full virtual machine guest and physical server backups, and protect three times more data and servers with an easy-to-manage Avamar solution. Virtua now protects over 27 TB of data residing on physical and virtual Windows servers alone. In addition, Virtua's backup administration staff can now focus on more strategic tasks.

"Avamar is important to our IT transformation at Virtua. It's enabling us to manage our growth, reduce our downtime, and dedicate resources to new, innovative projects. We can bring new and strategic IT initiatives to market efficiently, and these projects are providing more value to our customers."

CHAS THAWLEY, ASSISTANT VICE PRESIDENT, TECHNOLOGY

Jim Bloemker, a Virtua systems and storage engineer, explains, "Before Avamar, we would run into backup issues three to four times a year. Often I would spend about 30 percent of my time managing and troubleshooting backups. Now backups take maybe 10 percent of my time, and our infrastructure is three times larger. Avamar is a reliable, set it and forget it solution."

Prior to using Avamar, the recovery process was very time consuming since Virtua often had to order tapes from an offsite location, noted Bloemker. Fred Kohli, a Virtua server engineer, explains, "Last week, I restored 11 versions of the same database in just 30 minutes using Avamar. With our prior solution, it would have taken at least four hours, or days, to recover the data. With Avamar, files can be restored in just a few minutes. We get restore requests daily, so this is a huge time savings and enables us to provide better service to our users."

Chas Thawley, Virtua's assistant vice president, Technology, also noted Avamar's ability to protect physical and virtual server environments via a single, integrated solution. Given that Virtua has already virtualized 50 percent of its servers, Avamar greatly simplifies management and control. "We're basically virtualizing everything we can with VMware to keep up with growth, but our tape solution just couldn't offer the protection we needed in this increasingly virtualized environment. That's where Avamar fits in. Avamar removed the virtual machine backup bottlenecks, which supports our virtualization strategy. It also helps us manage this VMware transition more efficiently by giving us a standard way to manage both physical and virtual backups."

In addition, Avamar is expected to generate significant cost savings. Since deploying Avamar, Virtua has eliminated 99 percent of its daily tape requirements. And by leveraging Avamar's secure WAN replication via existing network links, Virtua expects to be completely tapeless within three months.

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"We've established a new standard for monitoring backups and any failure gets re-run automatically," says Cathy Defreitas, Virtua's IS manager of Midrange Platforms and Data Center Operations. "If anything fails, Data Protection Advisor alerts us so someone on-call can be notified. It really helps us streamline our business practice, ensuring that backups are completed successfully and that our data is protected."

Bloemker adds, "Eventually we're going to use Data Protection Advisor to provide us with a complete management view over our backups operations, data archiving, server-based recoveries, and long distance replication with RecoverPoint."

EMC backup and recovery solutions better position Virtua for future growth, noted Thawley. "Because we have more room in our backup window, we can add more applications and servers without worrying about the impact. The infrastructure is more secure and the data is always there so we can implement projects faster. With EMC backup and recovery, we have more time and resources to focus on our ongoing mission of improving patient care quality and efficiency."

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