

IN BRIEF

Industry

- » Pump manufacturer

Challenges

- » Ever increasing amounts of data that must be protected
- » Distributed operations challenged legacy tape backup system
- » Nearly complete (95 percent) server virtualization posed backup challenges

Solution

- » Amazon Simple Storage Solution (S3) service for elastic, pay-as-you-go data storage
- » Whitewater cloud storage gateway that deduplicates, secures and accelerates backup to the cloud
- » Veeam Backup & Replication software for specialized backup of virtual environments

Benefits

- » No complex changes to existing infrastructure
- » Data deduplication reduces cloud storage costs by \$8.5K/month
- » Tape maintenance fee (\$5.6K/year) eliminated; two hours/day in IT time now put to better use
- » Up to 30 percent less time spent on backup processes
- » More robust and scalable backup and improved DR readiness



Pump Solutions Group

Whitewater and Veeam work together to reduce data storage costs and improve the protection of virtual machines

Pump Solutions Group (PSG) is a global manufacturing leader of pumps, and has world-class facilities in the U.S., Germany, China, India, and France.

Challenge: Replace physical with virtual while still ensuring data security

PSG operates several leading global pump brands, each of which originally had its own storage and disaster recovery (DR) infrastructure. After deciding to gradually integrate the discrete companies onto a common IT infrastructure, the company faced the challenge of managing the growing amount of corporate data while ensuring proper protection and storage.

"PSG has a corporate standard of storing information for seven years, and the volume of data increases every year," explains Jeff Rountree, global network manager for PSG. One PSG subsidiary, Wilden Pump, was seeing its data storage requirements grow at a rate of about a terabyte per year. This facility was also responsible for backing up its data and data from several other PSG facilities to an offsite location to support DR. Rountree decided to make Wilden Pump a test site for public cloud data storage.

"Wilden had multiple storage challenges, and we saw it as a good candidate for evaluating cloud-based storage," Rountree says. The backup process at the time began with disk-to-disk replication

The Whitewater gateway and the Veeam software work very well together to improve VM data protection.

using either Dell EqualLogic or HP SANs for disk storage. Data from the disk was then copied to tape. Managing the tapes required two hours of IT staff time per day. "Each tape had to be labeled, then we had to conduct random tests to make sure that tapes were readable, after that we had to drive them

offsite, and, when we did have to restore from tapes, we'd have to find the right tapes and then restore the data, which was extremely time-consuming," Rountree notes.

Cloud data storage would primarily involve virtualized applications and data since 95 percent of Wilden Pump's servers are VMware virtual machines (six VMware hosts and approximately 100 guest machines). Another aspect Rountree sought to improve was backing up the virtual machines.

"Having so many virtual machines, we wanted to be able to recover an entire machine," Rountree explains. "With the backup application we were using previously, the process required two steps: a virtual backup to get the VM image, and then a regular backup at the client OS level. This was particularly an issue with our Exchange and SQL Server machines since our previous backup application required a file-level backup to truncate logs. We really wanted a product that would let us back up and restore the entire VM image."

Solution: Cloud storage gateway and backup software tailored to virtual machines

PSG chose Amazon Simple Storage Solution (S3) service as its cloud storage provider at a cost of \$0.15/gigabyte/month. Even though Amazon's rate was competitive, with nearly 66 terabytes of data to store, it could have been a costly solution (approx. \$10K/month).

To reduce that cost, Rountree decided to deploy a Whitewater® cloud storage gateway from Riverbed Technology. The solution would reduce monthly storage fees by deduplicating the data being sent to

the public cloud. In conjunction with Amazon S3, it would also let Wilden do away with tape backup, and all associated costs and labor.

"Configuring the Whitewater gateway was simple and was completed in a matter of minutes," Rountree notes. To address the multi-step backup process for virtual servers, Rountree learned about Veeam Backup & Replication from one of his PSG colleagues in France. The solution, available from Veeam Software—an Elite VMware Technology Alliance partner—enables the recovery of an entire virtual machine or an individual object from any application or file system—all from the same image-level backup.

After evaluating the Veeam solution along with several other competing products, Rountree decided to implement it and had it up and running within a week of seeing the demo. "As far as the implementation, setup and testing, everything went very easily," he adds.

Benefits: Faster backups; affordable cloud storage costs; shift to OPEX

The Whitewater cloud storage gateway significantly reduces the monthly payments that Wilden Pump makes to its cloud storage provider. The amount of data the Wilden facility backs up is 65.8 terabytes. But thanks to the data deduplication performed by the Whitewater gateway (a rate of 7.51x for PSG), the amount of data sent to Amazon S3 is reduced to only nine terabytes. At the rate the company is paying for cloud storage (\$0.15/gigabyte), the difference amounts to \$8.5K/month, or more than \$100K in a year.

Eliminating the tape backup system has been another source of savings for PSG. Rountree estimates the costs of the tape backup system at approximately \$30K for the initial investment (tape libraries and tape media) and \$5.6K in annual maintenance and upkeep. That annual expense is no longer necessary, and the two hours per day that an administrator spent managing the tapes have been freed up for higher value work.

The company will also save expenses with its storage area networks (SANs). Using SANs for long-term storage is expensive, and now that Wilden Pump is storing data in the cloud, the company doesn't expect to purchase additional SANs. "Considering a SAN costs \$30,000 to \$75,000 or more, purchasing a SAN for long-term storage is a significant investment, and it does not protect data as well as Whitewater does with off-site replication of backups," he says.

With the Whitewater gateway, backups are faster; so full backups can be done more frequently. And it's now possible to perform multiple backups simultaneously. Rountree is evaluating how the company's backup practices will change now. "We used to limit how many backups we did at one time," he says. "I can do the same number now and do them faster, and we are thinking about doing full backups more frequently. With Whitewater, more backup work gets done in less time."

For Rountree, who understands that the ultimate purpose of protecting data is to be able to restore it when necessary, the Whitewater solution delivers better data protection. "A huge advantage of Whitewater is how quickly we can restore data now," he says. "With tape, you can lose part of a week's data depending on when you last backed up, which means you would lose the most recent information. With Whitewater, a full restore can be done within an hour or two, and can be done from any location."

Veeam Backup & Replication has streamlined Wilden's backups and eliminated the time-consuming two-step process the virtual servers previously required. "The fact that we can do one backup, and it provides the functionality of a full virtual backup and a file-level backup, is very attractive," says Rountree. PSG is now spending 20 to 30 percent less staff time on the backup process. "The savings could be more, but it's at least that," Rountree adds. "Our Exchange server is huge, and the Veeam software is saving us a lot of time with that alone."

The Veeam solution also includes an Instant VM Recovery function, which could come in handy in the event Rountree needs it. With it, he can run a virtual server directly from backup file. Similarly, with U-AIR (Universal Application-Item Recovery), Rountree can recover individual objects from any virtualized application without the use of additional agents, backups or software tools. "We have tested U-AIR with our Active Directory, Exchange, and SQL Server machines, and it works great."

For PSG, the Whitewater and Veeam combination is greater than the sum of its parts. “The Whitewater gateway and the Veeam software work very well together to improve VM data protection,” Rountree says. “We configured the settings on the Whitewater gateway according to Riverbed’s recommendation for Veeam, and we’re getting a great deduplication rate, so we’re saving a lot of money on cloud storage using that combination.”

Ultimately, the Whitewater/Veeam solution is letting PSG manage growth in the most cost-effective way currently possible, while also avoiding capital expenses in favor of operating expenses. The VMware environment allows the company to spin server capacity up or down as necessary without incurring capital costs. And by backing up to the cloud, the company has elastic, pay-as-you-go data storage capacity that delivers a strong return on their investment.

SUMMARY

With data storage requirements growing at a rate of 1 terabyte/year, and an aging tape backup system, PSG’s Wilden Pump facility became a test site for cloud data storage. Amazon S3 was found to have competitive rates (\$0.15/gigabyte/month) but even at that price, the cost to store 65.8 terabytes of information would have been prohibitive. The deployment of a Whitewater cloud storage gateway brought those costs back in line by deduplicating the data before sending it to Amazon. With a deduplication rate of 7.51x, the amount of data sent to Amazon is reduced to only nine terabytes—a savings of \$8.5K/month, or more than \$100K in a year. The Whitewater gateway and cloud data storage also made the tape backup system unnecessary, saving the capital costs of upgrading the system as well as the operating costs of \$5.6K (annual maintenance and upkeep) as well as two hours of IT staff time/day that were previously spent managing tapes.

The Wilden facility’s IT environment is 95 percent virtualized (six VMware hosts and approximately 100 guest machines). Backing up these servers was a time-consuming two-step process—a virtual backup to get the VM image, and then a regular backup at the client OS level. To streamline this process, PSG installed Veeam Backup & Replication. Now they can do one backup, which includes the functionality of a full virtual backup and a file-level backup, requiring 20 to 30 percent less staff time on the backup process. PSG finds the Whitewater/Veeam combination to be a very good solution for protecting virtual machines.

About Veeam Software

Veeam® Software develops innovative solutions for VMware vSphere and Microsoft Hyper-V virtualization management and data protection. Veeam Backup & Replication™ is the #1 VM Backup solution. Veeam ONE™ is a single solution for real-time monitoring, performance analysis, resource optimization and management reporting. The Veeam MP and SPI extend enterprise monitoring to VMware through Microsoft System Center and HP Operations Manager. Learn more by visiting www.veeam.com.



About Riverbed

Riverbed delivers performance for the globally connected enterprise. With Riverbed, enterprises can successfully and intelligently implement strategic initiatives such as virtualization, consolidation, cloud computing, and disaster recovery without fear of compromising performance. By giving enterprises the platform they need to understand, optimize and consolidate their IT, Riverbed helps enterprises to build a fast, fluid and dynamic IT architecture that aligns with the business needs of the organization. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com.



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