

A Global Pharmaceutical Company

Reducing IT infrastructure and storage costs and improving data protection for remote sites worldwide

Benefits

- Dramatically reduces remote IT infrastructure—for example, reducing the number of servers from nine to two
- Backs up data quickly and reliably—shrinking backup time by 75 percent or more, as well as slashing cycle time for offsite data replication
- Reduces storage costs by eliminating tape backup and slashing storage requirements
- Provides consistent, best practice environment for protecting, retrieving, and recovering data

Business overview

This Top 10 global pharmaceutical company (“GPC”) develops and markets drugs in several major therapeutic areas, including cardiovascular and oncology. Its industry-leading products are available to consumers by prescription.

Challenges

A highly decentralized organization, GPC also has decentralized IT operations. With over 250 sites and 100,000 employees scattered across the globe, developing and deploying a coherent IT strategy is a huge challenge. To help, the company classifies its IT customer base into two categories: enterprise-level data centers and smaller offices. The five sites in the first category support thousands of employees. The smaller offices support less than 500 employees. Both have the same basic IT and data protection needs, but on a much different scale.

Smaller offices worldwide at high risk of data loss

In the smaller sites, one or two IT people do everything from troubleshooting computer problems to signing for FedEx packages. “Remote IT staff do the best they can with the resources they have but adding cumbersome data backup and recovery on top of their regular tasks overextends them even further,” says the head of storage services at GPC. “We realized that the risk of irrecoverable data at remote sites simply could not be ignored.”

Lack of a consistent IT infrastructure compounds the problem. A typical local or regional GPC office might have seven to 10 servers hosting different types of applications—for instance, e-mail, directory, anti-virus, and file and print services. (One European site has five file and print servers, simply because it kept outgrowing server capacity.) GPC wanted to reduce the capital and operational costs associated with hosting these applications. Consequently, the company began searching for a cost-effective way to provide these critical applications as well as protect the site’s data at all times and enable quick data restoration whenever necessary.

EMC solution

To increase operational efficiency and consistency and improve protection of critical data at its smaller offices and regional data centers, GPC set out to create a standardized small office “virtual application pack” to be hosted on shared services and a common IT infrastructure. Deploying applications from templates within a virtual application pack would also accelerate future remote office deployments.



Business profile

Industry

Pharmaceuticals

Geographies

Operations at more than 200 sites spanning 100 countries on five continents

Business solution

Data backup and recovery

EMC products

EMC Avamar Virtual Edition, VMware ESX Server 3i

Deployment summary

Remote pharmaceutical operations offices and data centers worldwide are beginning to standardize on a virtual application pack running on VMware Infrastructure and using EMC Avamar for backup and recovery. Eventually the solution will be deployed at more than 20 sites. Broader deployment is planned for the future.

Sales office sites were targeted first because these sites all have a common set of IT needs. Their virtual application pack is based on VMware® technology and six applications—Microsoft Exchange, Active Directory, SMS, antivirus, file and print services, and EMC Avamar® Virtual Edition. GPC has rolled out the virtual application packs at several of these sites and expects to roll out 20 or more sites by 2009.

With patented global data deduplication technology, EMC Avamar reduces the size of the backup data at the source, before it is transferred across the network. Although other data protection solutions claim to have data de-duplication, single instance storage, and compression, the technology in EMC Avamar Virtual Edition stood out to GPC because it had minimal impact on the company's WAN and could be deployed on VMware as a virtual appliance. The combination of EMC Avamar and VMware also allows GPC to develop a powerful solution for protecting digital corporate assets in a small form factor.

Tremendous reduction in IT infrastructure costs

By creating virtual machines that reside on the same server, VMware enables GPC sites to consolidate servers, which significantly reduces IT infrastructure costs. For instance, the first site with a virtual application pack was able to reduce the number of servers in its data center from nine to two—a 78-percent physical server reduction.

Being able to eliminate tape storage also reduces IT expenditures. The company no longer needs to purchase tape libraries, tape drives, and backup software licenses, or pay fees to ship and store tapes off site. And local IT personnel save time because they no longer have to swap out tapes and upgrade backup software, not to mention deal with cumbersome data recovery from tape or tape failure. Unlike tape solutions, Avamar backups can be quickly recovered in just one step.

“Once we started adding up all the costs of traditional tape backup, we realized that the total cost to protect one terabyte of data for five years was significantly less with EMC Avamar,” says the head of storage services. “When we compared the total cost of ownership of EMC Avamar to that of traditional backup, we found that EMC Avamar costs much less, yet provides exponentially better data protection and service levels.”

Fast, reliable backup that takes up less space

The company's original tape backup solution would probably have overtaxed the virtual machines because it would have had to move full and incremental backups using the same set of shared resources—the server's CPU, NIC, memory and disk storage. EMC Avamar, on the other hand, quickly and efficiently protects the virtual machines by sending only the changed segments of data. The more virtualized servers that are backed up by Avamar, the greater the commonality of data and subsequent reduction in the amount of data that needs to be backed up.

“After the initial full backup with EMC Avamar, we have found that only one to two percent of the total data changes and needs to be backed up each day,” says the head of storage services. “The resulting reduction in backup time is astounding.” For example, backup of a typical site's Microsoft Exchange environment used to take one hour now it takes 15 minutes—75 percent less time. Backup of file and print servers used to take five and a half hours; now the process takes only 11 minutes. Furthermore, in the past, backup was typically the biggest resource hog for these sites, but, with Avamar, backup has minimal impact on the LAN.

That's not the only time savings. With Avamar, the time required for replicated data to be safely offsite for disaster recovery purposes has been slashed as well. The total process—from running the backup to manual tape handling and shipping offsite—totaled six and a half hours for a typical Exchange or file server backup. With Avamar backup and WAN-based replication, however, file server data is safely offsite within 10 minutes of being backed up.

Less data to back up also translates into dramatically reduced storage hardware requirements. For instance, at one site, backing up 3.4 terabytes of data, including incremental and full backups, used to take close to four terabytes of space; now it takes only 500 gigabytes—an 85 percent reduction.

Improved operational recovery and preparedness

While slashing the amount of IT infrastructure required at the sites where it is has been deployed, the virtual application pack has also improved the ability to recover data from disk for longer periods of time. Thanks to Avamar, these sites can now set the default retention period to 60 days, as opposed to only 15 or 30 days. Data restoration using Avamar is also much faster than from tape. “Until EMC Avamar came along, the best practice infrastructures for data retrieval and for data recovery looked quite different,” says the GPC storage services head. “In Avamar, however, those differences start to disappear.”

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Head of Storage Services

With the virtual application pack, GPC is creating a best practice environment for protecting, retrieving, and recovering data. Such an environment further mitigates risk by improving the company’s ability to comply with regulations and respond quickly to disasters. Since the local Avamar environment is completely replicated, the site’s data is always available, whether for employees or auditors. The company is also testing use of Avamar to replicate the encapsulated virtual machines to a central IT hub for business continuity and disaster recovery.

The flexibility and scalability to start small and grow big

Within GPC, IT funding and resources are based on regional budgets, not a central pool of money. EMC Avamar has given the company the opportunity to introduce a new backup and recovery solution without spending a fortune, and to scale up as needed and within budget constraints. “With EMC Avamar, we can do a proof of concept cost effectively, and then scale from there—whether that means staying with a software-only EMC Avamar solution or turning to EMC Avamar Data Store,” says the GPC storage services head.

Using EMC Avamar inside a VMware guest means GPC can also quickly scale its data replication and recovery environment as needed. It also has the flexibility to create hub-and-spoke or inter-site data replication and fault tolerance. Pilot tests using Avamar to replicate data off-site for disaster recovery have been very successful and not adversely impacted WAN performance.

GPC is also investigating the use of Avamar in other parts of the company, such as to provide backup and recovery for more than 200 research and development PCs. Being able to quickly restore the information stored on lab PCs to its exact state on a given date is a critical business requirement for the lab, but it has to be done in a way that doesn’t overload the network. “We can’t spend \$10 million on a \$1 million problem, which is what would happen if we had to solve this problem the traditional way, with tape backup,” says the storage services head. “EMC Avamar could be the answer.”

Eventually the company could use EMC Avamar in its enterprise data centers, as well, to reduce storage requirements for hundreds of terabytes worth of data and greatly facilitate backup and recovery.

Summary

By implementing virtual application packs based on VMware Infrastructure and EMC Avamar, this global pharmaceutical company is providing its remote sites with a consistent, best practice environment for protecting, retrieving, and recovering data—all while reducing IT infrastructure and storage costs.



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