

Oklahoma Medical Research Foundation

Top research institution grows storage for IT and Science with SwiftStack

About OMRF

Oklahoma Medical Research Foundation (OMRF) is a non-profit biomedical research institute located in Oklahoma City.

Over its 70-year existence, it has proven itself to be one of the nation's most respected scientific institutions focusing on critical medical research areas such as cardiovascular disease, cancer, aging and lupus. OMRF scientists have produced more than 700 patents, three FDA-approved drugs, and a significant Alzheimer's disease discovery.



Challenge

OMRF is an institution that relies on grants and donations, which made it difficult to plan a multi-year budget for computing infrastructure. Part of planning a multi-year IT budget required predicting storage usage. Unfortunately it isn't easy to predict storage consumption rates, so OMRF had to purchase a large amount of storage up front that sat idle and underutilized until needed. For OMRF this predictive-growth purchasing resulted in infrastructure investments that wasted time and money.

Spotlight

USE CASES

- Cost-effective storage and retrieval of large amounts of data for IT and Science Research
- The removal of expensive tape library and tape maintenance from the support equation

RESULTS

- No vendor or hardware lock-in
- Easy to manage and easy to scale solution
- Minimal staff required to implement and to maintain

HARDWARE

- 9 storage nodes with 279 SATA drives, mixture of 3TB and 6TB drives
- High-density Supermicro servers with available slots to add capacity

STORAGE

- Currently 1.05 PB raw, 350 TB usable
- Scaling 100 TB usable with research
- Planning new storage region for DR

One of the challenges facing all research institutes is that scientists keep data forever, so storage requirements continue to grow and will never decrease. System administrators must maintain the data because scientists might need to access and reprocess the data at any time.

Hardware refreshes that occurred every three to five years also put undue stress on budgets. The cycle of plan, purchase, expand, plan, refresh, expand...was just too much for a small staff and for limited funds. The never-ending cycle created headaches for the foundation including rapidly growing storage needs, scientific data and user data segmentation, and additional staff just to manage the large storage arrays.

But the challenges didn't stop with storage of acquired data or data during processing; a new challenge for OMRF was how to store archived data long term. Genomic data has to be stored indefinitely because some data might require future reprocessing. And for rare samples, or samples that no longer exist, the associated data must be retained. OMRF was using tape for data backup, archive and restore. The expense and management for tape was prohibitive. Tape maintenance required two to four hours per week in labor, \$80,000-\$120,000 for a tape library, an average of \$30,000 per year for tape media costs and \$1,000 per month for additional storage for the tape media.

Solution

OMRF required a solution that it could grow with and expand as needed without the added requirement of expensive predictive purchasing. It needed a scalable solution that had the capability of using commodity hardware, instead of a proprietary solution that would result in vendor lock-in or in solution long-term lock-in. In essence, the staff searched for a solution that was open, scalable, easy-to-use, easy-to-maintain and could grow as needed without having to invest a lot of money up front in storage. Additionally, OMRF needed to implement the solution without expanding its current staff numbers.

For OMRF, one of the unexpected benefits from the SwiftStack solution was the collaboration between science and administration. For two sides of the house that are often at odds with each other over spending, budgets, and priorities, SwiftStack brought the two together toward a common goal.

OMRF IT managers first heard about a solution that met its criteria from the Association of Independent Research Institutes (AIRI), a group of independent, not-for-profit biomedical and behavioral research institutes. During the storage solution investigation stage, AIRI members informed OMRF about SwiftStack, which had provided a cost-effective, pay-as-you-grow solution to many of them.

After initial consulting and solutioning, OMRF found that it could integrate the SwiftStack software into their already existing environment without disruption. SwiftStack worked seamlessly with OMRF's existing Commvault backup solution; implementing the Cloud Library was easy and from start to finish the setup took approximately 20 minutes to complete. Expanding storage capacity was as simple as adding a new disk to any system. Adding disks to OMRF's three zones for replication was and continues to be quick and painless.

Find Out More

For more information on SwiftStack's features, support, pricing, and product documentation, visit www.swiftstack.com.

"What sold me on the SwiftStack solution is the cost savings, pay-as-you-grow, and that it meets our growing demands in a cost-effective way without adding staff."

—Brent Keck, Chief Information Officer OMRF

Savings

SwiftStack integrates easily into organizations' existing infrastructure and installed software, avoiding the need for costly and cumbersome infrastructure changes, such as purchasing huge SAN arrays. The pay-as-you-grow model provides customers with an economical way to expand capacity as budgets allow adding as little as a single disk at a time. Since SwiftStack is a software-based solution, there are no hardware refresh requirements, customers can use commodity servers, and scale as needed without having to purchase more capacity than the users currently require.

Deployment and Future Plans

Originally OMRF deployed 250TB of capacity across six nodes and included repurposing some existing hardware. Each node is configured as a node and as a proxy. A 10Gb network connects the nodes. After approximately 90 days of deployment, the original 250TB's consumption stands at 89 percent or 223TB and is split between research needs and traditional IT needs. 150TB of that space is used by the Commvault backup system.

The ongoing benefit of SwiftStack's solution is that a system administrator doesn't have to continually tweak or optimize storage parameters in order to maintain an efficiently operating storage infrastructure. Ongoing maintenance, software updates, and expansion are easy and painless to perform. The time and resources typically spent on training classes, learning curves, and storage maintenance activities can now be leveraged for enhancing user experiences and for maintaining system health.

OMRF's future plans include an offsite replication zone for disaster recovery.