



SUCCESS STORY

Higher Education and Research

Syracuse University
Information Technology Services (ITS)

SYRACUSE UNIVERSITY | OPPORTUNITY

NetApp solutions helped Syracuse University lower storage costs for massive and growing datasets while improving both school operations and academic research.

Syracuse University Ups Operational, Research Outcomes with NetApp Solutions

Syracuse University is a private research institution that aspires to be a preeminent and inclusive student-focused research university, preparing engaged citizens, scholars, and leaders for participation in a changing global society. With the help of exceptional data management capabilities, the university has been able to improve day-to-day operations, build a more sustainable model for substantive data growth, and help university scientists contribute to Nobel Prize-winning research.

Decreased

the number of data storage arrays (drive-based units) with a six-to-one ratio

Lowered

storage costs for important but less active research data

Improved

IT budget sustainability for the university as a whole

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“All of a sudden, what was done on a USB drive in the faculty member’s office was now in a data center running on high-performance drives, easily accessible for anyone who needs it, at any time.”

Eric Sedore
Chief Technology Officer, Syracuse University

Data is at the core of Syracuse University. The institution’s ability to use data effectively is crucial to its success as a student learning community, advancing scholarly pursuit and exploration through research. To deliver the best possible value across those pursuits, the Syracuse University Information Technology Services (ITS) group embarked on a multiyear investment in the development of a single, unified data platform to serve diverse stakeholders. That vision is now reality, as are ongoing benefits with the group’s continued investment in data fabric.

THE CASE FOR MULTICLOUD DATA FABRIC

The management of data is a rising challenge for colleges and universities. This is true for school administration and student services, as well as for scientific and academic research.

In the case of Syracuse University, rapid expansion of these data sets, and their management needs, had begun to strain the university’s IT management system and budget.

“As data growth and affordability became an issue, storage and budget sustainability became our highest priority,” said Eric Sedore, chief technology officer at Syracuse University.

Sedore and his ITS colleagues had determined two needs. First, the school needed a more affordable way to store and access diverse sets of data for both administrative and academic use. Second, it needed a unified platform on which to move data between private and public cloud storage, as efficiently and seamlessly as possible.

The school had commenced to build what would become a multicloud data fabric. This was critical because, as Sedore said, “data is the lifeblood, or core, of what we do.”

Ultimately, this would become a tiered data storage strategy built on the native NetApp® ONTAP® capabilities—a strategy that routes data according to specific tiers based on performance and availability requirements. But it didn’t all happen at once.

OPTIMUM PERFORMANCE

The university began its journey by addressing operational needs. This would become the first chapter in the building of a unified, multicloud data fabric.

To start its journey, Syracuse University selected NetApp all-flash arrays. University data administrators identified the solid-state storage system as the best mix of performance and affordability for managing operationally critical data and applications. “These are the highest-performing applications where we could not afford any chance for a nonperformant response to an I/O request,” Sedore said.

Indeed, all-flash systems are often used to house enterprise resource planning (ERP) functions and transactional database tiers that require high-end performance, for teaching and learning functions, student services, or peak registration season, as in the case of Syracuse University.

The solution met a demanding set of needs and expectations, Sedore said, especially in terms of performance (speed) and availability.



“We have over a petabyte of data that we’ve pulled in out from under the desks of researchers and into the data center—giving researchers data performance, reliability, and availability.”

Eric Sedore
Chief Technology Officer, Syracuse University

SUSTAINABLE STORAGE

With its critical operations data infrastructure in place, Syracuse University ITS next focused on the vast amounts of research data that needed to be stored, protected, and managed, but at a lower cost than what’s possible with solid-state, all-flash arrays. The university went with NetApp FAS, or fabric-attached storage.

“We needed a dynamic mix,” said Sedore, referring to NetApp AFF for high-performance needs and NetApp FAS for storage affordability.

FAS utilizes drives rather than solid-state gear and is a less expensive option. It runs on the same ONTAP software as other NetApp storage systems. It was ideally suited, and priced, to store the massive research data that is critically important but not operationally critical.

This data supports research and academic work in several fields across the institution, including science, technology, engineering, and math (STEM), as well as social sciences and the visual and performing arts. In fact, with the help of this technology, Syracuse University scientists contributed to Nobel Prize-winning research that proved the existence of gravitational waves.

As the new storage system proved successful, researchers took advantage of its availability and capacity to effectively store, crunch, access, move, and share data to improve both effectiveness and collaboration.

“All of a sudden, what was done on a USB drive in the faculty member’s office was now in a data center running on high-performance drives, easily accessible for anyone who needs it, at any time,” Sedore said.

NETAPP ONTAP

The key to any data management system is data management software—NetApp ONTAP in this case.

“ONTAP is what ties our different storage units into a cohesive, multicloud data fabric,” Sedore said.

One key capability of ONTAP is that it enables dynamic tiering, the ability to route data automatically to appropriate storage tiers based on an identified performance need and cost. This intelligent system maximizes performance for critical data and applications, minimizes storage costs for relatively cold data, and reduces work for ITS staff.

“We got rid of all the manual moving around of data to where ‘terabyte Tetris’ became just a hashtag of the past,” Sedore said.

What was previously a work-intensive, manual exercise is now a data stream that flows seamlessly to optimal storage tiers.

“We’ve moved it from a primary focus and worry to a place where we have confidence in the outcome we’re going to get,” Sedore said.

In tying together the university’s private and public cloud data centers, ONTAP has helped improve access and availability. It has also enabled data replication for easier movement and better protection across data centers.

“If you put data into our data fabric, it’s going to be replicated, backed up, off-sited. We’re going to make sure that we can bring it back for you,” Sedore said.

ADDITIONAL BENEFITS

According to Sedore, NetApp's combined storage and software system was straightforward to implement and manage, and its value will increase as NetApp continues to release product innovations.

"It's allowed us to be more responsive to the needs of our communities without having to wait for our data management vendor to catch up with what we're thinking about, such as new things in the storage realm," Sedore said. "We've evolved from storage as a pain point to storage as an asset for what we do."

SOLUTION COMPONENTS

NetApp AFF

NetApp FAS

NetApp ONTAP

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