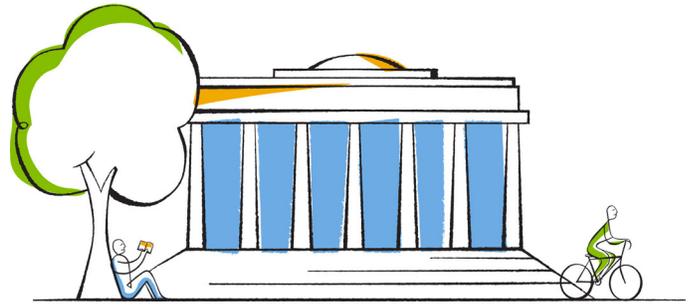




NetApp®



## At-A-Glance

# NetApp Solutions for Higher Education

Smart, cost-effective storage and data management solutions that let you do more with less

### KEY BENEFITS

#### Reduce TCO

- Buy 50% less storage.
- Save 50% on power, cooling, and space costs.
- Lower administrative costs.

#### Expand Services to Students and Faculty

- Support virtual learning/digital content strategy.
- Provide a secure mobility and BYOD environment.

#### Enhance the Use of Big Data/ Research

- Provide high-performance computing and data analytics.
- Use data to help students succeed in school.

#### Support Public Safety/Cybersecurity

- Provide high-performance storage solutions for video surveillance.
- Protect sensitive student data.
- Meet compliance regulations.

#### Get Multicloud Data Mobility

- Safely and securely expand your cloud choices to meet your needs.
- Achieve seamless data management across public and private cloud resources.

#### Enable Service Continuity

- Non-disruptive operations—even during tech refreshes and upgrades.
- Easily scale to support unpredictable growth.
- Recover from any disaster with no data loss.

Almost every day it seems that students and faculty increase their demands on the IT organizations at higher-education institutions. While the expectations increase almost exponentially, IT budgets and technological resources do not. You are being asked to do more with less—on a daily basis. If your institution is like most, you simply don't have the budget to hire more IT staff or purchase new storage systems. On the other hand, trying to make do with your existing resources can lead to endless problems—even disaster.

Most higher-education institutions spend 40 to 50% of their technology budget on storage. That's actually good news. With the right data storage system, your school can consolidate technology, improve system performance, and free up precious resources. In fact, data storage is one of the most effective ways to centralize and manage your technology needs—and save money.

NetApp can be your partner in helping you achieve these goals. We are committed to delivering the most efficient, secure, cost-effective storage and data management solutions to meet the needs of higher education. Our teams will work in partnership with you to solve your IT challenges so you can get the most benefit from your

technology investments. We will help establish an infrastructure that you can deploy in minutes instead of weeks—without sacrificing performance or availability—and that allows you to devote resources to more critical tasks.

We are the #1 storage provider to the federal government, and the NetApp® Data ONTAP® system is the world's #1 branded storage operating system<sup>1</sup>. Forty of the nation's top fifty colleges, universities, and institutes rely on NetApp daily for the delivery of instructional content and for advanced research efforts that shape tomorrow's leaders and drive innovation. With NetApp as your technology partner, our unified storage solutions can help:

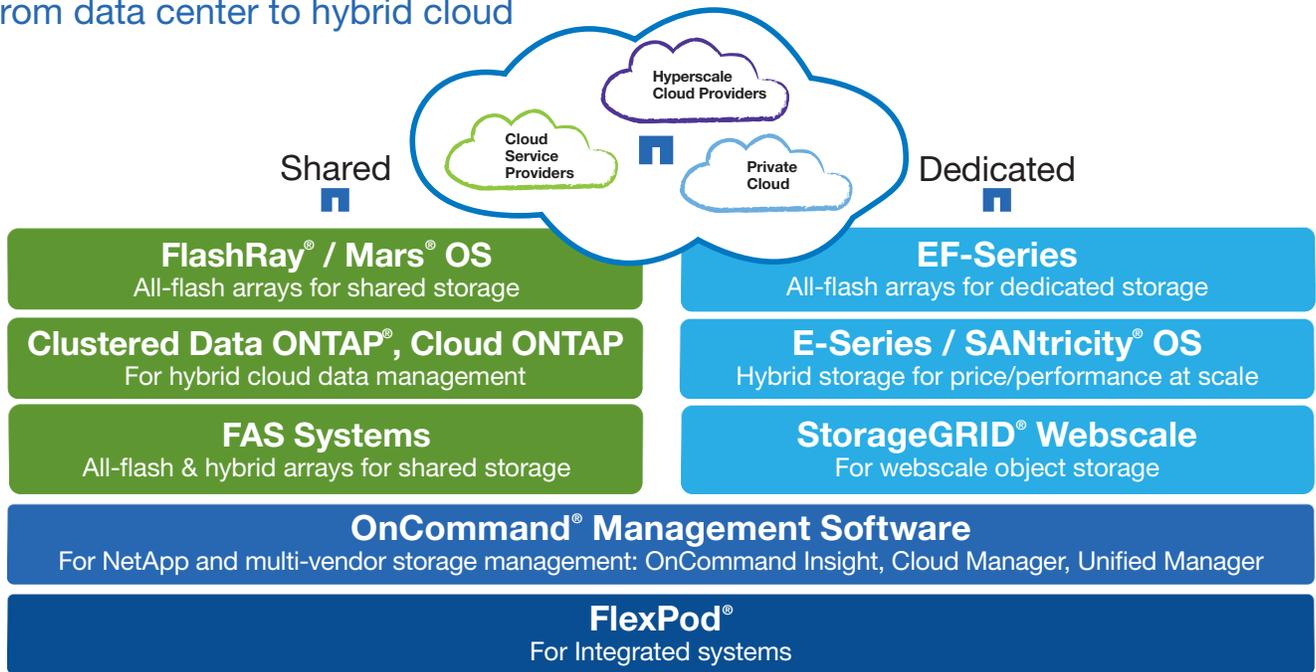
- Reduce storage requirements by up to 50%, guaranteed<sup>2</sup>.
- Cut the number of systems in the data center by 50 to 75%.
- Provide simplified storage solutions for mobile users and consolidate infrastructures.

1 - IDC Worldwide Quarterly Disk Storage Systems Tracker 2014 Q3, December 2014 (Open Networked Disk Storage Systems revenue)

2 - Go to [netapp.com/guarantee](http://netapp.com/guarantee) for complete details.

# Market Leading Portfolio of Innovation

## From data center to hybrid cloud



### Your Data, Any Cloud

Today, higher-education institutions such as yours are virtualizing data centers and desktops; consolidating servers, floor space, and HVAC resources; and using the cloud for critical applications. NetApp can help with all of these transitions.

By moving some of your operations to the cloud, you can conserve server and floor space, reduce HVAC use and energy costs, and keep renovation costs down when you need to upgrade your data center. Your staff can offload the management of noncritical processes and keep their focus on your organization's key objectives. Cloud computing enables a service delivery model that lets you automate processes, meter usage, and create showback and chargeback models.

NetApp can be a valued partner in taking advantage of the cloud. We offer the infrastructure for whichever type of cloud best fits your needs. We can also help you seamlessly manage data across private, public, and hybrid cloud resources—including hyperscale cloud providers. With NetApp, educational institutions such as yours can:

- Easily store, move, and secure data across all cloud environments.
- Get enterprise-grade data management plus the economy of the public cloud.
- Reduce data storage requirements by up to 50%, guaranteed.
- Deduplicate existing data and pare it down by at least 35%.
- Deploy, manage, and optimize virtual desktops, applications, and user data from a central console.
- Back up all virtual desktops and user data.
- Choose from 175+ NetApp cloud service provider partners.

### Secure Mobility— Even in a BYOD Environment

Educational institutions of all kinds are facing a rise in BYOD initiatives; students and faculty are using a variety of mobile devices to access instructional materials in the classroom, across the campus, as well as from home. BYOD is a valuable tool that can enhance educational opportunities, but it often increases your operational complexity. It's always a struggle to balance the need for students and employees to use their own devices with concerns about system security and data restrictions. You need to not only provide access from various devices, but you must also address similar complexities within the hardened firewall.

Our mobile information-management solutions offer secure and reliable data access, file sharing, and collaboration. With NetApp as a partner, you can secure sensitive data with encryption, authentication, access control, and logging capabilities, helping to prepare your institution for a demanding mobile environment. We provide agile, scalable storage solutions to help you address the expanding needs of digital content delivered from a wide array of devices.

### Handling the Data Explosion— Data Analytics

Many schools are facing an explosion of data. Digital learning, online portals, student systems, and other trends create huge quantities of data that must be easily retrievable and usefully analyzed. Many schools also need analytics tools that provide insights to help students remain in school, stay on track to graduate, and increase their learning achievements.

We can help you establish control of your data, allowing you to tackle bigger challenges and turn masses of information into actionable data. NetApp offers distributed content solutions, including repositories that let you manage big data intelligently across multiple buildings or campuses. Our content repository solutions provide exceptional data scalability, enterprise reliability, and intelligent object management.

## Research Support

Colleges and universities that conduct scientific research need to store massive quantities of information. However, it isn't enough to have sufficient capacity. IT and research staff need to make sure that the information is secure, is backed up, and can be easily accessed. Much of this data is unstructured, making it a greater challenge to categorize and access. Often this vital information is also siloed in many different locations and departments throughout a campus. These siloes can slow down information retrieval, create service interruptions, and result in lost data.

A centralized system for a school permits the IT department to support and scale up one system, allowing greater efficiency and cost savings. This underlying infrastructure can enable IT departments to store and manage growing volumes of data while permitting researchers to quickly retrieve and easily share data.

NetApp helps research universities streamline high-performance computing deployments with a preconfigured, pretested storage solution that is easy to deploy and manage. Built on proven Lustre parallel-file-system technology, the NetApp High-Performance Storage solution can analyze data and solve complex problems to deliver simplified management and extensive analytics.

You can start small and expand in 2U or 4U increments—and scale bandwidth and capacity independently—which enables faster results with lower TCO. NetApp solutions also eliminate the barriers to entry, allowing universities to benefit from the power of high-performance computing to solve complex research problems.

Our solution is purpose-built for high-performance computing workflows to increase the effectiveness and flexibility of your end-to-end processes. Analyzing data collected over time can help you understand usage by user, plan more accurately, and optimize overall system performance.

NetApp leverages fast data collection to enable application-driven tuning to help you achieve greater operating efficiencies. You benefit from an infrastructure that delivers maximum storage capacity with excellent performance.

## Digital Content

There's no doubt that the digital classroom is becoming an increasingly bigger part of education, meaning that education now exists 24/7. Online learning is highly interactive, so you must supply students and faculty with reliable connectivity to the Internet and cloud-based services. You may also be seeking solutions that allow students to engage in group conversations, brainstorming, gaming, or other classwide interactions. However, this growing virtual-learning environment makes heavy demands on your IT infrastructure, which must maintain high availability for all applications and resources.

We help educational institutions of all sizes streamline high-performance computing deployments with preconfigured, pretested storage solutions. Our solutions leverage real-time data collection to enable application-driven tuning. You benefit from an infrastructure that delivers maximum storage capacity with excellent performance, enabling you to achieve faster results, improve efficiency, and reduce operational costs.

## Cybersecurity: Protect Against Unauthorized Access

Recent incidents have demonstrated how a security breach can expose the sensitive personal data of hundreds or thousands of students and faculty. Such events can create huge legal and financial difficulties—and bring your operations to a halt. To help keep your critical data assets secure, our systems offer robust encryption, authentication, access controls, and logging capabilities—all built into the clustered Data ONTAP operating system.

However, we understand that educational organizations are always balancing the need to access data with the need to protect that data from attacks. We take a comprehensive approach to cybersecurity by providing technologies and solutions that enable data to be protected and trusted, while still remaining accessible.

## Enable Service Continuity

Today's colleges and universities rely on critical systems to function. We recognize that any amount of downtime is unacceptable. In field-measured uptime, our storage systems achieve

greater than 99.999% availability. But simply making data available is of little value if the data isn't protected. With clustered Data ONTAP, you can back up data in minutes and recover in seconds. High-availability, disaster recovery, backup, and compliance services are all built into a single storage platform and are available on demand. You can quickly roll out new services or adjust the level of coverage needed as recovery and compliance objectives change.

## Easily Scale to Support Unpredictable Growth

Your data is growing at unpredictable rates. Our infrastructure offers seamless scalability to meet the changing needs of every department and application—without disrupting operations. Your days of overprovisioning and wasted storage space are over.

## Partner with an Industry Leader

When you work with NetApp you gain a true partner—and access to our extensive enterprise data management expertise, innovative technologies, and best practices. Our teams work in partnership with you so you can accelerate the return on your infrastructure investments and get the most benefit from them. Our alliances with organizations such as EDUCAUSE and the Center for Digital Education prove that you will be working with an industry leader.

## NetApp Academic Alliances Program

Through the NetApp Academic Alliances Program we help colleges and universities infuse storage industry content and best practices into their classes. Our program provides faculty and students with highly relevant instructional materials, hands-on labs using industry-leading storage management software, and real-world case studies. These resources allow colleges and universities to enhance their students' value in the job market with industry-recognized NetApp Certified Storage Associate certification—at no cost to qualified institutions.

## Customer Story: University of California, Los Angeles (UCLA)

UCLA is a top-ranked public research university with a mission to create, disseminate, preserve, and apply knowledge for the betterment of the global society. The university's Institute for Digital Research and Education (IDRE) is dedicated to research using high-performance computing (HPC), data visualization, and analysis of large datasets.

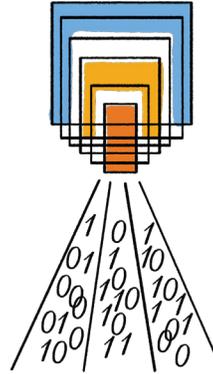
IDRE is efficient, maintaining a 95% utilization rate and running more than 20 million compute jobs every month. As datasets grew larger, performance slowed when the cluster was under heavy load. Supporting NAS devices were becoming a bottleneck to results.

After evaluating a variety of storage solutions, IDRE chose a dual-controller NetApp E-Series storage system connected by Fibre Channel to a two-node NetApp V6290 storage system to provide a NAS gateway.

Virtualizing the high-performance E-Series system with the V6290 gives UCLA all the benefits of NetApp FAS series storage, including clustered Data ONTAP operating system, which allows UCLA to keep its NetApp storage available to users while performing maintenance, adding or upgrading controllers, or load-balancing for capacity or performance.

## UCLA Speeds Time to Market for Research with HPC Infrastructure on NetApp

- Accelerate time to market for research



- High reliability and 24/7 availability
- Cut storage footprint by one third

### Benefits

- Accelerate time to market for groundbreaking research
- Offer high reliability and 24/7 availability to researchers
- Scale storage without downtime or performance degradation
- Reduce storage footprint by one-third, conserving space and power

### About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future. Learn more at [www.netapp.com/edu](http://www.netapp.com/edu).

[www.netapp.com](http://www.netapp.com)

“We needed a true partner to help us succeed and believe we have that with NetApp. The team listened to our needs, proactively offered their HPC expertise, and collaborated with us to make sure the solution met our peak performance requirements for research.”

### Scott Friedman, PhD,

Chief Technologist for Research Computing,  
UCLA IDRE



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