



SUCCESS STORY  
Education



CALIFORNIA STATE UNIVERSITY, CHICO | PROBLEM SOLVED

To empower students and university departments that rely on the university's technology in every moment, California State University, Chico counts on the speed of NetApp® All Flash FAS.

# Serving Students Faster with All Flash FAS

Today's college students use their mobile devices constantly. They want instant access not only to social media, but also to campus services. For the approximately 17,000 students at California State University, Chico (Chico State), technology is essential. "Today's students are highly technically savvy. They want more, they want it faster, they want it better," says Ray Quinto, associate director of Computing and Communication Services (CCSV). With each new incoming class, the IT team works to keep pace and meet their needs faster and, because the university is part of the 23-campus California State University System, within the constraints of the state's budget.

Response time reduced from

**1.5 mins.**  
▶ **seconds**

Server provisioning takes

**1 DAY**  
instead of weeks

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“When we make adjustments, we no longer have to wait 10 minutes to recover the server and start testing again. We barely have enough time to drink our coffee before it’s back up and ready.”

Mike Wood

Senior Analyst Programmer, Enterprise Applications, California State University, Chico


Students aren’t the only ones with high expectations. Fortune 500 companies that recruit graduates value Chico State’s collaborative teaching style, which is powered by technology. “The ability to collaborate is something the people who are seeking qualified and skilled employees look for,” says Mike Wood, senior analyst programmer for Enterprise Applications. “And you just can’t do that on paper anymore. You have to set up systems that will enable that kind of effort.”

All university services—whether during the initial admissions process, a move to on-campus housing, or classroom collaboration—rely on IT systems that run smoothly. It takes a nimble IT team to satisfy the needs of so many. NetApp all-flash solutions enable CCSV to meet these expectations.

### SHIFT TO VIRTUALIZATION

The University IT funds vary from year to year, compelling CCSV to spend cautiously. Says Quinto, “Because our budgets are unpredictable, we’re risk averse. We

choose providers that have been around for a while and that we’re familiar with. Choosing NetApp for our virtualization and storage needs was a no-brainer.”

In 2009, when Chico State migrated from physical servers to virtual machines using VMware, CCSV realized that centralized backend storage was essential. The new storage would have to integrate into their existing data center network and support Oracle Real Application Clustering environments. NetApp provided the solution. Then and now, virtualization and storage needs drove much of the IT department’s work. Today, the team runs 400 VMs from the NetApp AFF8060. Its many new campus initiatives require new virtual servers. Redoing its identity management system alone called for 16 servers for test, development, and production, says Quinto. “We can provision servers a handful at a time in a day or two instead of taking weeks. That’s how quick it is to turn around workload and compute.” 

### BUSINESS BENEFITS

- Save between 100 and 200 business days per year of staff time through faster document access
- Double the speed of application and transcript request processing by admissions staff
- Patch and reboot servers in seconds instead of minutes
- Receive large electric company rebates due to power savings in virtualized data center
- Switch 80% of servers to the all-flash array in less than a week

## PROCESSING OF APPLICATIONS

University systems process **35,000** applications per year.

### THEY SAVED

**14-15**  
SECONDS PER PAGE

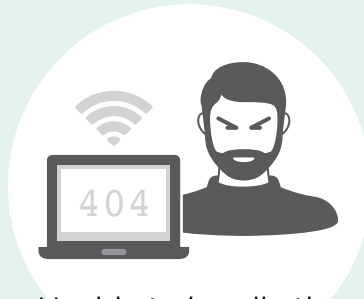


**100-200**  
BUSINESS DAYS EACH YEAR

## HOUSING RESERVATIONS

Each April, demand on the university's web app spikes.

### THEN



Unable to handle the volume, leading to connection drops

### NOW



All-flash array handles all 2,000 registrations with no drops

### NEED FOR SPEED AND RELIABILITY

Housing reservations challenge the technology team every year. CCSV's "Black Friday" comes in April, when incoming freshmen use a web app to choose dorm housing on a first-come, first-served basis. The university's previous system couldn't handle the influx of requests on the server, inevitably leading to connection drops that resulted in angry students and parents who couldn't

get dorm rooms. No longer. "This year with all-flash array the system handled all 2,000 registrations and nobody got dropped because the servers responded so quickly," says Quinto.

NetApp All Flash FAS also minimizes performance issues caused by the write-intensive nature of the university's data. For example, a recent program upgrade created a lag of 1 to 1.5 minutes for server

response time after a user logged in. [Once the IT team used VMotion to migrate servers off an old system onto NetApp flash using the same VMware environment, response time was reduced to seconds.](#)

Flash technology, too, has improved workflow speed for the university's paperless systems, particularly for admissions. The department processes 35,000 multipage application documents annually. Spinning disks could manage only 160 IOPS, while AFF enables the baseline 8,000 IOPS the group needed, and even more. Faster processing speeds save the department 14 to 15 seconds per page, resulting in savings of 100 to 200 business days every year. It's also improved workflow and speed for CCSV, especially in their test environments. Says Wood, "We're running so much more quickly now. When we make adjustments, we no longer have

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## PROTECTING AND PROVIDING RESOURCES

Implementing the flash system resulted in happier students and employees, and a greener campus. "Part of our job is being good

custodians of the state's resources," says Quinto. For the team, that means making the most of the budget given to them, speeding up the workflows for university staff, and rising to the technological challenges a new generation of students sets before them.

Quinto sums up IT's mission, "We're really here to serve our students—to get them through college and

to society as productive citizens because we need them for the future success of our state and our world."

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## SOLUTION COMPONENTS

### NETAPP PRODUCTS

NetApp AFF8060

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