

# Xsan Powers Student Filmmakers' Success

Albany, CA — Every so often, people wonder if Jeff Castle went a bit overboard. But when asked why he purchased extremely sophisticated hardware and software tools — including Xsan, Final Cut Pro, and Power Mac workstations — for Albany High School's Regional Occupation Program (ROP) classes in video production, Castle has a ready answer: "A high school is the perfect place for efficiency. Where else do the employees show up for only 57 minutes each day?" It's hard to argue with Castle's logic. And, since ROP video enrollment has tripled since 2002, it's hard to argue with his success.

Before Castle assumed his post as director of video and broadcast production at Albany High School, one small class spent the majority of the year producing a video yearbook. But the analog equipment used in the classes was mostly elderly and in ill repair, and inspired little creativity.

"The students just weren't excited about what they were doing," Castle recalls of his first year. "They'd go out and shoot something that looked like a home movie, and then try to edit it on one of the three computers we had. It just wasn't feasible, and the students weren't motivated to work on their projects.

"They finally told me that they want to make films," continues Castle. "Ever since then, I've been getting rid of the old analog, tape-to-tape stuff, and building a cutting-edge digital studio. Thanks to the Mac technologies we have in place now, we've gone from 20 kids who weren't thrilled to be here, to 90 kids who show up at 7:30 in the morning and won't leave until I kick them out at midnight. It's amazing!"

## An Administrator's Nightmare

With a Masters in Education and seven years of experience in the public and nonprofit sectors, Castle did not consider himself a filmmaker. But he did have an all-too-familiar understanding of what wasn't working at Albany High School.

Says Castle, "In any computer environment, the most efficient way to work is to have centralized storage and a file server. But each of our workstations was an island: If a student was logged on and experienced a problem, I'd have to log him or her off, troubleshoot the issue, and log the kid onto another computer. Then when they were done with their projects, they'd have to store them on an external hard drive, I'd have to put the projects into some sort of timeline, and then print them all to video. As an administrator, it was a nightmare."



## Quick Study

### Challenges

- Upgrade video postproduction equipment
- Manage editing systems more efficiently
- Support collaboration among student filmmakers

### Solution

- 11 [Power Mac](#) computers
- 1 [Xserve](#) G5
- 1 [Xserve RAID](#)
- [Xsan](#)
- [Final Cut Studio](#)
- Fiber Channel and Ethernet cards, switches, and cables

### Results

- Greatly reduced time needed to troubleshoot, manage systems
- Tripled enrollment in classes
- Supports simultaneous editing by multiple users, transfer of massive files

## Quick Facts

- 90 percent of student body traditionally goes on to two- or four-year colleges
- Regional Occupation Program funded through Contra Costa County Office of Education
- Total upgrade costs for hardware and software: \$60,000



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Many schools opt for what Castle calls the “many but cheap” solution. But this approach merely magnifies the problem, he says. “School administrators will say, ‘Instead of centralized storage, let’s buy 25 workstations and a bunch of external hard drives, and move them around.’ But high school kids often end up making multiple copies of their projects; they can’t remember which drive they used last time and things can quickly spin out of control. It was clear to me that we needed a centralized video file server.”

## NAS Not the Answer

Castle evaluated both Network Attached Storage (NAS) and Storage Area Network (SAN) solutions. He found that editors in a NAS environment could work locally, then send their files to a network storage system. But he would have had the same file management issues and the potential that students would still create multiple copies of their projects. Additionally, the length of students’ films would have brought the file transfer process to a virtual standstill.

Apple has taken something that’s highly necessary — and until now astronomically expensive — and made it affordable for the rest of us.

— Jeff Castle, Director of Video and Broadcast Production, Albany High School

“In a NAS environment, if kids are working on a three-hour project and want to send it to the network storage system, the file will only travel so fast,” Castle explains. “And if you have more than one editor at a time, the server will quickly become bogged down. That led us to explore a SAN, which is by far the most popular video storage solution in the industry, and is used by most of the major television networks and postproduction houses.”



## The Power of Xsan

By soliciting the advice of broadcast professionals via online forums and tradeshow, Castle plotted out his “dream” postproduction studio. In all Castle purchased 11 Power Mac computers, 11 licenses for Final Cut Studio, an Xserve G5, a 3.6TB Xserve RAID, and a full array of Fiber Channel and Gigabit Ethernet switches, cables, and cards. The addition of Xsan, Apple’s enterprise-class Storage Area Network (SAN) solution, enabled every student to access terabytes of storage on the Xserve RAID over Fiber Channel.

“With Xsan and Xserve RAID, our network is now so powerful that we can have all of the workstations editing directly from our centralized storage server at the same time,” marvels Castle. “Performance-wise, it really runs great. And we’re not even up to the maximum yet. The kids are mostly editing DV-25 material, which is 3.6 megabytes per second, and the resolution is adequate. Even when every workstation is in use, the network just doesn’t choke.”

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## Centralized Storage for the Rest of Us

Using Xsan has additional benefits, Castle adds. Because the storage is centralized, students need not sit at the same workstation each time. With three ROP video classes on the schedule and 90 filmmakers eager to work throughout the day, this type of flexibility is invaluable. In addition, Castle has been able to dedicate systems to specific tasks, such as what he terms the “screaming-fast” dual processor Power Mac G5 with 4GB of RAM that now serves as a motion graphics workstation.

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Castle considers Albany’s Apple tools to be the foundation he needs to grow the ROP program. “With Xsan we have access to technologies that are going to be cutting-edge for the next 10 years,” he says. “Our infrastructure is totally upgradeable. Before Xserve RAID and Xsan came along, the only other options cost more than \$100,000. Apple has taken something that’s highly necessary — and until now astronomically expensive — they’ve reconfigured it, simplified it without making it any less powerful — and made it affordable for the rest of us.”

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## The Right Thing to Do

Although SANs are commonplace in the private sector, education has yet to embrace the architecture on a large scale. Castle believes schools should take a second look at this storage solution.

“The setup was probably more than many schools are willing to spend,” acknowledges Castle. “But the efficiency and collaboration afforded by the installation will justify its cost in a short amount of time. We not only reap the benefits of centralized storage and massive throughput, we get it all for a cost-per-megabyte figure that’s lower than what we’d have to spend on individual workstation hard disks.

“The thing we did differently and what makes this so exciting,” adds Castle, “was that we put infrastructure first. Most public high schools — especially those strapped for cash — aren’t willing to do that. Instead, they fill up rooms with computers that look good to the public. But in my opinion, putting in Xsan and all of the other Apple technologies was really the efficient, right thing to do.”

## Advice to Other Schools

- Before you start a similar program, evaluate your needs, and define your goals and objectives.
- Look to the private sector for advice. Pay attention and do what the industry’s doing.
- Don’t underestimate what teenagers can do. Give them powerful tools and they will create powerful projects.

## To learn more, contact:

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