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# Stanford University Lowers Cost of PC Management with Microsoft Windows XP, Dell OpenManage, and Altiris

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***Stanford University's IT infrastructure is as diverse and dynamic as its students and faculty. Bristling with new ideas, Stanford professors and students make extraordinary demands on the university's IT staff by regularly evaluating a myriad of software applications. In an effort to reduce the high cost of managing thousands of PCs and notebook computers across campus, the university's School of Education IT group recently piloted Microsoft® Windows® XP, Dell® OpenManage™, and Altiris® PC management software on Dell OptiPlex™ PCs. The result was dramatically less time spent on PC troubleshooting, hard drive re-imaging, and software deployment, yet students and faculty retain the software variety and system performance they need to conduct research.***

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Stanford University is full of smart, independent people who are where they are because they originate new ideas, try new ways of doing things, and won't accept no for an answer. Imagine being on their IT support staff.

Paul Kim lives the challenge. As Chief Technology Officer for Stanford's School of Education, Kim used to be barraged with requests to install new software and "fix" PCs that had been reconfigured with non-standard software and settings. "While we try to maintain guidelines about what students and faculty can install on PCs, the reality is that these are very creative people," Kim says. "Because the university is so research-focused, our faculty is always trying out new ideas. We have to be able to support their needs, but it makes a mess from a PC management perspective."

For example, a professor might ask Kim to install a new statistical software package on lab PCs. The software might be used for only one semester, or even one class, but Kim has to make it available. Another challenge the IT group faces is students installing software on lab PCs and changing configuration settings. "If we didn't give them this freedom, they'd ask us to do it anyway," Kim says. "However, they end up changing the standard configuration so much that it causes problems for other students using the machines after them. We had to go in and clean up these machines one by one on a daily basis, which was time-consuming."

## Solution Overview

### Challenge

Find a standard, cost-effective way to deploy, manage, and support thousands of clients in a large, diverse IT infrastructure. Support faculty and students without overwhelming limited IT resources.

### Solution

Use Dell OptiPlex PCs running Microsoft Windows XP, Dell OpenManage, and Altiris desktop management software to help lower the cost of PC configuration and management. Automate PC troubleshooting, software deployment, and hard drive re-imaging.

The School of Education has four PC labs with approximately 120 systems that were bogged down in these kinds of PC management challenges. Kim's IT staff has only seven full-time and six part-time employees to take care of these systems located all over campus. However, the same challenges were occurring in all of Stanford's schools – each of which maintains its own IT department and computer labs – causing big headaches and mounting PC management costs for the university. The school's central IT group asked Kim to work with Dell – Stanford's technology vendor of choice – to help lower PC management costs and reduce the support burden on IT.

### ***Dell Recommends a Three-Part Solution***

Dell recommended a three-part solution comprised of the Windows XP operating system, Dell OpenManage software, and Altiris software. Microsoft Windows XP provides the stable foundation Stanford needs to run its constantly changing software environment. Dell OpenManage ensures automated monitoring and management of critical PC hardware. And Altiris provides automated hard disk re-imaging, automated software deployment, and remote desktop management.

The Stanford School of Education IT department conducted the pilot in a lab equipped with 40 Dell OptiPlex PCs with Intel® Pentium® 4 processors running at 2.8 GHz with 1 GB of RAM.

### ***Windows XP a Stable Foundation***

Stanford University had already decided to migrate its thousands of Windows-based PCs to Windows XP before the managed-PC pilot came about. However, "this pilot gave us an excellent opportunity to see Windows XP in action before we migrated the entire university," Kim says. "We were amazed at the stability of Windows XP. It is really outstanding. With everything else in our environment constantly changing, we need the rock-solid foundation Windows XP provides."

Windows XP further provides built-in desktop remote control that allows an IT administrator to log into a user's machine and run applications for troubleshooting purposes. This allows the IT staff to troubleshoot problems remotely rather than sending a technician to each and every client.

Windows XP is also able to automatically seek out peripherals on the network and install the correct drivers. "You can just plug in almost any peripheral, and it works!" Kim says. "This is another big time-saver for IT."

### ***Dell OpenManage Monitors PC Hardware***

Dell OpenManage, which Dell provides free of charge with its Dell PowerEdge™ servers, monitors critical hardware components around the clock and automates management of problems when they occur. It watches over critical voltages, temperatures, fan speeds, and other parameters to make sure all components are running to factory specification. It can catch overheating processors and fans, memory errors, and voltage spikes before components fail and cause a catastrophic server failure.

"Dell OpenManage lets us be very proactive in managing PCs," Kim says. "It lets us remotely monitor all the computers in all our labs and see quickly what's functioning and what's not. If someone opens a server chassis, we know it. If memory malfunctions, it tells us. In the past, we wouldn't know when a PC wasn't working; or if we did, we would have to spend a lot of time



diagnosing it. Dell OpenManage saves us hours of management time for each PC. We spend zero time diagnosing PCs today.”

Should a PC fail, Dell OpenManage helps Stanford IT quickly resolve the problem and return the PC to operation. Dell OpenManage stores information on all PC components, so when an administrator needs to locate or order a needed part, the necessary stats are instantly at hand. “Dell OpenManage is a great help in asset management,” Kim says. “It can provide a complete inventory of PC resources, including a detailed summary of the components in each machine – processors, memory size and configuration, BIOS information, operating system information, NIC types, and more. It even records when a PC was installed, the cost code, the limited warranty, and other important maintenance information.”

### ***Altiris Automates Software Deployment and Management***

Altiris software was the third part of the Dell-recommended PC management solution. Altiris ([www.altiris.com](http://www.altiris.com)) is a leading developer of IT management products that span the complete technology life cycle: deployment and migration, operations management, inventory and asset management, and problem resolution. Stanford uses Altiris desktop management solutions to provide the following three services:

- **Hard drive re-imaging.** Kim’s staff set up Altiris to re-image the hard drives of all the PCs in the School of Education labs at 4:00 a.m. every morning. This returns each PC to a standard configuration, erasing non-standard software and resetting operating system settings. “Altiris solved the problem caused by students installing all kinds of software on school PCs and burdening the IT staff with cleanup,” Kim says. “With Altiris, they can install whatever they want, and it’s automatically removed every morning. There’s absolutely no work involved on the part of the IT staff.”
- **Automated software deployment.** Altiris automates deployment of software to any number of computers. When a professor asks Kim to install a non-standard application on all the PCs in a lab, Kim simply installs it on one machine and then uses Altiris to push that image to all the PCs in the lab. Stanford also uses this feature to roll out new systems. “We just install one standard image – which contains the OS and essential applications – and the job is done,” Kim says. “No more installing software packages one by one on each and every computer.”
- **Remote desktop management.** Altiris allows an administrator to take over a user’s computer for the purpose of troubleshooting problems or changing settings. “From my office, I can see exactly what’s on that user’s computer, run that person’s applications, share the screen,” Kim says. “We don’t have to have someone in the lab to troubleshoot problems.”

### ***Dell OptiPlex PCs Ideal for Windows XP***

For the pilot, Stanford ran Windows XP, OpenManage, and Altiris on 40 Dell OptiPlex PCs containing Intel Pentium 4 processors running at 2.8 GHz with 1 GB of RAM. “These systems are far more powerful than the systems they replaced,” Kim says. “All our software runs faster, especially statistical analysis programs that many of our professors use. Students finish their analyses sooner and get more done. Also, these new, faster systems are smaller, which saves space in our labs.”



As a platform for running Windows XP, "Dell is the right match," Kim says. "These new Dell systems have the power and memory needed to run Windows XP and run it well. The stability has been great."

Kim says he also likes how the Dell OptiPlex motherboard and internals are designed. "It's easy for us to get into the chassis and remove and install components. When we need to upgrade or change parts or swap components, the layout of the OptiPlex PCs makes this easy, reducing the time required of our support staff."

Stanford also uses a Dell PowerEdge 1650 server to run the Altiris server-side software; this server runs Windows 2000 Server. The PowerEdge 1650 is a space-efficient 1U rack-mounted server with two Intel Pentium III processors and up to 4 GB of SDRAM. The PowerEdge 1650 is designed for high availability and easy remote management through Dell OpenManage.

### ***Costs Drop, Service Improves***

The managed PC solution provided by Dell, Microsoft, and Altiris has given Stanford University a way to slash PC management costs while improving IT service to students and faculty. "We're extremely happy with this solution," Kim says. "I was thinking of hiring a lab manager, but I don't need one now. That's \$90,000 a year saved right there. Plus, at a conservative estimate, we'll save an additional \$150,000 a year in IT staff time spent deploying software, manually re-imaging machines, troubleshooting problems, and so forth. It frees our IT staff from all these time-consuming PC maintenance chores and makes us far more productive."

Well-managed PCs not only save the university money in IT resources, they also help make users happier and more productive. "We're able to provide better service to our users, because we can deploy the software they want, when they want it, and we can keep our PCs clean and standardized for all students to use," Kim says.

Going forward at this time, all PCs acquired by the Stanford School of Education will be Dell OptiPlex PCs running Windows XP, OpenManage, and Altiris software. As managed PCs propagate campus-wide, Stanford University expects to see savings multiply.

### ***For More Information***

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