# CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

**24-hour remote workstation access with HP RGS software**

California State University Northridge

*"Students love it. They can run a high-end CAD application from home and do everything the HP Workstation is capable of—even if they're working from a slow, outdated PC."*

*—Emil Henry, manager of information systems, College of Engineering and Computer Science, California State University, Northridge, Calif.*

HP CUSTOMER CASE STUDY:
HP RGS software gives engineering students HP Workstation capability from a distance

INDUSTRY:
Higher education

OBJECTIVE:
Provide greater access to HP Workstations in college's engineering labs

APPROACH:
The College of Engineering and Computer Science at California State University, Northridge enables remote login to HP Workstations using HP Remote Graphics Software (RGS) and HP Session Allocation Manager (SAM)

IT IMPROVEMENTS:
- HP Session Allocation Manager matches the appropriate workstation with the user
- HP RGS software enables older, less powerful PCs to access state-of-the-art workstation capabilities

BUSINESS BENEFITS:
- Remote login increases workstation access by 10 hours per day (from 10 p.m. to 8 a.m.) and on weekends.
- Students can work collaboratively, even from separate locations, by sharing a session
- RGS software fully supports 3D CAD software
- Increased access stretches computer resources in times of limited budgets


When it comes to the most powerful computers on college campuses, there are never enough. Ask any college student in a technically demanding field—engineering, animation, filmmaking—and you'll hear the same story. The College of Engineering and Computer Science at California State University, Northridge (CSUN) is no exception.

In April 2010, the American Society for Engineering Education (ASEE) recognized CSUN as the fastest growing undergraduate engineering program in the country, with a 96% increase in the number of undergraduate engineering degrees awarded in 2008 compared to 2005. So Emil Henry, manager of information systems for the college, found a way to make the most of scarce resources. Using HP Remote Graphics Software (RGS) and HP Session Allocation Manager (SAM),

**Windows®. Life without Walls™. HP recommends Windows 7.**

the college has enabled remote use of its HP Workstations for students anywhere. Workstations that once were available only between 8 a.m. and 10 p.m. during the regular school week can now be used 24 hours a day, 7 days a week throughout the year.

*"Remote login allows us to make use of workstations for more hours each day, so we can give students greater access."*

*—Emil Henry, manager of information systems, College of Engineering and Computer Science, California State University, Northridge*

"Students love it. They can run a high-end CAD application from home and do everything the workstation is capable of, even if they're working from a slow, outdated PC," says Henry. "It's helping students who wouldn't be able to complete their projects otherwise, and it's helping us stretch our budget."

## CUSTOMER SOLUTION AT A GLANCE

### PRIMARY APPLICATIONS

Engineering and Computer Science education

### PRIMARY HARDWARE

- HP Z400 Workstation
- HP Z200 Small Form Factor (SFF) Workstation
- HP xw-series Workstation

### PRIMARY SOFTWARE

- Windows® XP Professional 64-bit (available through downgrade rights from Genuine Windows Vista® Business)[1,2]
- Genuine Windows@ 7 Professional[3]
- HP Remote Graphics Software
- HP Session Allocation Manager
- SolidWorks 3D CAD software
- CATIA 3D CAD software
- Fluent computational fluid dynamics software
- Additional 100+ Engineering and Computer Science applications

### USING HP WORKSTATIONS FROM ANYWHERE

The College of Engineering and Computer Science (CECS) at Cal State Northridge has an enrollment of some 3,000 students, but only a few hundred workstations in its labs. Time on a high-end workstation is a scarce, valuable commodity.

The problem is a particular challenge for seniors completing their senior project. Henry recalls students who had undertaken a formidable challenge: designing a Formula SAE race car from scratch in SolidWorks CAD software. They could only run the software in the college's labs, which were open from 8 a.m. to 10 p.m. during the week.

They attempted to access the workstations remotely, but found the CAD software's functionality was compromised. "When they tried rotating the car, the wheels became blocks," Henry recalls. When the students wanted to do analysis or high-end testing, they were unable to proceed.

"That's why we were so excited to find RGS" says Henry. HP Remote Graphics Software enables users to view and interact with the desktop of remote HP desktop PCs or Workstations over a standard TCP/IP network. RGS is a high-performance remote desktop connection protocol that gives users access to rich-content environments that can include video, web flash animations and graphics intensive applications. Applications run natively on the remote system and take full advantage of the computer and hardware graphics resources of the sending system—in this case, HP xw-series and Z-series Workstations.

RGS captures the desktop of the remote system and transmits it over a standard network to a window on the student's local client using advanced image compression technology specifically designed for text, digital imagery and high frame rate video applications.

"The global marketplace of today requires engineers and computer scientists to apply rapidly evolving new technologies to serve society—often working across disciplines, cultures and in an asynchronous distributed environment. Thanks to support from industry partners like HP, our graduates emerge well prepared to tackle the challenges in industry."

*—Dr. S. K. Ramesh, dean, College of Engineering and Computer Science, California State University, Northridge*

"One of the reasons RGS is so valuable is that we are predominantly a commuter campus," notes Henry. "So if students can login and access our HP Workstations remotely, they might save two or three trips to campus in a week. It's a big timesaver, and equates to environmental savings from reduced driving."

## HP SAM SOFTWARE MANAGES REMOTE CONNECTIONS

RGS was designed for a single user and a single session per machine. Usually the user needs to know which machine he/she is going to connect to, so the college uses another HP software tool —HP Session Allocation Manager—to manage the RGS remote connections. HP SAM manages the assignment of remote desktop connections from a student's computer to remote desktop session. "SAM allocates the session based on the available resources; it's basically a broker," Henry says.

*"That's why we were so excited to find RGS. … It's helping students who wouldn't be able to complete their projects otherwise, and it's helping us stretch our budget."*

*—Emil Henry, manager of information systems, College of Engineering and Computer Science, California State University, Northridge*

"A student logs into the campus VPN and then to the SAM client. SAM takes the student's login information and finds a workstation for the student based on the student's Active Directory® profile," explains Henry. A mechanical engineering student, for example, gets assigned to a workstation from the lab serving the specific CAD applications that mechanical engineering students require.

If another student tries to log in directly to a workstation that is already in use, the student who's already using the workstation will get a prompt that indicates someone else wants to join their session. "This enables RGS to become a collaborative tool," Henry notes. Students working together on a project—like the senior race car design—can communicate and hand-off control of the session to one another as needed to work together collaboratively.

Henry says remote logins to HP Workstations are increasing as more and more students learn about the capability. "Students love it. One of the great things is that the capability of the student's PC client really isn't an issue. They can be using a five-year-old machine with a slow processor and a very basic graphics card. That doesn't matter because the PC is just displaying pixels on the screen; all the processing is taking place on the remote workstation. All they need is a good cable or DSL Internet connection."

Among those who benefit from using RGS to access HP Workstations are students from nearby military bases. "They take their classes remotely, and now they don't have to come onto campus to do their projects. They can get the machine time they need online, so it's a big benefit for off-site students."

While most of the Cal State Northridge students using the remote capability are local, Henry knows of one student who logged in using RGS from his home in Canada. The system also is being made available to gifted California high school students in the college's unique Accelerated Coursework in Computer Science and Engineering for Student Success (ACCESS) program. Annually, more than 120 qualified juniors and seniors in a dozen high schools are exposed to this technology in the online Introduction to Engineering course.

**Windows®. Life without Walls™. HP recommends Windows 7.**

Moreover, interactions with CECS student mentors through virtual conferencing capabilities showcase HP and the college to attract students to the engineering and computing disciplines.

## MAKING THE MOST OF RESOURCES

Remote login capability doesn't just provide off-hours access to help students; it also effectively increases the college's resources of workstation computing on campus.

"Because of the budget limitations we're currently experiencing, we're not always able to increase the number of workstations available in our labs," Henry says. "Remote login allows us to make use of workstations for more hours each day, so we can give students greater access."

Henry notes that the College of Engineering and Computer Science turned to HP Workstations running Windows® XP Professional 64-bit (available through downgrade rights from Genuine Windows Vista® Business) after standardizing first on HP UNIX® servers. "Our rep then introduced us to HP Workstations, and we appreciate how well designed they are. HP Workstations are built like a tank," he says.

They also thrive in challenging environments, he says. That's helpful during summers, when a building's air conditioning might be turned off temporarily in order to save energy. "During summer, the heat in our labs can get up to 85 degrees or more, but the HP Workstations, which can accommodate work on factory floors, just keep chugging along. We're very happy with the reliability."

Does he have any regrets about launching remote login capability? Only one. "If I had it to do over again, I would have moved a lot faster," he says. "Now my mission is to expand the program to a larger audience inside the college and then I will demonstrate the potential for the campus and other engineering programs."

The college has more than 600 HP Workstations, including the xw-series Workstations and the new HP Z400 and Z200 SFF Workstations.

"We decided to try the Z-series based on the performance rating of the CPUs. According to the ratings we've seen, you get a 30% to 40% increase in performance for a very small difference in price. Our students and faculty are definitely pleased with the speed and graphics capability."

The college now configures HP Workstations with Genuine Windows® 7 Professional, 4 GB of RAM, and an NVIDIA Quadro NVS 450 graphics card. For engineering courses, the software image includes SolidWorks and CATIA 3D CAD software, and Fluent computational fluid dynamics software.

Cal State Northridge purchases its HP Workstations through Method Interface, a nearby HP Authorized Partner, and also maintains direct ties with HP.

"We get great local service and support, along with the backing of HP," Henry says. "HP stands by its products and wants us to succeed."

---

To learn more, visit www.hp.com

Contact the HP Reference2Win Program, 866-REF-3734 for more information.



[1] Certain Windows Vista product features require advanced or additional hardware. See www.microsoft.com/windowsvista/getready/hardwarereqs.mspx. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit www.windowsvista.com/upgradeadvisor.

[2] Windows XP Professional is preinstalled on this system and includes end user rights and media for Genuine Windows Vista Business. You may only use one version at a time. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

[3] Systems may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.

4AA2-1062ENW, July 2010