



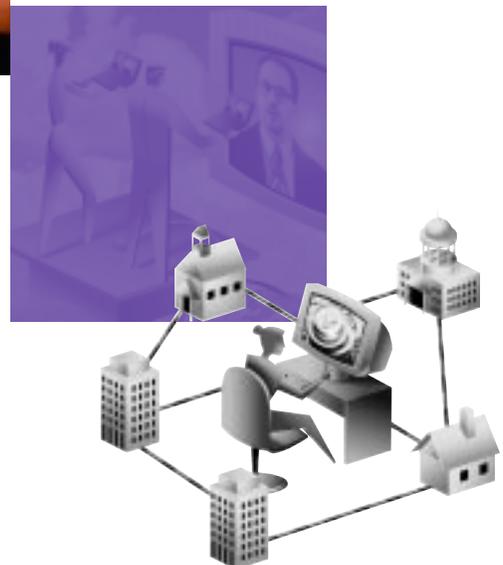
Citrix Solutions in Education

Enterprise-class *reach* and *reliability*
for *higher education*.



Citrix application server software and services enhance the learning experience for students, faculty and the learning community by providing a comprehensive CORE curriculum.

- C**onnecting learning communities
- O**ptimizing the learning environment
- R**eaching equity goals
- E**nsuring enterprise-level performance





Connect the college enterprise to *run* the entire organization with *Fortune 500* efficiency.



The Citrix solution gives students, faculty and administrators high-performance access from any device to data and applications on a central server. Because the solution is software-based, a college or university can provide full connectivity to powerful applications while leveraging its current infrastructure.

Realizing the promise of technology in education.

Today's colleges and universities operate like diversified businesses, providing undergraduate, graduate and continuing education programs, as well as high-quality administrative services, to students, faculty and staff. Campus administration integrates management of classrooms, labs, dorms, health facilities, food service and utilities, among others. All these diverse functions must be connected by a unifying technology that can help manage operations while maintaining advanced security and bulletproof reliability.

Citrix® application server software offers a comprehensive solution for simplifying access to resources while streamlining operations management in academic environments. Citrix meets the challenges facing today's education executives with the same consistent effectiveness we deliver to Fortune 500® companies.

Citrix provides colleges and universities with the tools they need to rapidly deploy applications to every user in the system—all from a single point.

Connections that enhance educators' effectiveness.

Citrix provides a comprehensive software solution that enhances communication between students and professors while it facilitates collaboration and research among faculty. Users sending email, performing routine administrative tasks or conducting sophisticated research all can enjoy improved operational capability in every corner of the campus.

Resources designed for the way students learn.

Today's students need to learn the academic classics as well as technology-based skills to excel in today's fast-paced Internet economy. The Citrix model gives students access to a range of interactive applications and makes these applications available via a standard Web browser.

Citrix frees faculty and students alike from the traditional constraints of computing. Citrix solutions ensure that no matter where they are working—the computer lab, a remote research site, the classroom, the library, the dorm or an off-campus apartment—they can have 24x7 access to the applications and information they need.

Optimize learning environments for *student* and *faculty* excellence.

Unlimited access to learning opportunities.

Whether it's enabling a history professor to put reference materials online, an assistant in the physics lab to access an advanced database application or a student in the dorm to ask an instructor for further explanation of yesterday's lecture, a Citrix solution enhances learning for everyone in the education community. Citrix application server software empowers students and faculty to stretch the horizons of the traditional education environment, creating self-paced classes and individualized learning programs. Now faculty can use the latest learning technologies to bring subject matter to life, flesh out details or clarify difficult points. And students can study and conduct research in non-traditional ways—wherever and whenever they want, with full access to the applications and information they need. Students can learn how to learn. And they can build skills they can carry forward into the world after graduation.

More effective tools for teaching.

As students prepare for tomorrow's demanding professional and business worlds, they sometimes need access to tools that can be too specialized to

install or too demanding to support on large numbers of desktop computers. Engineering requires advanced math. Languages require interactive learning. Business requires financial modeling. Citrix application server software can give all students access to these tools by installing them on a central server instead of on each desktop. Now faculty can provide more continuity from student to student. They can enhance their own research, as well, by using the same tools as their colleagues throughout the university.

Recruiting with a world-class image.

Colleges and universities require world-class technology images to attract—and keep—outstanding students and faculty. Today's students expect Internet access in their dorm rooms. And everyone requires email, productivity tools, high-performance computer labs and easy access to research materials. A Citrix solution can provide it all. It even can make it easier for prospective students to obtain information about the school over the Internet.





Reach equity goals by offering more *access* to more *people*.

Extending access to students anywhere.

Today's education initiatives, such as distance learning, extend the reach of new and diverse opportunities beyond the boundaries of the traditional institution — changing the definition of education so that learning becomes a life-long endeavor. Citrix solutions allow colleges and universities to offer educational opportunities to more people by extending access to data and applications to all types of computing devices — Macintosh®

computers, Windows® systems, UNIX® workstations and even handheld devices. Professionals seeking advanced degrees while they continue in their jobs, part-time students who want to finish degrees they started years ago or full-time students living off campus who require fast performance over dial-up connections all can benefit from a Citrix solution. Using Citrix application server software, colleges and universities of every size can provide Digital Independence™, the ability to connect any application to any device over any connection — wireless to Web.

More involvement for students and faculty.

When any device can access any application, it's easier for students and faculty to become more deeply involved in the university's educational community. Students can bring the desktop devices they prefer from home. And faculty can continue their research whether they're using a desktop on campus or a portable in the field. With a Citrix solution in place, institutions no longer need high-end desktop systems to run sophisticated applications. Inexpensive access devices — including recycled PCs — can be a part of a Citrix solution and significantly lower the cost of delivering information and providing consistent, reliable access.

Greater impact on the extended community.

Citrix technology can reach an entirely new body of students — from participants in continuing education to high school students preparing for college to people who simply want to learn. It can provide inter-library loans for off-site students or access to statewide networks and electronic library databases. With Citrix technology colleges and universities can accommodate the changing campus by allowing ease-of-use for all students.



Ensure enterprise-class quality of *service, performance and security.*

Services for the entire technology lifecycle.

A Citrix solution means that each stage of the technology lifecycle—acquisition, deployment, management and upgrade—is made easier by lowering cost, improving uptime and simplifying compatibility issues.

With a Citrix software solution in place, network administrators gain consistent performance and maximized uptime that frees them from detailed technology management.

This freedom allows them to focus on fulfilling the institution's educational mission—maintaining a supportive environment for research and learning.

As educators pursue the vision of reaching more students in new ways, everyone must be able to connect through heterogeneous platforms and a range of devices. PCs, Macintosh computers, UNIX workstations, handheld devices, notebook computers and legacy systems all must be linked together. No matter what capability a college's current technology enables, the institution must leverage that investment as it moves forward, meeting the challenge to transfer academic and administrative operations to the Internet.

Taking secure operations to the World Wide Web.

As colleges and universities offer a greater range of services and extended availability of online information, security is a constant concern. Citrix's advanced architecture supports the education enterprise by deploying applications that are scalable and widely available but still reliable and secure. With data centralized on servers rather than dispersed to desktops, sensitive financial information and student records are kept safe. And with the ability to limit student access to only the applications they need and to reduce the ability to change configurations or alter software programs, the technology infrastructure is protected.

Boost performance and optimize your investment.

To keep up with the fast-paced changes in technology, it is important that each institution optimize its technology investment. That means using existing devices to provide high-performance access to mission-critical applications and systems.

With Citrix, it is possible to provide cost-effective access that can meet a broad range of individual needs.



Citrix application server software meets the challenges of simultaneously providing secure information access and expanded availability over the Internet.



See how schools worldwide are using Citrix Solutions.



Gaining an edge in the competition for students.

Today, even the most prestigious schools face stiff competition for students. Hughes Hall, one of the colleges of England's Cambridge University, found that a Citrix solution could help the college differentiate itself by giving every student free access to applications and data from his or her room.

At Hughes Hall, each college residence room is equipped with a computer—the ideal recruiting tool, the college finds. Each of these student computers is linked to a server running Citrix MetaFrame™ providing access to Microsoft® Office, Netscape Navigator®, Adobe Acrobat® and email—as well as to the Internet.

The solution mostly uses recycled 486 computers purchased at a substantial savings. “It truly dumbfounded everyone that we can use these old computers to give students access to an up-to-date Windows NT® environment,” says Dr. Mike Franklin, technical director of College Computing Services.

As for the value of this Citrix solution, Dr. Franklin says: “It is highly relevant in an academic environment. Students demand the latest technology. This is a cost-effective way we've found to deploy modern software.”

The right choice for a demanding environment.

In a multiuser environment like a library, students can be hard on computers—deleting or changing settings, accidentally introducing viruses and working around security systems. So when the State University of New York (SUNY) at Stony Brook sought secure, maintenance-free access to its library, it chose Citrix application server software and services.

To serve students and members of the local community with access to more than 1,000 electronic-based research databases such as Med Line, LEXIS®-NEXIS® and Web of Science, the university now maintains 50 Windows-based terminals in three library divisions. With no floppy drives, no removable media and no chance of introducing viruses, the need for support has decreased dramatically over its previous PC-based solution.

Plus, the system is more secure, because the library can “lock down” a desktop and provide users with only the applications they need. “The goal of a library is to make as much information available as possible,” says Andrew White, the library's systems support specialist. “With Citrix, we can make this happen—and still keep control over our systems.”





Less downtime means more efficient administration.

Consider the behind-the-scenes functions of a major university—everything from administrative and information systems management to groundskeeping, carpentry, masonry and plumbing. Streamlining and automating these functions is critical to daily campus operations. The University of California at Los Angeles (UCLA) found the solution it needed to support a more productive field workforce in Citrix MetaFrame application server software and services.

Using the Citrix solution, the university could more effectively provide two mission-critical applications—Kronos® time and attendance software and Maximo® facilities management software—from a central server. Roughly 200 users depend on Kronos and Maximo to be constantly available as they log and track administrative services jobs at 15-minute intervals on a 24x7 basis. “Before Citrix MetaFrame, application updates might take a day or more to complete, forcing users off the system during the update process. Now the same updates take only an hour or so to complete, and the update process is totally transparent to users,” said Jack Tchilingirian, programmer analyst in the university’s IS group.



How Citrix application server software works.

Citrix application server software shifts application processing from individual computing devices to a centralized server. Because data processing occurs on the server, any device — including older Macintosh computers and PCs, inexpensive thin clients and a host of others — can access the same powerful administrative and instructional applications. Only low-bandwidth information, such as mouse clicks and keystrokes, is transferred between the device and the server, ensuring high performance.

In the Citrix computing model, applications can be accessed across multiple platforms including Windows, Mac® OS, UNIX and Linux®—over a variety of connections, including Internet, LAN, WAN, dial-up or wireless.

Colleges and universities have the option of hosting applications on a campus-based server, which allows fast deployment, easy updating and simplified management. Or they can access applications via the Internet by subscribing to the product offerings of an application service provider (ASP).

The bottom line is that students, faculty and administrators now have equal access to applications that look, feel and perform as if they're running on a powerful, multimedia desktop.

The Citrix family of products.

Citrix is the world leader in application server software and services with a family of products that includes:

- Citrix MetaFrame for Windows 2000 Servers
- Citrix MetaFrame for Microsoft Windows NT Server 4.0, Terminal Server Edition
- Citrix MetaFrame for UNIX Operating Systems
- Citrix VideoFrame™
- Plus a suite of comprehensive management tools

Please visit www.citrix.com/education to find the reseller nearest you.



Citrix MetaFrame employs the most advanced architecture in the application server software industry.



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