

Thin-Client/Server Computing

Reducing the costs and complexities of application deployment, management, access and use.

“A thin-client/server approach equipped us with a unique way of entering large amounts of data into a Windows-based system without having to upgrade the existing communications infrastructure. There have also been significant savings in running the application using a network-centric PC-based technology, provided by a Citrix solution, as opposed to two different mainframe systems.”

Marc Maertens,
Honeywell Europe S.A.



CITRIX®

Thin-Client/Server Computing Takes Your Enterprise Further



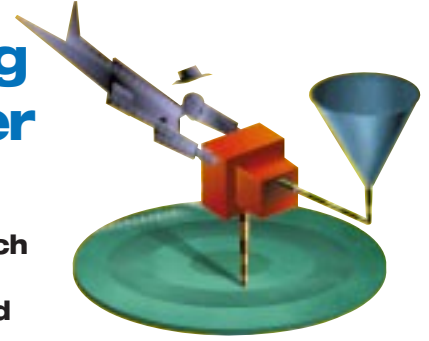
When *Fortune* magazine recently named the "10 Tech

Trends To Bet On," its number-one pick was centralized

computing. But as you centralize, the question remains: What is the most

efficient and cost-effective way to get there? Is there an existing technology

that will do the job? Or will you have to wait for something new—and untested?



The solution that more and more companies are turning to is thin-client/server computing. It's available today. And it's from Citrix Systems, Inc.

is not about devices or operating systems. It works with everything from the latest Pentium®-based PCs, to powerful workstations, Java™ network computers and

—with performance that goes beyond conventional networks.

Join industry leaders

Industry leaders and users alike are rapidly recognizing the strengths of the Citrix thin-client/server computing approach. Last year, Microsoft licensed Citrix® MultiWin™ technology to create a multi-user version of Windows NT® Server 4.0 and future versions of Windows NT. IBM, Hewlett-Packard and other strategic partners have licensed Citrix ICA® (Independent

“It turned out that our office saved around \$6 million because Citrix software could help us do more with less available resources.”

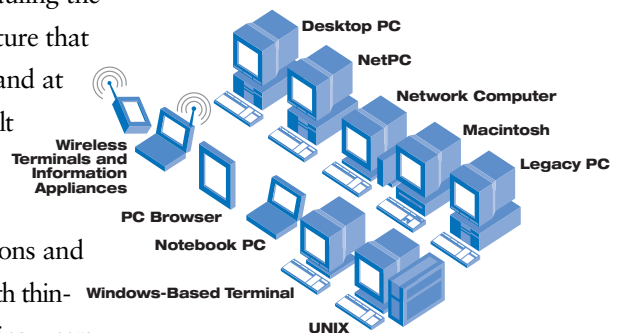
Truman Legg,

Public Defender's Office, Orange County, CA

With thin-client/server computing, you can extend your resources further than ever before. Because applications and data are deployed, managed, supported and executed 100 percent on the server. And client devices, whether “thin” or “fat,” have instant access to these applications. Sessions run concurrently on the server, without sacrificing application performance.

Thin-client/server computing

legacy PCs. It's not about replacing or overhauling the network infrastructure that you've carefully—and at great expense—built up over the years. And it's not about scrapping applications and rewriting code. With thin-client/server computing, users have access to the latest 16- and 32-bit Windows® applications, from any device, from anywhere—even over dial-up connections



Citrix provides high-performance, thin-client software solutions that allow any client to access 32-bit Windows-based applications.

Computing Architecture), enabling any client to access Windows-based applications on the servers. Today, Citrix Systems has an installed base of over one million concurrent user ports servicing over three million users daily in companies like R.R.Donnelley, Honeywell and Bell Mobility.

Citrix is the answer

Why are more and more organizations choosing thin-client/server computing?

1) It's available right now, 2) it can reduce the complexity of your network so you can lower your total cost of ownership—by as much as 57 percent*—and 3) it offers

enhanced benefits to IT managers and end users.

Management and scalability:

Using thin-client/server computing, IT professionals can deploy, manage and support applications from a single location in minutes across a network of any size.

Access: Users can access 32-bit Windows-based applications from virtually any client device, including legacy 286, 386 and 486 PCs, Pentium-based computers, network computers,

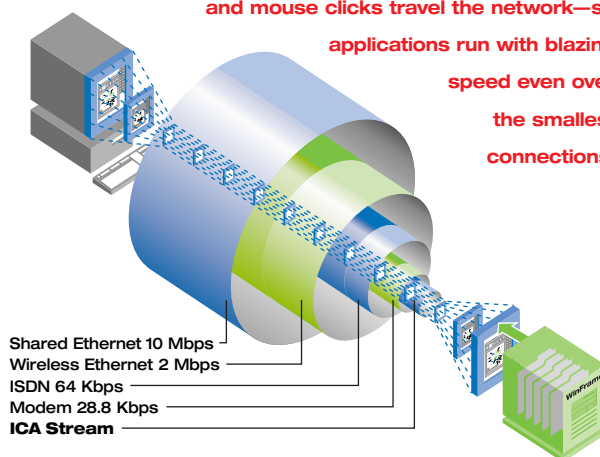
Windows-based terminals, UNIX® workstations and Macintosh® systems.

Performance: Thin-client/server computing can provide LAN-like application performance and superb responsiveness, even over low-bandwidth connections.

Security: Thin-client/server computing keeps vital information on the network and offers everyone access to the same centralized information.

With thin-client/server computing, you'll be able to

With ICA, only screen updates, keystrokes and mouse clicks travel the network—so applications run with blazing speed even over the smallest connections.



make the most of your technology investment. Network and staff efficiency goes up while reliance on new hardware and technology goes down. The result? You lower your total cost of computer ownership.

You choose the right client for your needs.

One of the beauties of thin-client/server computing is the flexibility it provides for selecting client devices. Because in thin-client/server computing it's the function that's important, not the hardware.

Which device? A thin-client/server client device can be any network-connected system accessing a Windows-based application executing on a server.

Either "fat" or "thin." It doesn't matter whether the client system is a full-featured "fat" computer, like a desktop, notebook, workstation, or Java-based network computer, or whether it's a "thin" client, like a Windows-based terminal (WBT), or wireless information appliance.

With any O/S. It doesn't matter whether the client uses the Windows operating system, or a non-Windows-based platform like DOS, UNIX, Java, Mac OS or OS/2®.

From any site. And it doesn't matter whether the client is at headquarters, in a branch office, at home, in a hotel, airport or anywhere else.

Same Windows performance.

With Citrix thin-client/server computing, everyone gets the same familiar look and feel of Windows and the same high performance from applications. But they have the ability to select the client device that best meets their individual needs.

Citrix Provides Robust Solutions For Thin-Client/Server Computing



The Citrix family of thin-client/server computing solutions have been specifically designed to help take your enterprise computing further — toward the connectivity and manageability you want. They're the highest-performing, most cost-effective and most secure way to deploy, manage and access business-critical applications across your enterprise network.

Now both administrators and end users can do their jobs more easily—and better. And you get a better return on your existing infrastructure.

Citrix thin-client/server solutions extend Windows-based applications. In fact, Microsoft Corporation has licensed Citrix multi-user technology and endorsed Citrix thin-client/server technology.

Citrix solutions provide three key benefits:

- **Heterogeneous computing environments:** Finally, you can make Windows-based applications available to everyone—and still let users keep their desktop of choice. Citrix solutions support all types of hardware, all types of operating platforms, all network connections and all LAN protocols. Your network can reach further, because it's not limited by your existing equipment.

- **Enterprise-scale management tools:** Citrix thin-client/server products give you enhanced management tools for applications on Microsoft® Windows NT-based networks. You can easily add servers without reconfiguring systems, administer applications across multiple

And because thin-client/server computing offers bandwidth-independent performance, local users can experience improved application performance, even when network traffic is heavy.

Extending Windows NT

The popular Citrix WinFrame® family of solutions

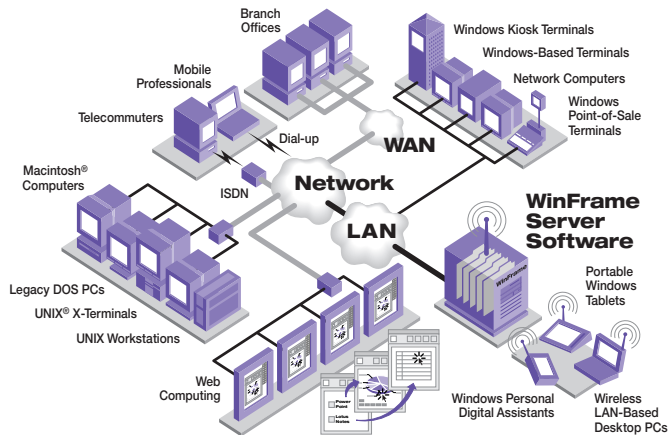
“Like a kid in a candy shop, physicians and their staff have applications at their fingertips.”

John Ernst, Clarian Health

servers from a single point and protect vital data and applications on the server.

- **Seamless desktop integration:** When you employ a Citrix thin-client/server solution, users enjoy the familiarity of a local desktop even though applications are running from the server. So the need for training is decreased and productivity is increased.

already is enabling over 3,000 businesses worldwide to provide enterprise-wide access to Windows-based applications. The newest member of the Citrix family is the “pICAsso” Project, which received the *BYTE* magazine “Best Networking Tool and Application” award at COMDEX/Fall 1997.



With Citrix thin-client/server solutions, access to Windows-based applications is available to users with varied needs, across a broad range of locations.

Complete product family

1997
BYTE
EDITOR'S
CHOICE
AWARD

The Citrix family of robust products ensures the best in

application access, performance, manageability and security. Each meets the needs of demanding enterprise environments—providing the most advanced thin-client/server functionality in solutions designed to keep your business productive and efficient. And they work today.

CITRIX FAMILY KEY FEATURES AND BENEFITS

Feature-rich Citrix solutions provide connectivity for heterogeneous computing environments, enterprise-scale management tools and seamless desktop integration.

Any client device. Citrix makes thin-client/server computing possible using virtually any client device, including PCs, terminals, network computers and wireless devices.

Any connection. Citrix solutions can make connections over telephone lines, wireless devices, the Internet and more, making it ideal for extending bandwidth-hungry applications to users.

Application publishing. Administrators can easily deploy applications across multiple servers from a single point.

Application launching and embedding. Windows-based applications can be launched from or embedded into HTML Web pages.

Load balancing. For optimum application performance, administrators can group servers into “farms” and route users to the least-busy server.

Session shadowing. Administrators can see a user’s display or control the mouse and keyboard, for easy support and training.

Local/remote clipboard. Users can cut, copy and paste between applications running on the server or desktop.

Drive mapping. Users have complete access to

disk drives. Data from a server application can be saved to a user’s local drive.

Printer mapping. Users can transparently access local printers. Mobile users can print remotely.

Port mapping. Peripherals can be accessed by applications running remotely from a server.

Audio support. Sound Blaster® Pro audio support makes a Citrix solution the ideal tool for education, training and the Internet.



Industry-Leading Partnerships Deliver Solutions You Can Trust

Every so often, a big idea comes along that everyone wants to get behind. And thin-client/server computing is one of those ideas. The Citrix Business Alliance is enrolling a growing number of industry leaders to focus on delivering reliable, scalable, cost-effective solutions for business-critical enterprise computing.

Through these partnerships, Citrix works to ensure that its thin-client/server technology functions seamlessly with other vendors' hardware and software. These partnerships are also working to create future products that will help you take full advantage of the benefits of thin-client/server computing.

Microsoft

The recent joint development agreement between Citrix and Microsoft Corporation represents a key partnership. But Citrix and Microsoft have been partners for years. In developing its WinFrame solution, Citrix licensed Windows NT source code, which serves as the base operating platform for the thin-client/server software.

In the development agreement, Microsoft licensed Citrix technology that provides

multi-user capabilities for Windows Terminal Server. This multi-user server core provides



Industry partnerships ensure the development of new products that give you more ways to use Citrix solutions.

the ability to host multiple, simultaneous client sessions on Microsoft Windows NT Server 4.0.

Compaq

A worldwide joint marketing agreement between Citrix and Compaq Computer Corporation promotes the benefits of thin-client/server computing to customers and channel members.

These initiatives feature Citrix WinFrame thin-client/server software and Compaq® server hardware as an advanced solution to lower the cost of ownership for mission-critical enterprise computing.

Compaq has also included Citrix WinFrame thin-client/server software as an option in its innovative SmartStart™ program, an integration tool that optimizes platform configurations and simplifies the installation of servers and software.

Inclusion in the SmartStart program simplifies configuration and lowers WinFrame's installation time on Compaq servers.

Hewlett-Packard

A licensing agreement with Hewlett-Packard Company permits the systems vendor to embed Citrix ICA thin-client/server technology for Windows and Java into future product lines.

This agreement will enable ICA-based thin-client devices and network computers to access standard Windows-based applications executing on Citrix-based servers, helping businesses reduce costs and increase efficiencies by extending Windows-based applications to more devices. Users will also benefit from the ability to access Windows and Java applications from the same device using Citrix thin-client/server technology.

Wyse

Through a long-standing partnership with Citrix, Wyse Technology and its line of Winterm™ terminals provide the broadest array of thin-client devices on the market. Winterm thin clients enable users to run standard Windows-based applications in conjunction with current and future multi-user application server software from Citrix.

Wyse® solutions enable IT professionals to choose the devices that best fit the user's application needs, including Windows-, Java-, browser- or host-based applications—or all in one. The Wyse approach to thin terminals provides universal access to business-critical applications without any sacrifice in application performance.

A Citrix thin-client/server solution is the right choice if your company has mixed hardware and operating systems, offices in several locations and mobile employees. It lets computing reach farther, delivering applications and information to any device anywhere, while helping lower your total cost of ownership. Here are five ways successful companies enhanced their operations with Citrix solutions:

Clarian Health, the second-largest private hospital in the country, implemented a Citrix solution to give more than 500 physicians and staff members fast access to patient information over low-bandwidth dial-up connections. Central management and deployment ensures the highest confidentiality and security for sensitive information.

Hewlett-Packard wanted to deploy human resources software to more than 25,000 employees throughout Europe. A Citrix thin-client/server computing solution enables applications and information to be managed centrally, while giving any employee real-time access to critical data for easy updating and tracking.

BM Polyco, a worldwide supplier of utility gloves for the

industrial and retail markets, chose a Citrix solution to provide real-time information to suppliers and employees across a mixed environment of operating systems and client hardware. Thin-client/server computing reduced administrative overhead and simplified the deployment of business-critical applications.

The City of Tulsa Park and Recreation Department saved critical taxpayer dollars with a Citrix solution on an installed base of low-end hardware. Thin-client/server computing enabled the department to distribute a recreation automation package across more than 20 sites that enabled park users to reserve a facility or enroll in a class from any location system-wide.

The Bank of Walnut Creek realized a 40-percent savings in up-front capital costs with thin-client/server computing. The Citrix solution eliminated the need to purchase servers and hire network administrators at each branch, while providing access to business-critical applications for PCs and older teller terminals across an inexpensive frame-relay WAN.

Citrix Thin-Client/Server Solutions Reduce Cost And Complexity

Finally. Everyone on your network can work together. With greater speed.

Performance. Ease. And control. With Citrix solutions you'll have the freedom to go beyond the limits of your network infrastructure, to increase your entire organization's productivity and to lower its TCO. Best of all, you can do it now.

Thin-client/server computing is fast becoming the most reliable way to reduce the complexity and total cost of enterprise computing. And Citrix offers the best in thin-client/server computing.

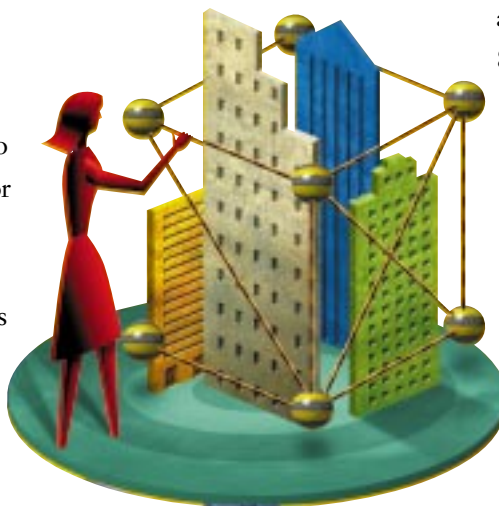
The Citrix family of solutions delivers powerful application deployment solutions that meet the challenges facing IT professionals and the needs of end users. Here are the access to Windows-based applications for heterogeneous computing environments, enterprise-scale management tools and seamless desktop integration you've been waiting for.

Take a test drive online

You can experience the transparent, seamless, server-based performance that a Citrix solution provides using your Windows-based device. And you can do it today—from your own office—by accessing the Citrix server at our headquarters in

Florida via the Internet. Just visit the Citrix website at <http://www.citrix.com/drive2>

You'll also find white papers and other information about thin-client/server computing, WinFrame and the "iCAsso" Project at our website. If you have more questions, just give us a call. You can reach Citrix at 888-564-7630.



A Citrix solution gives your entire organization access to business-critical applications, across different client devices, operating systems and network connections—even dial-in—without loss in application performance.

CITRIX®

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888-564-7630
<http://www.citrix.com>

*Desktop Clients, A Cost of Ownership Study, Spring 1996, Zona Research, Inc.

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Get a FREE *Big On Thin* CD-ROM and Take a WinFrame Test Drive

To get your **FREE** *Big On Thin* CD-ROM featuring the WinFrame Test Drive, simply fill out the information on this card.

Then, you can see the power of WinFrame and how it can simplify the deployment of business-critical applications to remote users. With the WinFrame Test Drive and your Internet access, you'll be able to dial into the Citrix server and experience LAN-like speed as you work with 16- and 32-bit Windows applications from any Windows-based device.

Name _____
Company _____
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1. Which best describes you? (check one)
- MIS Manager/End User
 - Systems Integrator/Reseller
 - Other _____

2. What application(s) are you using and what users are you trying to reach?
- Application name(s) _____
 - Mobile or telecommuters over dial-up
 - Branch offices over the WAN
 - Users of thin-client devices
 - Internet users
 - Wireless LAN users
 - Intranet users

3. What is your project time frame? (check one)
- 1-3 months
 - 4-6 months
 - More than 6 months

4. How can we be of assistance?
(check all that apply)
- Please have a Citrix Sales Representative contact me.
 - Please send me more information on WinFrame.

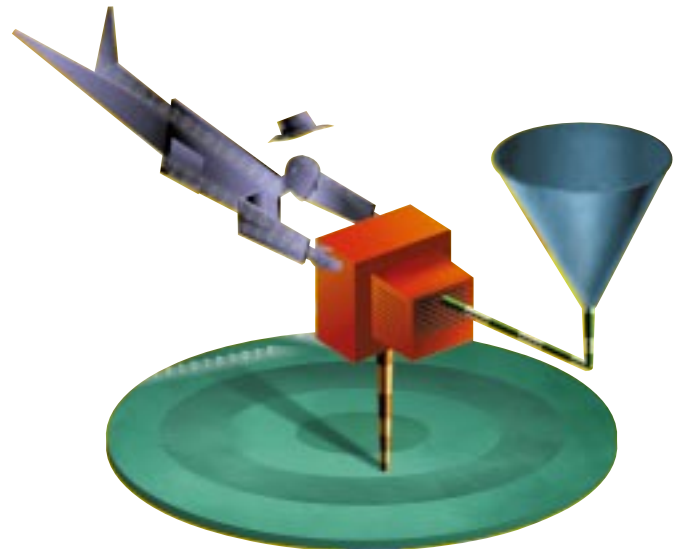
For a Thin-Client/Server Computing white paper, visit www.citrix.com/drive2

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