



Feature Guide for

Citrix MetaFrame

for Windows 2000 Servers.



Citrix is the world leader in application server software and services that provide “Digital Independence™”—the ability to deliver any application to any device over any connection—wireless to Web.





Introducing Citrix MetaFrame for Windows 2000 Servers.

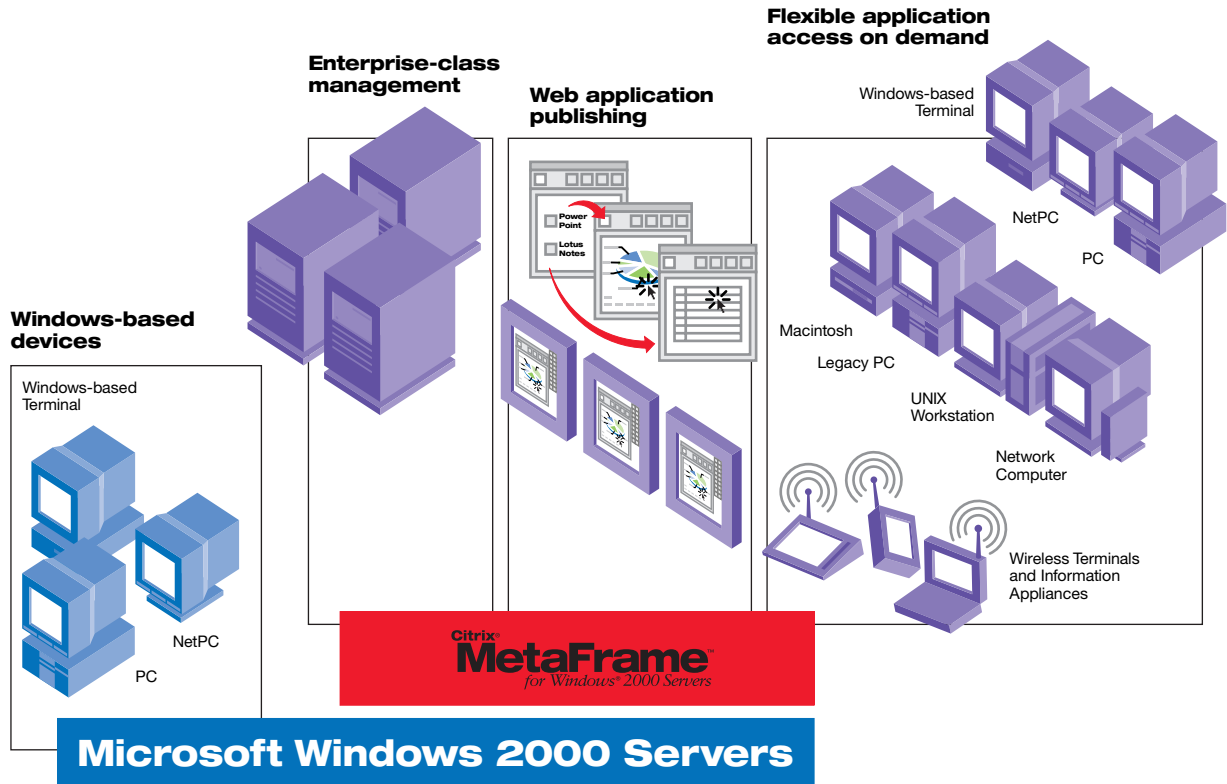
Full-throttle performance
to meet today's demanding IT challenges.

The information revolution, the advent of powerful servers, the explosion of new applications and new devices, and the incredible growth of the Internet have us on the doorstep of the digital economy.

Competing in this new world is fast and furious with non-stop, around-the-clock IT challenges all over the world. And your customers are asking you for answers.

What do your users need most? Information access to business-critical applications. And what do you need most? The ability to deliver those applications to any device, anywhere, fast, cost-effectively and predictably.

Now you can
reach more users,
with more applications, in more locations
with both *speed* and
predictability.



With Citrix MetaFrame for Microsoft Windows 2000 Servers you can provide an enterprise-class computing environment. Integrate and publish interactive applications into any standard Web browser. And extend the reach of Windows 2000 Servers beyond the desktop to all types of devices, even those that are non-Windows-based.

Enterprise-class management.

End-to-end command and control.

Rapid delivery of business-critical applications across the extended enterprise—on the Web and other networks—requires a robust, centralized application delivery and management capability. It must be scalable, reliable, manageable and secure. And it must offer predictability in terms of performance, user experience and cost.

Citrix® MetaFrame™ for Microsoft® Windows® 2000 Servers empowers you with the end-to-end command and control that enterprise-class computing demands.

With Citrix MetaFrame, you get fast, easy, cost-effective application deployment and users get a more predictable

computing experience, making them more productive. The result is a far better use of scarce IT resources.

With a robust enterprise-class management feature set, Citrix MetaFrame provides the command and control that IT managers demand, from Citrix Load Balancing Services that groups multiple Citrix MetaFrame servers into reliable, unified server farms to Citrix Installation Management Services which enables IT staff to package and publish applications to all Citrix MetaFrame servers. The applications are downloaded, installed and configured at the click of a mouse.

Citrix MetaFrame for Windows 2000 Servers Features and Benefits

Manageability—Systems, applications and users.

Systems

Robust systems management tools for enterprise-wide scalability, reliability and security.

Feature	Description	Benefit
License Pool Recovery	With Citrix license pool recovery, licenses can be better managed across the server farm. With this feature an administrator can define the number of backup servers to which user licensing data will be replicated.	Citrix license pool recovery provides for a greater level of availability across multiple Citrix servers.
Citrix Load Balancing Services	Citrix Load Balancing Services allows administrators to group multiple Citrix MetaFrame servers into scalable server farms. It dynamically routes users to the least-busy server to deliver the best application performance and server resource utilization. Single-point management features, such as application publishing, can be used in conjunction with Load Balancing to manage and configure the parameters for all load-balanced servers from a single location.	Administrators can scale Citrix servers more easily and cost-effectively to support thousands of users across multiple servers. This feature allows for the single-point management, access and control of all Citrix MetaFrame servers in a load-balanced server farm.
ICA® Master Browser	With Citrix ICA master browser manager, administrators now have the ability to control browser parameters such as backup ICA browsers, ICA gateways, and update and refresh intervals. Administrators can also configure which servers always attempt to become the master ICA browser.	Citrix ICA master browser manager feature simplifies browser administration through an intuitive user interface for better systems scaling and management.
Citrix Resource Management Services	Citrix Resource Management Services is the only application and systems management product designed specifically for the Citrix application software and Microsoft multi-user Windows NT® environments. Citrix Resource Management Services provides administrators with full-feature management tools for analyzing and tuning Citrix application servers and Microsoft Windows 2000 Servers, NT Server 4.0 and Terminal Server Edition systems. Its key features include application audit trail capability, system monitoring, capacity planning and billing reports.	The key features of Citrix Resource Management Services—audit trail, system monitoring and billing—are essential management tools for application servers. Administrators can create graphs depicting historical performance of any given Citrix MetaFrame server, enabling the administrator to optimize system performance and user up-time.
Citrix SecureICA Services	To help protect network data, the optional SecureICA Services for Citrix MetaFrame offers end-to-end RSA RC5 encryption for the ICA data stream. North American (128-bit) and international (56-bit) encryption levels are available.	SecureICA provides a higher, more efficient level of security between the Citrix client and the server. Organizations can ensure that data being sent over the network—even to the most remote locations—is secure and manageable.

Manageability—Systems, applications and users.

Applications

Deploy and manage applications from a single point to maintain optimum performance and uptime.

Feature	Description	Benefit
ALE Wizard	The ALE Wizard is an administrative utility that can automatically generate all HTML code required to effectively deploy applications using ALE.	The ALE Wizard simplifies the deployment of applications throughout the extended enterprise.
Application Publishing	Applications can now be accessed as simply as other resources on the network such as printers, or file shares. A published application contains all of the information needed to connect and interact with applications on the server. This includes application registration, user access control and authorized server lists.	Application publishing tools make it easy for administrators to deploy applications across multiple servers from a single point. Using these tools, administrators simply click to assign applications on any server to any user.
Citrix Installation Management Services	The Citrix Installation Management Services option gives administrators the ability to centrally manage software replication across Citrix server farms. An administrator can simply run an application's installation routine just once, then deploy the application to each server in the farm automatically.	This innovative system services option for Citrix MetaFrame offers administrators an excellent alternative to manually installing and configuring the same application on multiple Citrix servers. Administrators can now more easily and cost-effectively deploy applications to thousands of users across the enterprise.



Manageability—Systems, applications and users.

Users

Give users access to the applications they need, while maintaining control over their desktop experience.

Feature	Description	Benefit
Audio Support	Audio compression for low-bandwidth connections allowing users to extend their desktop audio schemes to remote applications running on the Citrix MetaFrame server.	Users have the ability to control the quality of the audio on the client desktop to maximize bandwidth utilization.
Automatic ICA Client Update	The automatic client update utility provides for automatic updates of the Citrix ICA client from the Citrix server. This tool provides an administrator with the ability to install the latest version of the client software, then schedule the download and installation of that software to a client's device.	Administrators no longer need to worry whether an ICA client device is running the latest version of the Citrix client software. Administrators can now update the client without having to touch every desktop throughout the enterprise.
Business Recovery Client	The Citrix client now includes the additional intelligence to support multiple sites (such as a primary and hot backup) with different addresses for the same published application name.	This feature provides for the consistent connection to published applications in the event of a primary server disruption. Users now have an even higher level of fault tolerance and seamless user experience.
Client Print Manager	This client-printing enhancement allows users to define which client printers can be configured on their client devices. It provides a means to store printer properties on a per-client basis while simplifying printer configuration for non-Windows clients.	This feature provides for an even higher level of seamless experience giving users additional flexibility and access to local system resources.
Drive Mapping	Allows information derived from a server application to be saved to a user's local hard drive. Users can also drag-and-drop to copy files. Drive letters are configurable and long filenames are supported.	This feature provides a seamless user experience by giving the user more flexibility and access to all local system resources including fixed and removable disk drives.
Local/Remote Clipboard	Users can cut, copy and paste information via the Windows clipboard between applications running remotely on the server or locally on the desktop. This feature also supports Rich Text Format.	Local/remote clipboard provides the familiarity of a local desktop, minimizing end-user training requirements while maximizing productivity. Additionally, the Rich Text Format preserves formatted text (e.g., bold and underline).
COM Port Mapping	Utilizing COM ports on the client device just as if they were on the server, port mapping enables peripheral devices, such as point-of-sale scanners, to be accessed by applications running remotely from a server.	With this feature, mobile users have the ability to access local printers to print remotely, regardless of location.

Manageability—Systems, applications and users.

Users (continued)

Give users access to the applications they need, while maintaining control over their desktop experience.

Feature	Description	Benefit
Program Neighborhood™	Program Neighborhood introduces a metaphor for user application access that replaces Remote Application Manager and delivers access to centrally deployed applications. With Program Neighborhood, server-based applications are simply pushed to the Program Neighborhood client and can also be integrated into the local 32-bit Windows desktops or pushed directly into the “Start” menu programs.	Similar in concept to Windows Network Neighborhood, Program Neighborhood provides for total administrative control of applications by providing users with dynamic access to published applications. Not only do users have an enhanced server-based application experience but also no client configuration is required. Program Neighborhood provides for complete administrative control over application access and local desktop integration.
Printer Mapping	Users can transparently access their local printers. Client printers are configured automatically for Windows-based clients and are added to the Print Manager.	Mobile users can print remotely, regardless of location.
ReadyConnect™ Client	For rapid, mass deployment of applications throughout the enterprise, this feature allows the Citrix ICA client to be predefined with phone numbers, IP addresses, server names and connection options prior to first-time installation.	All connection options are already defined. Users simply point and click to access predefined applications.
Seamless Windows	The Citrix ICA client for 32-bit Windows desktops enables seamless integration of remote applications into a client’s local Windows desktop. Within a single session, a user can gain access to multiple applications, have fully functional local keyboard controls (such as ALT-TAB), switch between local and remote applications on the local taskbar, define remote application icons on the local desktop, and even tile and cascade local and remote application windows.	These unique ICA features allow the user to fully integrate local and remote application windows, providing a true, seamless user experience. A user no longer needs to access an entire remote desktop to run multiple, remote Windows-based applications in the same session.
SpeedScreen™ 2	SpeedScreen 2 builds upon the intelligent agent technology that reduces the transmission of frequently repainted screens. In comparison with earlier versions of this technology, SpeedScreen 2 bandwidth consumption is on average reduced by 25–30% and total packets transmitted cut by up to 60%—resulting in significant improvements in measured speed on restricted bandwidth connections.	SpeedScreen 2 furthers the user experience with consistent performance regardless of network connection by reducing latency and improving the feel of the server-based application.

Manageability—Systems, applications and users.

Users (continued)

Give users access to the applications they need, while maintaining control over their desktop experience.

Feature	Description	Benefit
Session Shadowing	Administrators and help-desk employees can remotely join or take control of another user's ICA session to see the display on the screen or control the mouse and keyboard.	This unique ICA feature makes remote support, diagnosis and training easy. This feature is ideal for online interactive teaching—especially for introducing users of non-Windows ICA clients (such as Mac® and UNIX®) to Windows-based applications.
VideoFrame™	Citrix MetaFrame for Windows 2000 Servers software, in conjunction with VideoFrame, enables the production and deployment of custom video applications to 32-bit Windows ICA clients using an innovative intelligent compression and a streaming extension to the ICA protocol.	By integrating VideoFrame into a Citrix server farm, administrators can now deploy custom video applications to any 32-bit Windows desktop—on demand—while maintaining consistent performance across any network connection regardless of available bandwidth.



Web application publishing.

Run any app on the Web. *Now!*

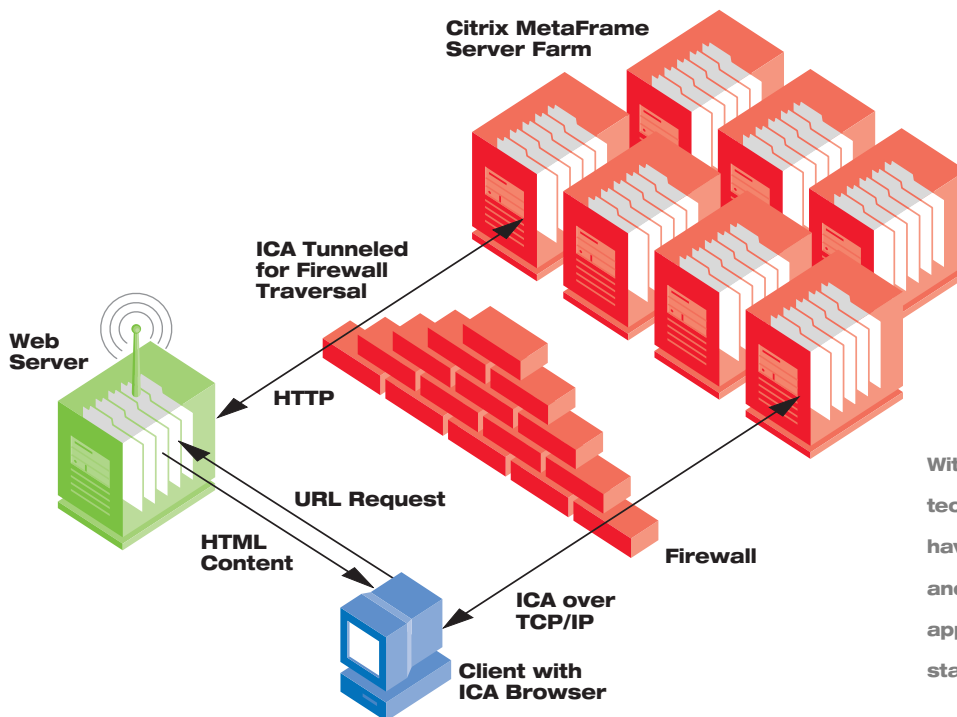
The Internet has changed the way the world competes. Simply put, applications must be available via the Internet to users everywhere, inside and outside the organization, using a standard Web browser.

With Citrix application portal technology, NFuse™, you have the power to integrate and publish interactive applications into any standard Web browser. And with Citrix MetaFrame for the UNIX operating environment and Citrix application launching and embedding (ALE) you can seamlessly integrate UNIX and Java™ applications in a single portal as well.

To publish applications you simply create application portals with the Citrix NFuse Web portal wizard or

simplified scripts. You define the applications set specific to each user or group and the application portal is dynamically created. When the portal is accessed from a Web browser, the user clicks on the desired application, it opens in the browser and works as if it were a local application.

With NFuse from Citrix, you can enhance your users' computing experience with the power to personalize which applications users receive. You can even personalize the browser and content around the applications, by user, if you choose. Plus, you retain the ability to manage applications using all the powerful capabilities of Citrix MetaFrame for Windows 2000 Servers. It's the ultimate way to run existing apps on the Web. Now.



With Citrix application portal technology, NFuse, you have the power to integrate and publish interactive applications into any standard Web browser.

Citrix MetaFrame for Windows 2000 Servers

Features and Benefits

Webability—Application integration and control. In a browser.

Feature	Description	Benefit
Application Launching and Embedding (ALE)	Application launching and embedding allows full-function, Windows-based applications to be launched from, or embedded into HTML Web pages, without rewriting a single line of code. The application can be accessed via an ActiveX® Control for Microsoft Internet Explorer, a plug-in for Netscape Navigator® or in a Java applet for any Java-enabled device.	Administrators can instantly integrate Windows-based applications into the user's desktop. As a result, IT professionals can extend the reach of business applications across the Web while saving time and money. The launched or embedded application looks, feels and performs as if it were running locally, even though it is executing on the server.
Application Portal Technology—NFuse	<p>Integration—Integrate existing and new applications into any standard Web browser. Instantly.</p> <p>With Citrix application portal technology, NFuse, you have the power to integrate and publish interactive applications into any standard Web browser. And with Citrix MetaFrame for the UNIX operating environment and Citrix application launching and embedding (ALE) you can seamlessly integrate UNIX and Java applications in a single portal as well. To integrate applications with Citrix you define the applications set and the technology dynamically creates an application portal specific to each user or group of users. When the portal is accessed from a Web browser the user clicks on the desired application, it opens in the browser and works as if it were on a local desktop.</p> <p>Personalization—Personalize which application a user receives. Personalize the browser and content around the application, by user, if you choose.</p> <p>With Citrix NFuse, you have the power to enhance your users' Web browser experience by providing personalized content and access to any application. Add any HTML, scripting, graphics or other creative content to your own custom Web pages or use one of the templates provided to build a new one. You can embed applications within Web pages and launch application windows.</p> <p>Control—Use all the robustness of Citrix MetaFrame for application management.</p> <p>You maintain complete administrative control over app deployment and management. Citrix NFuse technology extends apps to users based on "who" they are. Using single-point control, administrators can deploy new apps to users with a few mouse clicks and minutes later users simply refresh their browsers and the new apps appear on their desktops.</p>	<p>Administrators retain all the robust features and benefits of Citrix MetaFrame while getting business and productivity applications across the Web to users quickly and cost effectively, while maintaining single-point control. Ideal for enterprises that need to extend applications to users across the country or around the world cost effectively, regardless of their client devices.</p> <p>This gives administrators the freedom to personalize the browser and content around the applications. You can even build corporate intranets while providing links to local news, corporate information and client or supplier websites, all while delivering apps to the users who need them.</p> <p>Administrators maintain the same high degree of enterprise-class command and control while deploying apps over the Web! This new technology uses the same URL for all users—no need to manage multiple websites. Citrix NFuse technology allows browser access to any application, using any device, from any location.</p>
Enhanced Anonymous User Support	Designed primarily for ALE applications published on the Internet or intranet, anonymous users are configured and administered as a single group. Access rights and system permissions apply to all anonymous users equally.	The use of anonymous accounts eases the administration of a published application when the exact identity of a user is not known or required, e.g., the Web.

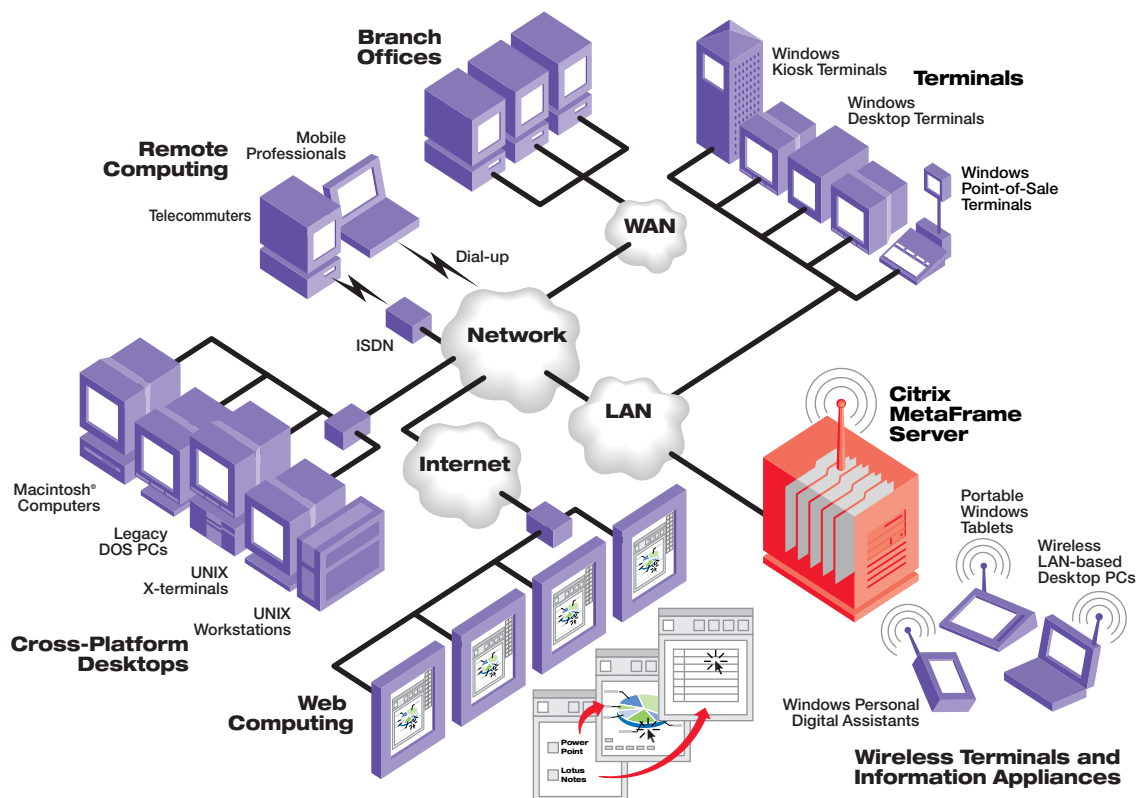
Flexible application access on demand. Any user. *Anywhere.*

In the digital economy, applications must be delivered to users around the world on a variety of devices and over many types of connections.

Citrix MetaFrame uses Citrix ICA, an industry standard that enables client devices of all types to shift application processing to the server with very low bandwidth requirements. This extends the reach of Windows 2000 Servers. PCs, Mac computers, UNIX and Linux workstations, Web browser-enabled devices, laptops, set top boxes, mobile handheld devices and other network appliances can be used transparently to access any application running on Windows 2000 Servers. All applications can be accessed, seamlessly, over the Internet, LAN, WAN, dial-up or wireless connection. And all applications look, feel and perform as if they are running on a local desktop.

The flexibility in choice of device—new, next generation or even legacy—means fewer hardware roadblocks and far less technology churn. And with more efficient use of network bandwidth, you can actually reduce telecommunications costs. And avoid the expense of an untimely network upgrade.

Citrix MetaFrame offers a range of features that support flexible application access on-demand, from Seamless Windows, which allows users to completely integrate local and remote application windows for a true seamless experience, to Business Recovery Client, which ensures a consistent connection to published applications in the event of server disruption.



Citrix MetaFrame for Windows 2000 Servers Features and Benefits

Flexibility—Any application, any device, any connection.

Feature	Description	Benefit
Any Client Device	Extends the reach of Windows-based applications to virtually any client device including information appliances, wireless devices, network computers, X-devices, Windows-based terminals, and Pentium®, 486, 386 and 286 PCs. Supports all types of Windows clients, including Windows CE, Windows NT Workstation, Windows 95, Windows for Workgroups and Windows 3.x. Also supports non-Windows clients including DOS, UNIX, OS/2® Warp, Mac OS and Java.	Organizations can deliver the same set of applications to virtually any client device without rewriting a single line of code, changing client hardware or adjusting client system configurations.
Any Network Connection	Connects users to the network through standard telephone lines, WAN links (T1, T3, 56Kb, x.25), broadband connections (ISDN, Frame Relay, ATM) and wireless connections as well as over the Internet or corporate intranets. Supports all LAN and WAN protocols, including TCP/IP, IPX, SPX, NetBIOS and direct asynchronous connections.	Ideal for enterprises that need to extend applications to users everywhere—regardless of connection type or available bandwidth. For companies with multiple networks and file servers, it's a convenient and efficient way to get enterprise-wide application deployment.
Any Application	Users can access the full range of business and personal productivity applications including the latest Windows-based applications, client/server, mainframe and even Java applications, from a universal client, regardless of available horsepower or operating system. And with Citrix MetaFrame for the UNIX operating environment, you can even extend UNIX and Java applications across an enterprise to any client device in any location, including branch offices and mobile users.	Organizations can reduce the total cost of application ownership by leveraging their existing technology investments. Users are able to access the most advanced business-critical and productivity applications with their preferred devices, eliminating the expensive training normally required.

Citrix MetaFrame Value Add for Microsoft Windows 2000 Servers.

Available Clients	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
Windows NT	■	■
Windows 95/98	■	■
Windows 3.11 (Workgroups)	■	■
Windows 3.1		■
Windows CE	■	■
DOS		■
Macintosh® (Motorola, PowerPC®)		■
Browser — Internet Explorer		■
Browser — Netscape		■
UNIX — Solaris™/SPARC™		■
UNIX — Solaris/x86		■
UNIX — SunOS		■
UNIX — DEC		■
UNIX — HP/UX		■
UNIX — IBM		■
UNIX — SGI		■
UNIX — SCO		■
UNIX — Linux (Red Hat, Caldera, SuSE, Slackware)		■
Java — JDK 1.1		■
Java — JDK 1.0		■
RISC OS		■
PSOS		■
NCI OS		■
Net OS		■
QNX OS		■

Client Devices	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
PCs (Windows 3.11 or greater)	■	■
PCs (Windows, DOS, UNIX, Linux)		■
Macintosh (Motorola, PowerPC)		■
Handheld PCs (HP Jornada, Compaq CSeries, etc.)	■	■
Network computers (Sun™ JavaStation™, IBM Network Station, etc.)		■
Windows-based Terminals (CE-based)	■	■
Windows terminals (DOS, Linux, etc.)		■
Network terminals (Wyse® Winterm™ 5000, etc.)		■
Set top devices (BocaVision STB121, etc.)		■
Mobile hand-held devices and network appliances		■

Client Features	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
Manual drive redirection	■ ¹	■
Bitmap caching	■	■
Persistent bitmap caching	■	■
Auto printer creation	■	■
Clipboard redirection	■	■
Automatic drive redirection		■
SpeedScreen 2		■
Seamless Windows		■
Business Recovery Client		■
Program Neighborhood		■

¹ PC clients running RDP can map local drives through the use of Windows networking (this is not a feature of RDP).

Local Device Support	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
Local printer (parallel port)	■	■
Local client print spooler	■	■
COM port redirection		■

Client Multi-Media	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
System sounds (beep)	■	■
16-bit stereo (WAV, AVI)		■
Video support		■ ²
Multi-media bandwidth control		■ ²

² Citrix MetaFrame for Windows 2000 Servers is video-ready on both the server and the 32-bit Windows client. On-demand video streaming is supported when used in conjunction with Citrix VideoFrame.

Transport Protocols	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
TCP/IP	■	■
IPX		■
SPX		■
NetBEUI		■

Connections	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
LAN	■	■
WAN	■	■
RAS dial-up	■	■
Direct serial connection (async.)		■
Direct dial-up		■
Browse available servers		■

Server Features	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
One-to-one Shadowing	■	■
One-to-many Shadowing		■
Many-to-one Shadowing		■
Cross-server Shadowing		■
Application Publishing		■
Program Neighborhood		■
Cross-domain management		■
Cross-subnet management		■
Automatic Client Update		■
Shadow Task Bar		■
Publish Applications to the Web (ALE)		■
Citrix WinFrame®/Citrix MetaFrame interpretability and management		■
Administrator Toolbar		■

Multi-Media	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
16-bit Stereo (WAV, AVI)		■
Video		■ ²
Multi-media bandwidth control		■

² Citrix MetaFrame for Windows 2000 Servers is video-ready on both the server and the 32-bit Windows client. On-demand video streaming is supported when used in conjunction with Citrix VideoFrame.

Management Services	Windows 2000 Servers with Terminal Services	With Citrix MetaFrame
Resource Management Services	■	■ ³
Encryption	■	■
Security Management Services (RSA RC5 128-bit)		■
Load Balancing	■ ⁴	■
Advanced Load Balancing (app publishing, management services)		■
Installation Management Services		■

³ Citrix Resource Management Services is available for Microsoft Windows 2000 Servers.

⁴ Windows 2000 Terminal Services with NLB (Network Load Balancing) is limited to 32 servers and is only available in Windows 2000 Advanced Server.

NOTE: Some of the information in this document is based on public information provided by Microsoft Corporation at its Web site, which may be subject to change without prior notice; see www.microsoft.com.

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